European Transport Safety Council

25 YEARS 1993-2018

Briefing:

5th EU Road Safety Action Programme 2020-2030

February 2018

1. Executive Summary

2016 was the third consecutive poor year for road safety: 25,670 people lost their lives on EU roads compared to 26,200 the previous year - a 2% decrease. But this followed a 1% increase in 2015 and stagnation in 2014. In addition, around 135,000 people were seriously injured on European roads in 2014 according to European Commission estimates based on the MAIS 3+ standard definition of a serious injury.

Road collisions give rise to huge costs to society. A recent study estimated the value to society of preventing all reported collisions in the EU to be about 270 billion Euro in 2015, which is nearly twice as large as the annual EU budget.

Building political commitment and leadership at the highest level are prerequisites for preventing road traffic deaths and injuries. The lack of it at EU Member State level has contributed to a decline in levels of police enforcement, a failure to invest in safer infrastructure and limited action on tackling speed and drink driving in a number of countries. At the EU level, there has also been a conspicuous lack of action. This in turn has a negative influence at Member State level. Minimum EU vehicle safety standards have not been updated and plans to revise EU infrastructure safety rules have been delayed.

It is now time for the European Commission to build on the momentum and strong political will expressed by EU transport ministers in the Valletta Declaration on Road Safety[1] and come forward with a new and ambitious long-term road safety programme. The new EU 10-year action programme should be guided by the long-term Vision Zero[2] and embody the Safe System approach.[3] It should enshrine the targets adopted in the Valletta Declaration to reduce both deaths and serious injuries by 50% between 2020 and 2030. Alongside final outcome indicators, results-based performance indicators should be set.

The new EU 10-year action programme should also include priority measures for action and a detailed roadmap against which performance is measured and delivery made accountable to specific bodies. The programme should summarise the measures in different priority areas and how the tools fit

[1] Valletta Declaration on Improving Road Safety. (2017), https://goo.gl/JsX7gS

[2] A vision can be regarded as a leverage point to generate and motivate change and needs to be far-reaching and long-term, looking well beyond what is immediately achievable. ETSC (2006) A Methodological Approach to national Road Safety Policies. Vision Zero was adopted in the European Commission Transport White Paper 2010, https://goo.gl/BwTY9R

[3] European Commission (2013) Commission Staff Working Document: On the Implementation of Objective 6 of the European Commission's Policy Orientations on Road Safety 2011-2020 – First Milestone Towards an Injury Strategy, https://goo.gl/gCw1zk

together. A timetable should structure the main measures for adoption and implementation. It should also identify who the main players are to make sure that the desired future becomes a reality. The strategy must be set within the context of changing mobility patterns including new trends such as automation, increased walking and cycling due to promotion of active travel and the ageing of Europe's population.

Road safety policy needs to be supported by effective institutional management in order to achieve long term effects on road safety levels. Clear institutional roles and responsibilities should be set up with strong political leadership from the Commissioner for Transport. As well as legislation, in the following decade the European Commission must continue to fulfil its crucial role in supporting EU Member States and motivating them to do their utmost.

Priorities for the next decade should be split between the need to continue work on reducing 'traditional' risks such as drink-driving, speed, distraction and failure to wear a seatbelt and tackling new and rapidly evolving challenges.

ETSC has identified nine main priorities for action with the top three outlined here in the Executive Summary: vulnerable road user safety, automation and reducing the numbers seriously injured on Europe's roads.

A new, EU-level road transport agency could be critically important to planning and delivering new measures as well as providing regulatory oversight of the increasingly complex vehicle type approval that will be required to deal with increased automation.

Improving the safety of vulnerable road users

Pedestrians killed represented 21% of all road deaths in 2014, the figure for cyclists stood at 8%. Powered two wheelers (PTWs) represent 17% of the total number of road deaths while accounting for only 2% of the total kilometres driven.[4] However big disparities exist between countries. [5] The share of deaths of unprotected road users is increasing as car occupants have been the main beneficiaries of improved vehicle safety. Cyclists and pedestrians are generally unprotected and are vulnerable in traffic. As active travel is being encouraged for health, environmental, congestion and other reasons[6], the safety of walking and cycling in particular must be addressed urgently.

[4] ETSC (2011) 5th Road Safety PIN report, Chapter 2, Unprotected road users left behind in efforts to reduce road deaths, https://goo.gl/zxCfzx

[5] PIN Report "Making Walking and Cycling on Europe's Roads Safer' (2015), http://goo.gl/FVDAZW

[6] Geus, B.d. & Hendriksen, I. (2015), *Cycling for Transport, physical activity and health: what about pedelecs?* . In: Gerike, R. & Parkin, J. (red.), Cycling futures: From research into practice Ashgate Hendriksen, I. & Van Gijlswijk, R. (2010). *Fietsen is groen, gezond en voordelig: Onderbouwing van 10 argumenten om te fietsen*

Priorities for action in the next decade to improve the safety of pedestrians, cyclists and powered two wheelers fall under the three broad headings of infrastructure, vehicle safety and road user behaviour improvements.

Under infrastructure, ETSC would encourage the extension of the instruments of the Infrastructure Safety Directive to all EU co-financed roads and to main urban and main rural roads. Under vehicle safety, much more can be done and priorities should include redesigning car fronts to include cyclist protection (Regulation 2009/78) and introducing vehicle safety technologies which reduce prime risks: Intelligent Speed Assistance (ISA), Automated Emergency Braking (AEB) and alcohol interlocks. Front, side, and rear truck safety redesigns should be mandated to improve cyclist and pedestrian safety.

Within road user behaviour, enforcement should be intensified especially of speeding in urban areas where there are high numbers of pedestrians and cyclists.

Automated and connected mobility

How will regulators ensure autonomous systems are tested and approved to common standards, especially in a world where cars are already receiving over-the-air software updates that affect safety performance, such as Tesla's autopilot updates? There is an urgent need to put in place certain prerequisites *prior* to the wider deployment of automated vehicles in Europe.

At present there is an urgent need for a new, harmonised regulatory framework for automated driving at EU level. Setting this up would be an essential precursor to automation. The EU type approval regime should be revised to ensure that automated vehicles comply with all the specific obligations and safety considerations of traffic law in different member states. This should cover all the new safety functions of automated vehicles, to the extent that an automated vehicle will pass a comprehensive test equivalent to a 'driving test'. This should take into account high risk scenarios for occupants and interactions with cyclists, pedestrians and powered two wheelers.

While distraction might be mitigated in the long term by increased automation, urgent action will be required in the period to 2030 to reduce distracted driving in the existing vehicle fleet.

[Cycle use is green, healty and cheap: Evidence in support of 10 reasons to use bicycles] TNO Kwaliteit van Leven: Preventie en Zorg, Leiden, http://goo.gl/bCK3Vg

Serious injuries

Since 2010 the number of people seriously injured based on national definitions of serious injury on EU roads was reduced by just 0.5%, compared to a 19% decrease in the number of deaths in the same group of countries.[7] In 2014, around 135,000 people were seriously injured in the EU based on the common EU definition MAIS3+ according to estimates by the European Commission. There is strong political support to take action on serious injury.

Vulnerable road users, for example pedestrians, cyclists, motorcyclists or users in certain age groups, notably the elderly, are especially affected by serious road injuries[8]. Serious road traffic injuries occur on all kinds of road, but in comparison with deaths a larger proportion of them occur in urban areas and involve vulnerable road users[9]. On rural roads these injuries are more severe and thus more likely to be fatal.

Priority measures for reducing serious injuries include adopting an EU target which is monitored and regularly reviewed[10]. Infrastructure can also play a key role in reducing the severity of injury when collisions occur. Recommendations include drafting guidelines for promoting best practice in traffic calming measures and supporting area-wide urban safety management, in particular when 30km/h zones are introduced. One area for action is that of post-collision care. All European member states should offer equally high standards of rescue, hospital care and long-term rehabilitation following a road collision. Measures include involving health professionals in developing good practices and guidelines on essential trauma care and emergency services.

Main recommendations

EU road safety strategy framework

- Prepare and adopt a new strategic Road Safety Programme for the EU including targets, vision, KPIs, measures and a timetable and structure for delivery.
- Adopt measures to reduce the road safety gap between best and worst performing EU Member States, such as dedicated funds for infrastructure remedial schemes.
- Appoint a High Level Road Safety Ambassador and create a Road Safety Task Force.

[7] It is not yet possible to compare the number of seriously injured between Member States because of the different national definitions of serious injury, together with differing levels of underreporting. It is also too early to use data based on MAIS 3+ for comparing countries performance over time. The comparison therefore takes as a starting point the changes in the numbers of seriously injured (national definition) since 2010.

[8] https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/injuries_study_2016.pdf

[9] European Commission (2013) Staff Working Document.

[10] https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/injuries_study_2016.pdf

- Introduce a new European Road Safety Agency which would fulfil a number of the following possible roles:
    - collecting and analysing accident data and exposure data;
    - helping to speed up developments in road safety;
    - provide a catalyst for road safety information and data collection;
    - encourage best practice across the EU;
    - label unsafe roads, road equipment and vehicles;
    - identify unsafe behaviours;
    - communicate results to EU road users.

EU funds

- Identify funding within the new EU budget to support investment in new road safety measures and prevent the costs to society of road death and serious injury.

Vulnerable road users

- Dedicate funds for cycling, walking and powered two wheeler infrastructure under the Connecting Europe Facility (CEF) to support increasing the safety of VRUs.
- Encourage EU Member States to adopt maximum 30km/h in residential areas and areas where there are high levels of cyclists and pedestrians, or where there could be potential to increase cycling and walking by investing in infrastructure.

Vehicle safety

- Upgrade type approval crash tests to be more closely aligned with the requirements of Euro NCAP crash tests.
- Redesign car fronts to include cyclist protection.
- Extend the mandatory fitment of advanced seat belt reminders as standard equipment to all seats.
- Fit all new commercial vehicles with assisting Intelligent Speed Assistance (the system should be overridable up to 90km/h for lorries, 100km/h for buses, in line with existing EU legislation on speed limiters, and 130km/h for vans) and all new passenger cars with an overridable Intelligent Speed Assistance system that defaults to being switched on.
- Ensure that retrofitting of vehicles with alcohol interlocks continues to be possible in the future. Legislate for a consistently high level of reliability of alcohol interlock devices. As a first step towards wider use of alcohol interlocks, legislate their use by professional drivers.

- Develop mandatory requirements for safer goods vehicles stipulating improved cabin design and underrun protection, and remove exemptions that exist so as to require the use of side guards to protect other road users in collisions with trucks.
- Develop a multi-phase, technology-neutral testing protocol for all M and N vehicles for distraction and drowsiness monitoring.
- Support EU Member States in collecting harmonised in-depth accident investigation data relating to fatal and serious injury collisions, including single-vehicle collisions.

Enforcement

- Create an EU fund to enable enforcement of speeding and drink driving using recognised best practices.[11]
- Evaluate the barriers preventing full implementation of the CBE Directive 2015/413 and adopt countermeasures to overcome them within the revision of the Directive.

Infrastructure

- Create an EU fund to support priority measures such as for cities to introduce 30 km/h zones (particularly in residential areas and where there are a high number of VRUs) and to invest in high risk roads which carry a high percentage of traffic.
- Extend the application of the instruments of the RISM Directive 2008/96 to cover all motorways, all EU (co-)financed roads, main rural and main urban roads.
- Set minimum road infrastructure safety requirements and draw up supporting technical guidelines concerning the harmonised management of high-risk sites by means of low cost measures.

Serious injuries and post-collision care

- Adopt a new joint EU strategy to tackle serious injuries involving all directorate generals in particular DG Health and Food Safety.
- Encourage Member States to develop effective emergency notification and collaboration between dispatch centres, fast transport of qualified medical and fire/rescue staff, liaison between services on scene, treatment and stabilisation of the casualty, and prompt rescue and removal to an appropriate health care facility.

[11] Several EU Member States have already successfully used EU funds to introduce safety camera networks.

Fitness to Drive

- Propose a Directive on drink driving, setting a zero-tolerance level for all drivers.
- Introduce an EU zero tolerance system for illicit psychoactive drugs using the lowest limit of quantification that takes account of passive or accidental exposure.
- Apply the use of the classification and labelling of medicines that affect driving ability and support awareness information campaigns of medical professionals.

Child safety

- Under Directive 2005/39, make rear-facing child seats mandatory for as long as possible, preferably until the child is 4 years old.

Training and education

- Encourage all EU Member States to deliver road safety education that starts at school and which is part of a continuum of lifelong learning.
- Develop EU evaluation tools to design, implement and evaluate traffic and mobility education.

Novice road users (15-25 years old)

- Encourage EU Member States to push young people to use safer vehicles and utilise assistive technologies. Further explore the link between telematics-based insurance and safe driving.

Revision of EU Directive 2006/126 on driving licences:

- Introduce hazard perception training, expand formal training to cover driving and riding style as well as skills and encourage more accompanied driving to help gain experience.
- Develop minimum standards for driver training and traffic safety education with gradual alignment in the form, content and outcomes of driving courses across the EU.

Work-related road safety

Revision of Regulation 561/2006/EC concerning driving times and rest periods:

- Work towards consistent levels of enforcement of Driving and Resting time across the EU. Support efforts to tackle fraudulent use of tachographs under Regulation 2014/165 including equipping enforcement officers with knowledge and equipment and improve use of data sharing arrangements between agencies within Member States.
- Extend the current legislative framework for professional driver training, driving and resting hours to van drivers.

2. Introduction

The EU is currently working towards meeting its target of reducing road deaths by 50% by 2020, compared to 2010 levels.

Since 2014, progress has virtually ground to a halt. 2016 was the third consecutive poor year for road safety: 25,670 people lost their lives on EU roads compared to 26,200 the previous year - a 2% decrease. But this followed a 1% increase in 2015 and stagnation in 2014. There has been progress over a longer timeframe. Since 2010 road deaths in the EU28 have been cut by 19%, equivalent to a 3.4% average annual reduction.

The failure to reduce deaths at the pace required means that annual reductions of 11.4% each year are now needed between 2017 and 2020 for the EU to stay on track. Significant and urgent efforts are needed to achieve this.

In addition, around 135,000 people were seriously injured on European roads in 2014 according to European Commission estimates based on the MAIS 3+[12] standard definition of a serious injury.

Road collisions give rise to huge costs to society. A recent study estimated the value to society of preventing all reported collisions in the EU to be about 270 billion Euro in 2015[13], which is nearly twice as large as the annual EU budget[14].

Political will to improve on this poor progress until 2020 is essential. The lack of it at EU Member State level has contributed to a decline in levels of police enforcement, a failure to invest in safer infrastructure and limited action on tackling speed and drink driving in a number of countries. At the EU level, there has also been a conspicuous lack of action. This in turn has a negative influence at Member State level. Minimum EU vehicle safety standards have not been updated and plans to revise EU infrastructure safety rules have been delayed.

[12] European Commission Press release (March 2016), http://goo.gl/w0lQkv

[13] About 40 per cent of 270 billion EURO represents a saving of GDP wasted in collisions and their consequences, and the other 60 per cent represents a monetary valuation of the saving in human costs to close associates of those who are killed, and to the injured and their close associates.
Reported costs show wide variations between countries, mainly due to: 1) methodological differences, especially concerning the method applied for the calculation of human costs, 2) differences regarding the cost components that are taken into account, 3) differences in the definitions of a serious and a slight injury, and 4) differences in levels of underreporting. These issues are taken into account in the corrected estimates. In Wijnen, W.,et al.. (2017), Crash cost estimates for European countries, Deliverable 3.2 of the H2020 project SafetyCube https://goo.gl/Ff6jYo. The same study suggests that if the value of prevention of unreported collisions were included, the costs to society would be more like 500 billion Euro

[14] European Union, Budget, 2015 figures, https://europa.eu/european-union/topics/budget_en

In its input to the Road Safety Strategy Mid Term Review in 2014 ETSC called upon the EC to implement measures not adopted already in 2011-2014 and stressed that this was needed in order to match up to the ambitious target set for 2020.[15] Measures adopted during the last decade 2000-2010 did help to reduce deaths in the early part of this decade.[16] One of the most important lessons learnt from the 3rd RSAP was that, if more legislation and proposals had actually been translated into action, then even more lives would have been saved.

Lack of EU legislative action in the early part of this decade may have contributed to the current stagnation as the implementation of life-saving legislation has been postponed. The economic upturn may also be having an impact. There too during the economic crisis years of the late 2000s ETSC was calling for concerted efforts to counter road risk which was expected to increase with an economic upturn.

[15] ETSC (2014) Mid Term Review of the European Commission Road Safety Policy Orientations, ETSC Briefing https://goo.gl/UBPvpg
[16] Ibid.

3. Framework for a 5th Road Safety Progamme

It is now time for the European Commission to build on the momentum and strong political will expressed by EU Transport Ministers in the Valletta Declaration on Road Safety[17] and come forward with a new and ambitious long-term road safety programme. The new EU 10-year Action Programme should be guided by the long-term Vision Zero[18] and embody the "Safe System Approach".[19] It should enshrine the targets adopted in the Valletta Declaration[20] to reduce both deaths and serious injuries by 50% between 2020 and 2030. Specific targets to reduce deaths of children and vulnerable road users should also be adopted. Positive synergies can also be gained by supporting the delivery of other EU policy objectives in the fields of environment, health and intelligent transport systems.

The role of road safety targets in reducing road deaths is known to be effective, as confirmed both by the OECD[21] and scientists[22]. The EU targets for road deaths were an important driver for the dramatic reductions achieved in countries such as Lithuania, Latvia, Spain, Portugal, Estonia and Slovakia, all of which have cut deaths by more than 60% since 2001. EU targets also inspire competition and knowledge sharing between EU Member States.

Alongside final outcome indicators, such as the renewal of the target to reduce road deaths and a new target to reduce serious injuries, results based Performance Indicators should be set in line with the "Safe System Approach". As defined by SafetyNet, Safety Performance Indicators (SPI) are the measures (indicators), reflecting those operational conditions of the road traffic system, which influence the system's safety performance. The purpose of an SPI is:

- to reflect the current safety conditions of a road traffic system (i.e. they are considered not necessarily in the context of a specific safety measure, but in the context of specific safety problems or safety gaps);

[17] Valletta Declaration on Improving Road Safety. (2017), https://goo.gl/JsX7gS
[18] A vision can be regarded as a leverage point to generate and motivate change and needs to be far-reaching and long-term, looking well beyond what is immediately achievable. ETSC (2006) A Methodological Approach to national Road Safety Policies. Vision Zero adopted in the European Commission Transport White Paper 2010, https://goo.gl/BwTY9R
[19] European Commission (2013) Commission Staff Working Document: On the Implementation of Objective 6 of the European Commission's Policy Orientations on Road Safety 2011-2020 – First Milestone Towards an Injury Strategy, https://goo.gl/gCw1zk
[20] Valletta Declaration on Improving Road Safety. (2017), https://goo.gl/JsX7gS
[21] OECD (2008), Towards zero: achieving ambitious road safety targets and the safe system approach, https://goo.gl/Q8xNbo
[22] Elvik (1993), "Quantified road safety targets: a useful tool for policy making", Accident analysis and prevention, https://goo.gl/asdj7L

- to measure the influence of various safety interventions, but not the stage or level of application of particular measures;
- to compare between different road traffic systems (e.g. countries, regions)[23].

SPIs can give a more complete picture of the level of road safety and can detect the emergence of problems at an early stage, before these problems result in collisions. They use qualitative and quantitative information to help determine a road safety programme's success in achieving its objectives[24]. For an effective SPI, it is important that the definition is simple, it can be monitored relatively easily, that it can be compared to a target and its output controlled by measures. ETSC will refer to "Key" Performance Indicators (KPIs) as the recommendation is to monitor "key" indicators in areas of road safety work including infrastructure, the vehicle and driver behaviour. An example of this approach is Sweden's "Management by Objectives"[25].

Within the framework of its Road Safety Performance Index (PIN) Project ETSC has been collecting data on a range of different topics since 2006 proving that, although challenging, it certainly is feasible to measure performance on different areas of road safety in this way. ETSC's PIN Project shows how data collection, analysis and benchmarking is a strong road safety tool for motivating action and galvanising political will at national and EU level. Based on this experience in the field, ETSC suggests some Key Performance Indicators and a two-step process to be developed by EU Member States, the European Commission and road safety experts. In a first phase, EU Member States would be asked to collect the data required for the indicators with technical and financial support of the European Commission. In a second phase, and based on the experience of the first phase, targets would be set to match the performance of the three best performing countries for each indicator.

The suggested KPIs:

- % of motor vehicles (car, van, HGV, Bus) travelling within the speed limit by road type (urban, rural non-motorway, motorway).
- % reduction in the number of alcohol related road deaths[26].
- % of seat belts use in front and rear seats by type of motor vehicle occupants
- % of occupants killed without wearing a seat belt/restraint system.
- % of children correctly fitted in the appropriate child restraint system.
- % of passenger car drivers using a handheld cell phone (roadside survey).

[23] Project SafetyNet: Deliverable D3.1 : State of the art Report on Road Safety Performance, https://goo.gl/iZqT41
[24] Ibid.
[25] Management by Objectives (2017) Vision Zero Academy, https://goo.gl/s7ojn3
[26] Using the SafetyNet recommended definition of drink driving: any death occurring as a result of road accident in which any active participant was found with blood alcohol level above the legal limit.

- % of helmet use by motorcycle, moped and bicycle riders.
- % of rural roads with 4 star EuroRAP.
- % of roads meeting the standards of the Infrastructure Safety Management Directive.
- % of roads with speed limits set at appropriate levels (e.g. 30 km/h)[27].
- % of 1-2-3-4-5 star Euro NCAP cars among new passenger cars.
- Age of the vehicle fleet.
- Number of checks performed by the police and safety cameras (where applicable) in the priority areas of speeding, drink driving, illegal use of mobile devices, seat belt, child restraint and helmet use.
- Exposure data for all road users (pedestrians, cyclists, PTWs, cars, vans, HGVs) on all types of roads (urban, rural non-motorway, motorway).
- % of work-related road collisions within the framework of the road safety field that covers road deaths and serious injuries among professional road users, commuters, third parties and workers on the roads and covers all road user groups; allowing for a breakdown of professional road users, commuters, road workers and third party deaths and serious injuries.

Indicators to monitor post collision response

- Proportion of patients treated by ambulance staff within 15 minutes.
- Proportion of patients receiving Advanced Trauma Life Support (ATLS Protocol[28]).
  (This could be a one-time check, by EU Member States, to see if, and what proportion of, hospitals practice ATLS.)

The new EU 10-year action programme should also include priority measures for action and a detailed road map against which performance is measured and delivery made accountable to specific bodies (see Irish Road Safety Strategy[29]). The programme should summarise the measures in different priority areas and how the tools fit together. It should also identify who the main players are to make sure that the desired future becomes a reality. The strategy must be set within the context of changing mobility patterns including new trends such as automation, increased walking and cycling due to promotion of active travel and the ageing of Europe's population.

A timetable should structure the main measures for adoption and implementation. Evaluation of progress towards the 2020 target as well as measures implemented at EU level are also important first steps in preparing the new programme. Following on from the Mid-Term Review of 2015 it is

[27] In line with principles of Sustainable Safety SWOV (2012) based on Tingvall and Haworth (1999), http://bit.ly/2DvAyf7
[28] https://en.wikipedia.org/wiki/Advanced_trauma_life_support http://bit.ly/2ncOoMp
[29] Ireland Road Safety Strategy 2013-2020, https://goo.gl/qopwNe

important to analyse, evaluate and compare road safety development and implementation of the measures in the different EU Member States.

ETSC recommendations

- Prepare and adopt a new strategic Road Safety Programme for the EU including targets, vision, KPIs, measures and a timetable and structure for delivery.
- Develop guidelines establishing a uniform methodology on KPI data collection building on the work of SafetyNet to allow comparisons between countries.

4. EU Role in Road Safety

4.1 Equal access to road safety

Mortality in the EU Member States still differs by a factor of three between the groups of countries with the highest and the lowest risk with Sweden and the UK at fewer than 30 deaths per million inhabitants rising to 99 in Bulgaria and 97 in Romania. The inequalities between EU Member States in terms of road safety illustrate that local, regional and national governments alone are not able to provide for a policy framework that ensures both the highest practicable level of safety and a fair distribution of safety across the European Union[30].

ETSC recommendation

- Adopt measures to reduce the road safety gap between the best and worst performing EU Member States, such as dedicated funds for infrastructure remedial schemes.

4.2 Need to legislate at EU level

Building political commitment and leadership at the highest level are prerequisites for preventing road traffic deaths and injuries. The Treaty on the Functioning of the European Union (2009) states that the EU has the competency to adopt legislation to improve transport safety. Moreover, ETSC would also stress that the European Commission should continue, as it has done in the past, to adopt legislation using other Treaty Articles which can have a secondary aim to improve transport safety. Clearly, road safety is an area for EU legislation and legislation in road safety has an added value for all EU Member States.

4.3 Building EU institutional management of road safety

Road safety policy needs to be supported by effective institutional management in order to achieve long term effects on road safety levels. Clear institutional roles and responsibilities should be set up with strong political leadership from the Commissioner for Transport. As well as legislation, in the following decade the European Commission must continue to fulfil its crucial role in supporting EU Member States and motivating them to act to do their utmost within their power. There needs to be a strong EU role in promoting Good Practice in Road Safety Management and the new information

[30] ETSC (2003) Towards Reduced Road Risk in a Larger Europe, Response to 3rd Road Safety Action Programme, https://goo.gl/BQDDAi

collected with the Key Performance Indicators could help. The new ISO Standard 39001 on Road Safety Management could also be used as a framework[31].

From the side of the European Commission, a high level road safety ambassador could be nominated and a road safety task force created bringing together other Commissioners (including GROW, Health, Education, Environment, Employment) to deliver the new road safety targets. They could report both to the relevant Commissioners and to a more open and transparent version of the European Commission's High Level Group on Road Safety. Road Safety is a cross-cutting issue and can help to deliver other goals, thus there should be more coordinating actions across the DGs at EU level and with other EU institutions. Moreover, DG MOVE's lead road safety unit capacity needs strengthening particularly in any further development of its road safety strategy and targets, coordination, support to EU Member States in building their road safety capacity, monitoring and evaluation functions. ETSC fully supports the creation of an EU Road Safety Agency.

The EU also has an important role to play in encouraging action at the national level. In particular it should press for the adoption of national targets and road safety action plans to improve road safety performance. Analysis shows that road safety performance varies significantly between Member States. Yet, there is no single path to success and – given the various political and legal frameworks – a strategy that was successful in one country could well fail when applied to another without being adapted to national requirements. However, each country should strive for improvement in the next decade whether it is a best performer or not. EU Member States should be spurred into action.

A "one size fits all" approach is not always appropriate. This is why ETSC advocates a "checklist" which can be seen as a "step ladder", which encourages decision makers and practitioners to climb to the highest levels of achievement in road safety by adding step by step to their achievements so far or by revisiting earlier steps[32]. These efforts should be in line with expectations for better cooperation between the EU and Member State level which should in turn lead to better results."

ETSC recommendations

- Appoint a High Level Road Safety Ambassador and create a Road Safety Task Force.
- Introduce more coordinating actions across the DGs at EU level and with other EU institutions and EU Member States, business and civil society to achieve the desired results.
- Strengthen DG MOVE's lead road safety unit capacity particularly in any further development of its road safety strategy and targets, coordination, monitoring and evaluation functions.

[31] ISO 39001 on Road Safety Management, http://bit.ly/2mwge5i
[32] ETSC(2012) 6th PIN Report, Chapter 2 Institutional Setups Fit for Road Safety, https://goo.gl/MSJc35

- Promote good practice in Road Safety Management by, for example, updating the paper on Best Practice in National Road Safety Planning (published in 2013). [33]
- Ask members of the High Level Group on Road Safety and CARE to contribute to an annual report on KPIs.
- Introduce a new European Road Safety Agency which would fulfil a number of the following possible roles:
    - collecting and analysing accident data and exposure data;
    - helping to speed up developments in road safety;
    - provide a catalyst for road safety information and data collection;
    - encourage best practice across the EU;
    - label unsafe roads, road equipment and vehicles;
    - identify unsafe behaviours;
    - communicate results to EU road users.

4.4 Research and development

Sound policies are based on known, effective, science based countermeasures, which in turn are grounded in good research. The EU's research on road safety has continued in the past decade funding a range of topics including vulnerable road users, technology advancements and infrastructure developments. The EU has a global reputation to defend as a centre of excellence and innovation in research and development in areas of road safety. Road safety research should continue to benefit from European funds under the next research framework programme and a list of priority research topics has been released by an EU-funded project Priories for Road Safety Research in Europe (PROS 2012-2014). There is a continuing need to ensure the dissemination of knowledge about successful measures (good practice) and research results among decision makers and practitioners.

A project entitled SafetyCube (2015-2018) was designed to provide a decision support system. EU funds should support the continuation of this project so that it can evolve into a permanent, reliable and up-to-date decision support system for road safety information in Europe.

ETSC recommendations

- Earmark funds for road safety research for the next EU research budget line.
- Continuing support for SafetyCube decision support system initiative.

[33] Discussing this regularly with the High Level Group and organise twinning workshops with less well performing EU Member States.

4.5 EU funds

Both deaths and serious injuries carry a huge cost to society. A recent study estimated the value to society of preventing all reported collisions in the EU to be about 270 billion Euro in 2015.[34] Funding needs to be identified within the new EU budget (known as the Multiannual Financial Framework (MFF) to support investment in new road safety measures and prevent these costs. Financing road safety would support the principles that underpin the EU budget. EU funds should support the implementation of those measures included in the EU's new Road Safety Programme 2020-2030 which have the highest lifesaving potential.

ETSC recommendation

- Identify within the new MFF budget support investment in new road safety measures such as for example regional funds for roads being conditional to improving infrastructure safety.
- Include socioeconomic costs to support investments in order to promote a safe road environment where every road user is included in the Safe System Approach.

4.6 International dimension

Globally, each year, nearly 1.3 million people die as a result of a road traffic collision: 90% of road deaths occur in low- and middle-income countries, which claim less than half the world's registered vehicle fleet. The EU is the biggest humanitarian aid donor worldwide and provides half of all international development aid. The objective of EU development policy is to eradicate poverty in the context of sustainable development and also contribute to the achievement of the U.N. Sustainable Development Goals. Since 2015 these goals have included reducing death and injury on the road.

The new performance targets agreed in November 2017[35] at UN level are aligned with the five pillars of the Global Plan for the Decade of Action for Road Safety 2011-2020: road safety management, safer roads and mobility, safer vehicles, safer road users, and post-crash response. The EU should

[34] About 40 per cent of 270 billion EURO represents a saving of GDP wasted in collisions and their consequences, and the other 60 per cent represents a monetary valuation of the saving in human costs to close associates of those who are killed, and to the injured and their close associates.
Reported costs show wide variations, mainly due to: 1) methodological differences, especially concerning the method applied for the calculation of human costs, 2) differences regarding the cost components that are taken into account, 3) differences in the definitions of a serious and a slight injury, and 4) differences in levels of underreporting. These issues are taken into account in the corrected estimates. In Wijnen, W.,et al.. (2017), Crash cost estimates for European countries, Deliverable 3.2 of the H2020 project SafetyCube, https://goo.gl/Ff6jYo

[35] WHO, Developing Global Performance Targets in Road Safety, http://bit.ly/2f8S9fU

show political leadership at an international level in reaching global targets and developing new goals post 2020.

ETSC recommendations

- As the world's biggest aid donor, ensure that EU road safety policy objectives apply to external programming.
- Within the EU's Neighbourhood Policy continue to include road safety in relations with the EU's close neighbours when it comes to co-operating on transport matters.

4.7 Transport planning and road safety

"Demand management and land-use planning can lower traffic volumes. Facilitating walking and cycling should become an integral part of urban mobility and infrastructure design." [36]

ETSC supports this approach which can also offer benefits in terms of transport safety. Travel demand management measures are aimed at reducing the growth in travel and encouraging a transfer of trips from the car to more sustainable modes of travel. The impact on safety should be a central consideration in the development of demand management measure which can also contribute to achieving road safety targets. This is particularly relevant for cities developing Sustainable Urban Mobility Plans (SUMPs) where EC Guidance recommends including road safety as a horizontal objective.

ETSC recommendations

- The EU should encourage the integration of road safety into land use and transport planning.
- Set up a mechanism to monitor and promote best practice in take up of road safety as a horizontal issue within SUMPs.

[36] European Commission (2011) Transport White Paper, https://goo.gl/My7G0p

5. Priorities for 2020-2030

Priorities for the next decade should be split between the need to continue work on reducing 'traditional' risks such as drink driving, excessive or inappropriate speed, distraction and failure to wear a seat belt and tackling new and rapidly evolving challenges and opportunities of automation and connectivity. Measures should be implemented which reduce the impact of collisions on deaths and serious injuries.

Priorities should be based on **targeting road user groups** which involve large number of deaths and serious injuries and those groups where more action could be taken at EU level.

These include:

- VRUs: pedestrians, cyclists, powered two wheelers
- Young drivers, children and the ageing population

Actions should also be based on **road safety priority measures** which will have the maximum impact. These include fighting:

- speeding;
- drink and drug driving;
- non or incorrect use of restraint systems;
- fitness to drive including fatigue, distraction and legal drugs.

Priorities should also target road types which carry higher risks for their users such as urban and rural roads.

5.1 VRUs: pedestrians, cyclists and PTWs

Pedestrians killed represented 21% of all road deaths in 2014, the figure for cyclists stood at 8%. Powered Two Wheelers (PTWs) represent 17% of the total number of road deaths while accounting for only 2% of the total kilometres driven.[37] However, big disparities exist between countries.[38] The share of deaths of unprotected road users is increasing as car occupants have been the main beneficiaries of improved vehicle safety and other road safety measures. Cyclists and pedestrians are unprotected and are vulnerable in traffic. As active travel is being encouraged for health,

[37] ETSC (2011) 5th Road Safety PIN report, Chapter 2, Unprotected road users left behind in efforts to reduce road deaths, https://goo.gl/zxCfzx
[38] ETSC (2015) PIN Report "Making Walking and Cycling on Europe's Roads Safer", http://goo.gl/FVDAZW

environmental, congestion and other reasons[39], the safety of walking and cycling must be addressed urgently.

Alongside bicycles and PTWs there are new modes of transports emerging. In the last few years the use of pedelecs in Europe has been increasing and is expected to continue growing especially for use on longer journeys and by older riders[40]. The road safety consequences of the potentially higher average speed that pedelecs can achieve are not clear. There are the more powerful Speed Pedelecs (S-Pedelecs) and power-on-demand eBikes (those whose motors can provide assistance regardless of whether the rider is pedalling or not) as well as quadricycles and unicycles, using public roads. Some EU Member States have national legislation which stipulates that S-Pedelec users have a moped licence. The Netherlands is organising special training courses for the elderly using S-Pedelecs, though it is not yet sure if the courses are effective.[41] The benefit of specific training and testing for S-Pedelec use should be further considered especially in EU Member States with licencing legislation.[42]

Priorities for action in the next decade to improve the safety of pedestrians, cyclists and powered two wheelers fall under the three broad headings of infrastructure, vehicle safety and road user behaviour improvements.[43]

Under infrastructure, ETSC is calling for the extension of the instruments of the Infrastructure Safety Directive 2008/96 to main urban and rural roads with VRUs in mind. With new design, safer installations of road equipment and improved maintenance, the number of PTW collisions could be reduced in many member states. Under vehicle safety, much more can be done and priorities should include redesigning car fronts to include cyclist protection (Regulation 2009/78) and introducing vehicle safety technologies which reduce prime risks: Intelligent Speed Assistance (ISA), Automated Emergency Braking (AEB) and alcohol interlocks. Front, side, and rear truck safety redesigns should be mandated to improve cyclist and pedestrian safety.

Within road user behaviour, enforcement should be intensified, especially of speeding, in urban areas where there are high numbers of pedestrians and cyclists. Efforts should also be stepped up in the

[39] Geus, B.d. & Hendriksen, I. (2015). Cycling for Transport, physical activity and health: what about pedelecs? In: Gerike, R. & Parkin, J. (red.), Cycling futures: From research into practice Ashgate Hendriksen, I. & Van Gijlswijk, R. (2010). Fietsen is groen, gezond en voordelig: Onderbouwing van 10 argumenten om te fietsen [Cycle use is green, healty and cheap: Evidence in support of 10 reasons to use bicycles] TNO Kwaliteit van Leven: Preventie en Zorg, Leiden, http://goo.gl/bCK3Vg

[40] Pedelecs are a type of bicycle where the cyclist's pedalling power is supported by a battery-powered electric motor, primarily designed to aid the rider when starting off or when cycling uphill.

[41] SWOV (2017) Pedelecs and speed pedelecs, http://bit.ly/2D4piWa

[42] BFU (2015) e-Bikes im Strassenverkehr Sicherheitsanalyse, http://bit.ly/2D9A1OS, GDV (2014), Pedelec-Naturalistic Cycling Study, https://goo.gl/HZ3SpM

[43] ETSC (2016) The European Union's Role in Promoting the Safety of Cycling, https://goo.gl/HAbaXn

areas of education and training and raising awareness of safe road use both amongst VRUs and motorised road users.[44]

Special action is also needed to improve the safety of moped riders under rider training. ETSC recommends that both the theoretical and practical training as well as practical test should be made mandatory to obtain an AM driving licence.

ETSC recommendations

- Adopt truck safety measures to improve cyclist and pedestrian safety.
- Update existing tests and extend scope of Regulation 2009/78 on pedestrian protection to include cyclist protection.
- Introduce vehicle safety technologies which reduce prime risks: ISA, AEB, seat-belt reminders and alcohol interlocks.
- Intensify co-ordination on enforcement, especially of speeding, in urban areas where there are high numbers of pedestrians and cyclists.
- Extend the application of the instruments of the Road Infrastructure Safety Management (RISM) Directive 2008/96 to cover all motorways, all EU (co-)financed roads, main rural and main urban roads.
- Dedicate funds for cycling, walking and PTW infrastructure under the Connecting Europe Facility (CEF) to support increasing the safety of VRUs.
- Apply minimum safety criteria for supporting VRU infrastructure in an urban context within, for example, EU projects to support Sustainable Urban Mobility Plans at city level.
- Fund, launch and monitor a Safer City Label.
- Include the EuroVelo cycle network as part of the TEN-T and earmark CEF funds for its continued realisation.
- Encourage EU Member States to adopt maximum 30km/h in residential areas and areas where there are high levels of cyclists and pedestrians, or where there could be potential to increase cycling and walking by investing in infrastructure.
- Improve data collection on all collisions, in particular involving vulnerable road users as they are more prone to underreporting. Differentiate in the data different types of electrically assisted cycles.
- Maintain the current definition of pedelecs – with a designed speed of 25km/h and a pedal-assisted maximum continuous output of 250W which is cut when the vehicle reaches its designed speed.
- Consider benefit of specific training and testing for S-Pedelec use.

[44] Ibid.

- Revise standards for testing bicycle helmets to increase the safety standard currently in use to offer high levels of protection.
- Encourage EU Member States to promote helmet wearing among cyclists, without discouraging cycling or other negative side effects such as risk compensation.
- Support the setting up of a European helmet consumer information scheme, similar to the UK one, providing independent consumer information on the safety performances of the most popular helmets sold in the EU.
- Introduce a regular mandatory roadworthiness test for PTWs.
- Make theoretical and practical training as well as a practical test mandatory to obtain an AM driving licence and establish minimum standards for theoretical and practical training for AM.
- Support the setting up of an independent body to test the safety of helmets and other protective equipment such as child restraint systems and gloves for motorcyclists.

5.2 Vehicle safety and automation

Vehicle safety

The European Commission is currently preparing a review of the General Safety Regulation 661/2009 and the Pedestrian Protection Regulation 78/2009, which regulate vehicle safety and in-vehicle technology in the EU. This revision has been postponed a number of times but, once adopted, will start to make an impact during the 2020-2030 period.

These regulations represent the most direct and effective measures the EU has to further reduce road deaths and injuries. Ambitious safety standards benefit the automotive industry by helping European vehicle and technology producers maintain their global lead in safety technology. ETSC's key priorities in the short term include fitting vehicles with priority safety equipment as standard. These include Intelligent Speed Assistance, Alcohol Interlocks (for professional drivers in a first phase), Seat Belt Reminders and Autonomous Emergency Braking. While many vehicles are tested by the Euro NCAP consumer testing programme, cars that only meet the minimum EU legal requirements today would receive zero stars. The EU's collision testing regime also needs to be updated with the inclusion of new tests and adaptation of existing ones.

Following the revision of the Weights and Dimensions Directive 2015/719, trucks will have extra length to redesign the brick shaped front to a more rounded and longer nose. This extra length can be used to improve the collision performance of trucks in collisions with cars and other vulnerable road users such as pedestrians and cyclists.

Automation and C-ITS

How will regulators ensure autonomous systems are tested and approved to common standards, especially in a world where cars are already receiving over-the-air software updates that affect safety performance, such as Tesla's autopilot updates? At present there is an urgent need for a new, harmonised regulatory framework for automated driving at EU level. Setting this up would be an essential precursor to automation. A risk assessment is needed to understand the transition to connected and automated vehicles. Part of this could look at how best to streamline safety advances across the older fleet.

A grave concern, especially during the introduction and transitional stage, is looking at how these vehicles will interact with vulnerable road users. Interaction between current vehicle drivers and VRUs sometimes takes the form of communication through eye contact. Vehicles and their sensors and cameras will have to go above and beyond simple detection and be able to pick up on different forms of communication. High risk scenarios should be identified and ways found to manage all these different possibilities. This is another area that should also be a priority for research and testing.

Along with automation, Cooperative Intelligent Transport Systems (C-ITS) also have the potential to significantly improve road safety[45], as the communication between the vehicle and other vehicles as well as the infrastructure will help the driver to take the right decision and adapt to the traffic situation.

ETSC calls for the C-ITS services that will have the highest safety potential to be prioritised and rapidly deployed. ETSC's priorities include in-vehicle dynamic speed limits, emergency electronic braking light, road works warning, weather conditions, intersection safety and vulnerable road user protection. A clear timeframe for the deployment of C-ITS services is urgently needed.

While distraction might be mitigated in the long term by increased automation, urgent action will be required in the period to 2030 to reduce distracted driving in the existing vehicle fleet. Action could also be taken to legislate for manufacturers and service providers to set a 'car mode' for electronic devices.[46]

[45]C-ITS Platform Phase II (September 2017) Cooperative Intelligent Transport Systems towards Cooperative, Connected and Automated Mobility. Final Report. https://goo.gl/XMbwF8

[46] An example: https://apple.co/2w8nurH

To tackle unlicenced driving/riding[47], the introduction of electronic driving licenses to be used as keys to start a vehicle should be investigated.

In-depth accident investigation

There is a general lack of representative pan-European in-depth collision data to aid the development of safety policy, vehicle regulation and technological advancement. Pan-European in-depth accident investigation data would support the identification of the areas that need immediate attention in developing collision countermeasures and support the evaluation of measures implemented in the EU. Currently only a small number of European countries systematically collect such data.

The EU funded project DaCoTa built a network of 22 in-depth accident investigation teams in 19 countries. The final deliverable was a harmonised in-depth collision investigation protocol and the creation of tools supporting the accident investigation teams on data collection. The database was developed in order to store in-depth accident data in a harmonised way and facilitate the exchange of data collected.

ETSC recommendations

In the context of the revision of the General Safety Regulation (GSR) and Pedestrian Safety Regulation (PSR):

- Upgrade type approval crash tests to be more closely aligned with the requirements of Euro NCAP crash tests.
- Update the existing pedestrian protection tests for new motor vehicles and extend them to protect cyclists and riders/passengers on PTWs.
- Extend the mandatory fitment of advanced seat belt reminders as standard equipment to all seats.
- Fit all new commercial vehicles with assisting Intelligent Speed Assistance (the system should be overridable up to 90km/h for lorries, 100km/h for buses, in line with existing EU legislation on speed limiters, and 130km/h for vans) and all new passenger cars with an overridable Intelligent Speed Assistance system that defaults to being switched on.
- Fit Autonomous Emergency Braking systems (which operate at all speeds and can detect pedestrians, cyclists, mopeds and motorcycles) to all new vehicles, including trucks.

[47] Data from Norway and Sweden show that the numbers of unlicensed riders are high in those involved in collisions. For example, in Sweden, out of 907 severly injured riders during 2013-2016, 22 % didn't have a valid license. Swedish Motorcyclists (2016), Extreme Behaviour – Mainly a Question of Driving without a Licence. In Norway, in 18 % of all collissions resulting in death from 2005-2009 fatal motorcycle accidents , the rider didn't have a valid A license. Norwegian Publish Roads Authority (2011) Special Analysis Fatal Motorcycle Accidents 2005-2009.

- Ensure that retrofitting of vehicles with alcohol interlocks continues to be possible in the future. Legislate for a consistently high level of reliability of alcohol interlock devices. As a first step towards wider use of alcohol interlocks, legislate their use by professional drivers.
- Mandate Event Data Recorders in all new vehicles and require the data to be made available for accident investigation.
- Encourage EU Member States to provide tax incentives for the purchase and use of safe cars (5 star Euro NCAP cars).
- Revise legislation on car CO2 labelling and marketing to require inclusion of Euro NCAP test results when they are available ("Stars on cars!").
- Develop mandatory requirements for safer goods vehicles stipulating improved cabin design and underrun protection, and remove exemptions that exist so as to require the use of side guards to protect other road users in collisions with trucks.
- Encourage the design of new vehicles, or adapting vehicles for persons with reduced mobility.
- Encourage elderly-friendly design of new vehicles as well as evaluating the impact of new technologies on older drivers.

C-ITS and automation:

- Establish a detailed timetable for the introduction of safety enhancing C-ITS services, including a clear set of targets for what the EU needs to achieve between 2020 and 2029 in the context of the gradual EU-wide deployment of C-ITS.
- Prioritise the deployment of C-ITS services with the highest safety potential, those with a proven road safety record, low cost solutions and those with a high cost-benefit ratio.
- Research the cost-effectiveness of retrofitting older vehicles with an on-board unit which could provide basic C-ITS services that enhance road safety.
- Develop a coherent and comprehensive EU regulatory framework for the safe deployment of automated vehicles.
- Revise the EU type approval regime to ensure that automated vehicles comply with all specific obligations and safety considerations of the traffic law in different EU Member States.
- Revise type approval standards to cover all the new safety functions of automated vehicles, to the extent that an automated vehicle will pass a comprehensive equivalent to a 'driving test'.
- Set up an effective EU wide monitoring and evaluation framework covering all aspects of driving.
- Apply findings of planned H2020 research looking at the transitional phase of mixed automated and semi-automated vehicles and interaction with vulnerable road users.
- Apply findings of planned H2020 research into the safety implications of driver dis-engagement and re-engagement during automated driving.

- Ensure that the Driving Licence Directive 2006/126 remains valid for new technologies and autonomous and semi-autonomous driving.
- Investigate possibility of other actors, such as car dealers, being trained by an approved authority to inform customers of new in vehicle safety technologies.

Distraction:

- Require vehicle manufacturers to publish their tests to show compliance with the human-machine interface (HMI) Guidance Statement of Principle on in-vehicle information and infotainment systems.
- Develop a multi-phase, technology-neutral testing protocol for all M and N vehicles for distraction and drowsiness monitoring.

In-Depth Accident Investigation:

- Support EU Member States in collecting harmonised in-depth accident investigation data relating to fatal and serious injury collisions, including single-vehicle collisions.
- Build up on the DaCoTa deliverable related to in-depth accident investigation in creating a pan-European in-depth accident investigation database.

5.3 Enforcement

Increased and well-publicised enforcement targeting the main risks of speeding, drinking and drug driving, distraction and non-use of seat belts on the road forms a fundamental part of achieving the new EU 2030 targets. While education and engineering improve safety in the longer term, effective enforcement leads to a rapid reduction in deaths and injuries.

At EU level the Cross-Border Enforcement Directive 2015/413 covers the main offences causing death and serious injury in the EU: speeding, drink/drug driving, non-use of seat belts and mobile phone use at the wheel.[48] This instrument aims to put in place an important missing link in the enforcement chain thus enabling the information exchange needed to follow through police and enforcement authority efforts to achieve fuller compliance with traffic law and improve road safety. For better implementation of the Directive, improved EU tools are needed to enable cross border cooperation on road traffic offence investigations and mutual recognition of financial penalties specifically for traffic offences.[49]

[48] Directive 413/2015 facilitating cross-border exchange of information on road-safety-related traffic offences, https://goo.gl/WnFrtQ
[49] Grimaldi (2016) Evaluation Study of the CBE Directive 2011/82, https://goo.gl/2xSXH2

ETSC identified a number of barriers which need to be addressed in the upcoming revision, such as updating the camera specifications, a lack of human resources in case of manual follow up and that following up these offences is not seen as a political priority.[50] Mutual assistance procedures need to be adapted so that they can also be used more efficiently for the follow up of the non-payment of traffic fines. More transparency is also needed in supporting the citizen to understand penalty payment as well as rights in relation to clear and understandable information on a possible appeal procedure. There is also the need to tackle mutual recognition of non-financial penalties. As a first step, more use should be made of the RESPER network by EU Member States to check prior licence withdrawal ahead of issuing. Then, the mutual recognition of driving bans or demerit points could also be considered.

As well as addressing the cross-border aspects of enforcement the revision should also prioritise action to improve and align the enforcement of the main offences at a national level. A common approach is needed to allow for equal treatment of connected and automated vehicles across Europe. The EC should encourage EU Member States to run consistent enforcement activities that are well explained and publicised thereby having a long-lasting effect on driver behaviour.[51] The EU should continue to encourage EU Member States to prepare enforcement plans with annual targets for enforcement and compliance in the priority areas. Joint enforcement actions on the key priorities, such as the Europe-wide day without a road death (Project EDWARD) and "Speed Marathon," should also be encouraged as this helps foster political will and helps exchange best practice. EU funds for infrastructure (Cohesion and Connecting Europe Funds) should also be used to support the EU Member States' use of recognised enforcement best practices.

Specific recommendations for the priority areas have also been developed by ETSC.[52] Under speeding, for example, a transparent system is needed for the allocation of revenues generated by fines and for channelling revenues from camera enforcement back into road safety work. All police roadside checks should include a breath test for alcohol and obligatory testing for alcohol and drugs should also be introduced in all fatal and serious collisions and of all those involved. Moreover, each driver, as well as any passengers, stopped for whatever reason should be checked for seat belt wearing and have their licences checked. EU Member States should set up and implement a demerit point system.[53]

ETSC recommendations

[50] ETSC PIN Flash on Enforcement Can Contribute to Safer Roads (2016) P. 42, https://goo.gl/GVwmf5
[51] ETSC (2015), Enforcement in the EU – Vision 2020, http://goo.gl/5NFGNW
[52] ETSC PIN Flash on Enforcement Can Contribute to Safer Roads (2016) P. 42, https://goo.gl/GVwmf5
[53] Van Schagen I., Machata K. (2012), The BestPoint Handbook: Getting the best out of a Demerit Point System. EU funded project, http://goo.gl/XX5u7d

- Create an EU fund to enable enforcement of speeding and drink driving using recognised best practices.[54]
- Evaluate the barriers preventing full implementation of the CBE Directive 2015/413 and adopt countermeasures to overcome them within the revision of the Directive.
- Revise the Directive 2015/413 to strengthen the enforcement chain, including mandatory notification by the State of Offence in accordance with their national legislation.
- Adapt existing EU mutual assistance procedures to deal with cross border road traffic offences.
- Recast the Framework Decision 2005/214 to include civil/administrative offences as this would provide an important final part in the enforcement chain.
- Investigate avenues for EU revision of existing legislation to cover the mutual recognition of non-financial penalties such as driving disqualifications and demerit point systems.
- Continue exchanging best practice via the expert group on enforcement.
- Set up and implement a demerit point system which includes a set of fixed penalties for at least the eight major road safety related offences included in the CBE Directive 2015/413.

5.4 Infrastructure safety

On the TEN-T, motorways, rural roads and urban road networks, EU Member States should be working towards the same high levels of infrastructure safety. The European Commission is due to revise the Infrastructure Safety Directive 2008/96. A study commissioned by the European Commission has found that the impact has been positive for road safety in a number of key areas.[55]

ETSC supports the European Commission's recognition and findings of the 2014 TML study that much more benefit could be achieved by extending the principles of Directive 2008/96 to other parts of the road network, where many more road users are killed than on the TEN-T.[56] Almost half of EU countries already apply the rules on some other parts of their national road networks.[57] Only four countries[58] do not apply any of the procedures to their other roads.

There is, however, a large variance with respect to the use of the different procedures (most countries did not extend the use of all procedures), obligation (mandatory/discretionary) and the type and

[54] Several EU Member States have already successfully used EU funds to introduce safety camera networks.
[55] TML Study (2014) Ex Post Evaluation Study of Road Infrastructure Safety Management, https://goo.gl/DsKoUS
[56] Ibid.
[57] Austria, Cyprus, France, Finland, Germany, Hungary, Ireland, Italy (from 2016), Latvia, Lithuania, The Netherlands, Romania, Slovenia and the UK implement the Directive also on other roads, mainly motorways and some main rural roads ("national roads") in ETSC (2015) Ranking EU Progress on Improving Motorway Safety (PIN Flash 28). https://goo.gl/ioJmFJ
[58] Croatia, Sweden, Slovenia, Slovakia.

definition of the roads to which the use of the procedures was extended (all motorways, all main roads, roads with a certain volume, all "strategic roads"). Under the Infrastructure Safety Objective of the EC Policy Orientations 2011-2020, the EC recommended to EU Member States to extend these requirements to the secondary road network (i.e. beyond the main motorways). [59] This has become even more of a priority given the new objective to reduce serious injuries. Serious road traffic injuries occur on all kinds of road, but in comparison with deaths a larger proportion of them occur in urban areas and involve vulnerable road users.[60]

Functional road categorisation is essential as a reference in determining an adequate safe road design. In accordance with the Dutch Sustainable Safety principles, the first step in deciding how to maximise the level of different road user safety on the road network should be the categorisation of the roads according to the traffic function they must fulfil such as being a through, access or distributor road. [61]

Traffic calming involves efforts to reduce motorised vehicle and bicycle speeds in residential and urban core zones so as to facilitate sharing road space with cyclists and pedestrians.[62] ETSC calls for the development of EU guidelines on traffic calming for use in EU Member States, which would also benefit road users in urban areas, especially VRUs.

Infrastructure safety needs budgets and programmes proportionate to road collision costs.[63] In the area of EU funding, the TEN-T Guidelines need to be strengthened to prioritise upgrading road infrastructure to meet safety requirements. Targeting travel on existing road networks which have high safety standards will help reach safety targets. So, for example, Sweden is investing to achieve 75% of travel on 3-star roads or better by 2020 and near 100% by 2025. At present this is focused on car passenger traffic, in the future these evaluations should be adapted to look at use by other road users as well.

Regional development funds should consider infrastructure safety, capacity development for road safety stakeholders and demonstration projects. These should be inserted both in ex ante and ex post

[59] European Commission (2010), EC Policy Orientations on Road Safety 2011-2020, https://goo.gl/ndXFPV
[60] European Commission (2013), Staff Working Document On the implementation of objective 6 of the European Commission's policy orientations on road safety 2011-2020 – First milestone towards an injury strategy. https://goo.gl/dtWB3a
[61] SWOV (2006), Advancing Sustainable Safety - National Road Safety Outlook for 2005-2020, http://goo.gl/L5gMGC
[62] OECD (2013) Cycling, Health and Safety. https://goo.gl/tEb4Uf
[63] Ministerial Conference on Road Safety 29.03.2017. Valletta, Malta, Rapporteurs' Reports from the Stakeholders' Conference 28 March 2017, https://goo.gl/g5LC1U

evaluation of projects to benefit from these funds. Moreover, the EU funding contribution percentage should be at the permitted maximum when road safety benefits are clearly included.

ETSC recommendations

- Create an EU fund to support priority measures such as for cities to introduce 30 km/h zones (particularly in residential areas and where there are a high number of VRUs) and to invest in high risk roads which carry a high percentage of traffic.

Within the context of the review of the Road Infrastructure Safety Management Directive (RISM) 2008/96:

- Extend the application of the instruments of the RISM Directive 2008/96 to cover all motorways, all EU (co-)financed roads, main rural and main urban roads.
- Extend the rules of the Infrastructure Safety Management Directive 2008/96 to tunnels covered by the Tunnel Directive 2004/54 while upholding the effects of the Tunnel Directive.
- Introduce a Network Safety Management assessment of the road network and review findings regularly for action.
- Set a target of upgrading roads to 3-star or better on all roads and 4-star or better on roads with high traffic volume.
- Support common EU curricula for auditors and inspectors, including specific training on the needs of VRUs: pedestrians, cyclists, PTWs the elderly and road users with reduced mobility.
- Mandate periodic training of road safety auditors to allow exchange of international best practice and rapid transfer of knowledge.
- Set up common EU minimum performance requirements for providing and maintaining road markings, safety barriers, obstacle-free roadsides and adapted intersections including also special requirements for functioning of ADAS such as Lane Departure Warning and for future automated and semi- automated vehicles.
- Set minimum road infrastructure safety requirements and draw up supporting technical guidelines concerning the harmonised management of high-risk sites by means of low cost measures. Systematic and periodic road safety inspections should be undertaken for the detection of high- risk sites.
- Set up guidelines with precise technical characteristics for the provision and maintenance of "forgiving roadsides" building on the experience of other EU countries and promote them amongst auditors and transport planners.
- Set EU guidelines implementing the concept of 'self-explaining' and 'self-enforcing' roads, matching speed limits to the road characteristics.
- Set EU guidelines for promoting best practice in traffic calming measures, based upon physical measures such as roundabouts, road narrowing, chicanes, road humps and techniques of space-sharing, to support area-wide urban safety management, in particular when 30 km/h (or 20 mph) zones are introduced and where there are high levels of VRUs.

- Set EU technical guidelines to support the development of a safe road environment for PTWs including in transport planning and maintenance.

5.5 Seriously injured and post-collision care

Since 2010 the number of people seriously injured based on national definitions of serious injury on EU roads was reduced by just 0.5%, compared to a 19% decrease in the number of deaths in the same group of countries.[64] In 2014, around 135,000 people were seriously injured in the EU based on the common EU definition MAIS3+ according to estimates by the European Commission. There is strong political support to take action on serious injury.

The European Commission presented its 'First Milestone towards a Serious Injury Strategy' in 2013.[65] ETSC calls upon the Commission to realise specific actions to reduce serious injury in particular to support the new 2020-2030 target set by transport ministers in the Valletta declaration on improving road safety.[66]

Vulnerable road users, for example pedestrians, cyclists, motorcyclists or users in certain age groups, notably the elderly, are especially affected by serious road injuries. Serious road traffic injuries occur on all kinds of road, but in comparison with deaths a larger proportion of them occur in urban areas and involve vulnerable road users. On rural roads, these injuries are more severe and thus more likely to be fatal.

Priority measures for reducing serious injuries include an EU target, which is monitored and regularly reviewed. EU Member States need continued support from the European Commission in collecting MAIS3+ data. The EC can do this by facilitating the exchanging of best practice in recording procedures and supporting the training of data-handling professionals. Infrastructure can also play a key role in reducing the severity of injury when collisions occur. Recommendations include drafting guidelines for promoting best practice in traffic calming measures and supporting area-wide urban safety management, in particular when 30km/h zones are introduced.

One area for action is that of post-collision care. All European Member States should offer equally high standards of rescue, hospital care and long-term rehabilitation following a road collision.

[64] It is not yet possible to compare the number of seriously injured between Member States because of the different national definitions of serious injury, together with differing levels of underreporting. It is also too early to use data based on MAIS 3+ for comparing countries performance over time. The comparison therefore takes as a starting point the changes in the numbers of seriously injured (national definition) since 2010.

[65] European Commission (2013) Staff Working Document: On the Implementation of Objective 6 of the European Commission's Policy Orientations on Road Safety 2011-2020 – First Milestone Towards an Injury Strategy, https://goo.gl/gCw1zk

[66] Valletta Declaration on Improving Road Safety (2017), https://goo.gl/JsX7gS

Measures include involving health professionals in developing good practices and guidelines on essential trauma care and emergency services. More should also be done on tertiary safety enabling swift access to victims in case of a crash by providing information to rescue services on car construction.

ETSC recommendations

- Adopt a new joint EU strategy to tackle serious injuries involving all Directorate Generals (DG) in particular DG Health and Food Safety.
- Enshrine the target in the new strategy of a 50% reduction between 2020 and 2030 in the number of people seriously injured.
- Allocate the resources necessary for the implementation of the strategy and encourage EU Member States to do the same.
- Prioritise short-term measures that can be implemented with existing knowledge, e.g. measures to improve speed limit compliance will reduce injury severity and have an immediate effect.
- Support EU Member states in collecting numbers of seriously injured according to the MAIS 3+ definition and include numbers of seriously injured in the EU impact assessment of countermeasures.
- Encourage Member states to develop effective emergency notification and collaboration between dispatch centres, fast transport of qualified medical and fire/rescue staff, liaison between services on scene, treatment and stabilisation of the casualty, and prompt rescue and removal to an appropriate health care facility.
- Further develop tools to improve real-time interaction between emergency personnel on the spot and specialists in the trauma centre.
- Extend the scope of Directive 2003/59 to professional driver training of drivers of emergency services.
- Promote the widely accepted standard of a 'casualty centred' methodology, which ensures a unified approach that promotes optimum casualty care coupled with specific steps to achieve a rapid but safe rescue.
- Encourage vehicle manufacturers to provide detailed information on the construction of all vehicles that are being produced to rescue services in order to facilitate a possible extrication of entrapped vehicle occupants in case of a collision.
- Estimate the feasibility of introducing a regulation for the provision of standardised rescue sheets.

- Consider the best options to centralise and maintain a database (of rescue sheets) and have information available on the vehicle (for instance, a standardised ID tag with a link to the database). [67]

5.6 Fitness to drive

This section on fitness to drive will cover impairment related to alcohol, illegal drugs, medicines, fatigue and distraction due, for example, to smart phone use.

While drink driving is relatively infrequent compared to other traffic offences, it is highly dangerous. It is estimated that up to 2% of kilometres travelled in the EU are driven with an illegal Blood Alcohol Concentration (BAC) but around 25% of all road deaths in the EU are alcohol related.[68] Efforts to tackle drink driving are paying off, through reducing the legally permitted blood alcohol concentration, enforcement efforts combined with awareness campaigns and the use of alcohol interlock devices. However, drink driving remains the second biggest contributory factor to road deaths.[69]

The range of psychoactive substances available for illicit use is widening in the EU and this is further proven by the increased prevalence of illicit drugs in drivers killed in traffic collisions. The DRUID study estimated that illicit and medicinal psychoactive drugs were found in 15.2% and 15.6% respectively of road deaths.[70]

Research shows that driver fatigue is a significant factor in approximately 20% of commercial road transport collisions.[71] At present people cannot be 'tested' against fatigue (as opposed to breath tests tp detect drink driving, for example). Fatigue affects drivers when they start to become tired as they cannot concentrate properly on driving and cannot respond as quickly and safely as they should. Amongst professional drivers of trucks and buses, tachographs monitor driving and resting hours, but this has its limits which is why fatigue management by both employer and driver is so crucial.[72]

Other professional drivers such as van drivers or taxi drivers are not covered by tachograph legislation. Fatigue is also particularly problematic for young road users, especially as adolescents have a biological need for more sleep. Young people will be unfamiliar with the impact that fatigue has on their driving quality and hazard perception skills. Given the higher levels of concentration needed for

[67] Euro NCAP (2016) 2025 Roadmap p. 11, https://goo.gl/vZAipP
[68] ETSC (2014), PIN Flash Report 27, Ranking EU Progress on Car Occupant Safety, https://goo.gl/viksTC
[69] Ibid.
[70] European Commission (2011), DRUID Deliverable 2.2.5, Prevalence of alcohol and other psychoactive substances in injured and killed drivers, pp. 164-166, https://goo.gl/j52ryq
[71] ETSC (2001) The Role of Driver Fatigue in Commercial Road Transport Crashes, https://goo.gl/ETZaGV
[72] ETSC (2011) PRAISE Report Tackling Fatigue: EU Social Rules and Heavy Goods Vehicle Drivers, https://goo.gl/ZCSr8y

driving, fatigue can set in faster for young drivers and riders, even though they may not be travelling long distances. Restrictions on night-time driving of young people could be introduced (with consideration given to enforcement requirements and alternative transportation in rural areas) under Graduated Driver Licensing, (see section on novice drivers).[73]

Sleepiness is also a common symptom associated with several sleep disorders including obstructive sleep apnoea syndrome (OSAS) and narcolepsy. Awareness raising of what OSAS is and how to treat it amongst the driving population is recommended. Treatment of OSAS is relatively cheap and highly effective in reducing sleepiness, and therefore can have a direct effect on reducing sleep related road traffic collisions.

Another factor influencing fitness to drive is distraction, which can take many forms. Driving whilst using a mobile phone and other electronic devices significantly impairs driving ability.[74] Data on how many collisions involve distraction is poor but experts estimate that it plays a role in 10-30% of them.[75]

Understanding the impact of medical fitness is important as the driving population ages. A recent study on driver training, testing and medical fitness commissioned by the EC[76] (Helman et al., 2016) found that all countries examined (25 of the EU 28) have age based re-testing, including eye tests, and most require medical tests for re-licensing. The legal duty to report health problems, the precise role of medical general practitioners, and the age at which retesting was required were more variable.

The evidence base on requirements on medical fitness to drive is substantial. It suggests that age based screening is not effective, and may even have a negative safety (as well as mobility) impact.

The frequency with which older drivers need to renew their licence is variable, and along with age limits is not based on current best practice regarding crash risk or incidence of relevant disease. Best practice evidence shows that a person's ability to drive should be based on functional deficit, rather than age or medical condition.

ETSC recommendations

- Propose a Directive on drink driving, setting a zero-tolerance level for all drivers.
- Mandate alcohol interlocks for repeat offenders and professional drivers.

[73] ETSC (2017) Reducing Casualties Involving Young Riders and Drivers in Europe, https://goo.gl/yNGi2W
[74] ETSC (2010) PRAISE Report Tackling In-Vehicle Distraction. https://goo.gl/hmpkH8
[75] TRL, TNO and Rapp-Trans for the European Commission (2015), Study on good practices for reducing road safety risks caused by road user distractions, https://goo.gl/KwCG5D
[76] Helman et al., (2016) Study on Driver Training, Testing and Medical Fitness, https://goo.gl/QP3RR2

- Introduce an EU zero tolerance system for illicit psychoactive drugs using the lowest limit of quantification that takes account of passive or accidental exposure.
- Work on an EU-wide monitoring system to determine the prevalence of drink driving in the EU and the number of drink driving deaths and injuries. This should include testing for alcohol of at least all road users involved in fatal collisions (if not fatal and serious collisions).
- Adopt common standards for roadside drug driving enforcement and ensure that police forces are properly trained in when and how to perform drug screening, field impairment tests and use of roadside screening devices.
- Apply the use of the classification and labelling of medicines that affect driving ability[77] and support awareness information campaigns of medical professionals.
- Recommend that Member States make wider use of conditional licences (Codes 61 to 69 of Directive 2006/126/EC) where possible.
- Encourage Member States to stress the role of doctors in influencing how long and under what circumstances a person who is medically unfit continues driving.
- Support awareness information campaigns on the risks of distracted driving.
- Ensure information is given to EU employers and citizens about national rules covering the use of mobile phones in the different EU Member States.
- Concerning road traffic death investigation, develop methods to enable better assessment of the role of distraction in road traffic deaths, including a review of existing reporting systems. Systems for recoding data of road deaths and use of nomadic device use should be improved, including type of device and the context in which it was being used when the collision occurred.
- To tackle fatigue amongst professional drivers (including van drivers), tackle tachograph corruption and support harmonised approaches of tachograph enforcement and minimum and maximum penalties for breaches of working time legislation.
- Make safe and secure rest facilities in infrastructure a long term commitment and an ongoing work programme priority, featuring a set of annual objectives as well as providing funding.
- Monitor involvement of Sleep Apnoea Syndrome as a factor in deaths and serious injuries.
- Encourage EU Member States to run awareness campaigns on identifying Sleep Apnoea Syndrome and its treatment.
- Promote evidence-based education programs which have shown to be effective and are accepted by GPs across all EU Member States in assessing a person's fitness to drive.
- Encourage EU Member States to stress the role of doctors in influencing how long and under what circumstances an older person continues driving and assessing a person's fitness to

[77] EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p31, https://goo.gl/6nbXQN

drive. This influence can range from direct advice to the patient, to discussions with family members about an older person's challenges with driving. The development and implementation of consistent guidelines by Member States for all GPs is strongly recommended based on international best practice.

5.7 Safe mobility for the young

5.7.1 Improving child safety (aged 0-14)[78]

In 2016 alone, 600 children died on Europe's roads. Half (51%) were vehicle occupants, 31% were pedestrians and 11% cyclists.[79] The annual number of children killed or seriously injured in road traffic collisions has decreased significantly in recent decades.[80] Yet, mortality due to road collisions is a major cause of death in this age group. When children do use the roads, they are extremely vulnerable because of their lack of experience and reduced visibility. They are also often unaware of the risks they take unintentionally, and more easily become innocent victims in collisions.

It is therefore essential that the road system is adapted to account for their limited capabilities and for their limited access to alternatives.

Child restraint legislation is governed at EU level and is crucial in protecting children in vehicles. However, installation mistakes can drastically reduce the effectiveness of a child restraint system (CRS). Surveys from different EU Member States show mistakes are common. For example, a behavioural survey conducted in Belgium in 2014 showed that 65% of children travelling in vehicles did not have an appropriate child restraint system for their height or weight, they were not fastened correctly or the child restraint system was not fastened at all.

Many EU Member States provide general road safety education in schools from an early age, with some offering education more targeted at potential young drivers and riders. Starting with more focussed education when children move to secondary school makes sense as usually the journeys there are longer and this age group will start to face more complex traffic situations. Evaluation and setting criteria for quality assurance of education projects is crucial. A specific set of guidelines for

[78] In ETSC's Child Safety PIN Flash (ETSC 2018 In preparation) ETSC considers children to be those aged 0 to 14 (inclusive). While this definition is somewhat arbitrary, 15 is in many EU countries the age at which one finishes compulsory school attendance. Up to 14, the ways children travel are often dictated by the choice of parents, environment and policies in general. Moreover, in some countries, 15 is the age at which one is considered to be responsible for one's actions (legal responsibility). In some figures road safety data for adolescents aged 15-17 are presented for comparison reasons.
[79] ETSC (2018) Child Safety PIN Flash, in preparation.
[80] Ibid.

this is needed for education, similar to the EC funded CAST project (Campaigns and Awareness-Raising Strategies in Traffic Education).

ETSC recommendations

- Adopt a separate target for reducing deaths amongst children and develop accompanying measures.
- Under Directive 2005/39, make rear-facing child seats mandatory for as long as possible, preferably until the child is 4 years old.
- Increase availability and affordability of child restraints, by encouraging Member States to include them in the category of essential products (and therefore eligible for lower rates of VAT) as EU Directive 77/388 allows.
- Launch a special effort to increase the correct use of child safety restraints in all EU countries and provide consumer information about the i-Size standard.
- Facilitate and support the exchange of best practice in terms of the use and enforcement of child restraint systems across Member States.
- Encourage all EU Member States to deliver road safety education that starts at school and which is part of a continuum of lifelong learning.
- Encourage EU Member States to implement 30 km/h zones together with traffic calming measures to reduce vehicle speeds in residential areas, on the way to schools and around bus stops.
- Develop EU guidelines for traffic mobility education for 12-18 year olds.
- Develop EU evaluation tools to design, implement and evaluate traffic and mobility education.

5.7.2 Novice road users (15-25)

Young drivers and riders 15-25 are more likely to be killed on Europe's roads than their older counterparts[81]. Road collisions remain one of the highest external causes of death for young people. The risks are especially high for young males and for young riders.

This high collision risk is caused by a combination of factors. Biological and social changes between the ages of 15-25 affect the risk perception of young people and lead to an increase in social activity and associated pressure from peers. A lack of experience on the road means that young people are worse at anticipating and reacting to hazards. They are also less aware of how best to drive and ride in particular road conditions and situations. A range of impairments and distractions affect young people. This is linked to the increased social activity they experience during the ages of 15-25, which

[81] ETSC (2017) Reducing Casualties Involving Young Drivers and Riders in Europe, https://goo.gl/GghTHM

includes a greater exposure to alcohol and drugs, the influence of peer-age passengers, the effects of fatigue and the use of mobile phones.

Young people tend to drive smaller and older vehicles as they are cheaper and more practical. These cars often have a lower crashworthiness and lack the safety technologies featured in newer, larger cars. The use of seat belts and protective clothing is also poor amongst young people. Although for front passengers, according to self-declared behaviour, young people do wear their seat belts[82].

ETSC recommendations

- Encourage Member States to apply good practices in enforcing speeding, drink-driving, the non-use of seat belts and helmets, the use of mobile phone, unlicensed driving/riding.
- Encourage EU Member States to ensure that their demerit point systems for novice drivers are punitive (e.g. loss of licence) or rehabilitative (e.g. mandatory traffic risk awareness training).
- Encourage young people to use safer vehicles and utilise assistive technologies. Further explore the link between telematics-based insurance and safe driving.

5.8 Education and training

Part of the solution for reducing deaths and serious injury of novice drivers and young road users is training and education. The EU should improve the quality of the licensing and training systems, with a focus on young novice drivers. Training teaches the skills required to both manoeuvre the vehicle and use the roads safely. It includes both formal training (under the supervision of a qualified driving instructor) and informal training (practice with family and friends). Education focuses on the attitudes of young people to safe behaviour on the road and how best to develop an awareness of the risks they face and how to minimise them. Education includes knowledge transfer, the training of skills, and influencing opinion in all manner of ways, e.g. by driver training, school education, or information campaigns.

Within the European Driving Licence Directive ETSC would prioritise hazard perception, demonstration of defensive or social driving (via self-assessment questionnaires or using situational awareness questioning during the test) and updating for new in-vehicle technologies and automated vehicles. Post licence training for professional driver training can also be an important tool in improving work related road safety.

[82] ESRA European Survey of Road Users' Safety Attitudes (2016) Seat Belt and Child Restraint Systems, http://bit.ly/2DdnyOe

Professional driver training is regulated at EU level by Directive 2003/59 and is in the final stages of review. ETSC welcomed the update of the topics covered in the syllabus including driver awareness of what it is like to be a cyclist interacting with large vehicles and the dangers of distracted driving. ETSC regrets that exemptions from the Directive were extended. ETSC has been calling for the scope to be extended to cover van and emergency vehicle drivers.

Many EU Member States provide general road safety education in schools from an early age, with some offering education more targeted at potential young drivers and riders. Starting with more focussed education when children move to secondary school makes sense as usually the journeys there are longer and this age group will start to face more complex traffic situations.

ETSC recommendations

Within the context of a revision of EU Directive 2006/126 on driving licences:

- Introduce hazard perception training, expand formal training to cover driving and riding style as well as skills and encourage more accompanied driving to help gain experience.
- Develop minimum standards for driver training and traffic safety education with gradual alignment in the form, content and outcomes of driving courses across the EU.
- Ensure testing allows examiners to ascertain a safe driving style by including aspects such as independent driving.
- Adopt graduated licensing systems that encourage young people to gain more experience while limiting certain high-risk activities such as driving at night and with passengers.
- Lower the BAC limit for all young drivers including novice drivers.
- Make theoretical and practical training as well as a practical test mandatory for obtaining a driving licence for moped driving (AM).

5.9 Tapping the potential for reducing work-related road deaths and injuries

5.9.1 EU leadership on work related road safety

Up to 40% of all road deaths in the EU are work-related, even though the exact number is unknown.[83] Gaining a full and detailed picture of work-related road collisions in the EU is very challenging due to differing definitions, the variety of data sources, a lack of linkages between data

[83] If commuting and third party deaths are included. ETSC (2017), PIN Flash 33, Tapping the Potential for reducing work-related road deaths and serious injuries, https://goo.gl/A2KMQ7

sources, and underreporting. Regular data collection is essential to help decision makers identify areas for priority actions and to evaluate the results of policy interventions.

The main causes of road traffic collisions are risks that typically need to be managed in the Work Related Road Safety (WRRS) context and include speed, drink and drug driving and, especially whilst driving for work, higher levels of fatigue and distraction. EU measures to tackle these risks have mostly already been covered in other sections of this report.

The most important piece of legislation in the EU addressing Occupational Safety and Health (OSH) is Directive 89/391 on OSH. The Directive lays down general principles concerning prevention, assessment and elimination of risks and accident factors, protection of safety and health, access to information, consultation and balanced participation and training of workers and their representatives. In the majority of EU countries employers can be held legally responsible if their employees are involved in a work-related road collision. Even though WRRS is not specifically mentioned in the Directive, it is a part of all the work-related risks that employees face and create for others. Therefore, it ought to be covered in employee risk assessments, but in practice this might not always be the case.

The principles of the Directive 89/391 on work-related risk assessment can be implemented more efficiently if a government provides guidance focused on the employer's obligations to manage risks associated with travelling for work.[84]

Measures in WRRS should also be seen within the context of mobility planning where risk assessment may reduce the need to undertake the journey in the first place or improve efficiency by organising trips in a different manner which would also have the potential to improve safety.

ETSC recommendations

- Adopt a standardised EU definition of work-related road collisions within the framework of the road safety field that covers road deaths and serious injuries among professional road users, commuters, third parties and workers on the roads and covers all road user groups; allow for a breakdown of professional road users, commuters, road workers and third party deaths and serious injuries.

[84] Ibid.
11 out of 26 PIN countries encourage employers to take action on work-related road safety through different initiatives including the promotion and dissemination of guidance, leaflets, prevention campaigns and partnerships between the government, employers and employees, https://goo.gl/A2KMQ7

- Lead by example and adopt work-related road safety management programmes for the EU institutions and their vehicle fleets and include vehicle safety in public procurement.[85]

Within the context of the revision of Regulation 561/2006/EC concerning Driving Times and Rest Periods:

- Work towards consistent levels of enforcement of working time across the EU.
- Support efforts to tackle fraudulent use of tachographs under Regulation 2014/165 including equipping enforcement officers with knowledge and equipment and improving use of data sharing arrangements between agencies within Member States.

Within the context of the revision of Regulation 2009/661/EC concerning Type-Approval Requirements for the General Safety of Motor Vehicles:

- Prioritise the introduction and further extension of in-vehicle safety technologies linked to the key risk factors, which include Intelligent Speed Assistance, Alcohol Interlocks, Advanced Seat Belt Reminders on all seats and Autonomous Emergency Braking. Mandate Event Data Recorders in all new vehicles.

5.9.2 Vans and HGVs

In 2011, 4000 people lost their lives in collisions involving light goods vehicles (LGVs) – goods vehicles with a maximum permitted weight below 3.5t.[86] This group deserves a special focus in the next decade. Van drivers travelling for work are often under pressure to meet tight deadlines and this means that they are a group that are often likely to speed.[87] At present light good vehicles are not covered by several pieces of EU legislation, particularly related to driving and rest times. Urban freight logistics have shifted towards vans.[88] Van use in Europe will continue to rise due to, for instance, the increased demand for home deliveries.[89] The EU should ensure a level playing field for all commercially used vehicles across Member States, as mandating different safety technologies for different categories could increase those adverse effects on road safety.[90] During the revision

[85] The new ISO Standard 39001 on Road Safety Management could also be used as a framework.
[86] ETSC (2013) 7th Road Safety PIN Report. Chapter 2: Towards safer transport of goods and passengers in Europe, page 26, https://goo.gl/6JJ2Lh
[87] ETSC (2014) PRAISE Report Managing the Road Risk of Van Fleets, page 33, https://goo.gl/bGdAXd
[88] ETSC (2013) 7th Road Safety PIN Report. Chapter 2: Towards safer transport of goods and passengers in Europe, page 26. https://goo.gl/6JJ2Lh
[89] For example, LGV traffic in the UK has increased by approximately 40% during the 2001-2010 period. In: DfT, THINK!
[90] ETSC (2017) Position Paper Revision of General Safety Regulation 2009/661, https://goo.gl/8KDLKj

of the Driving Licence Directive 2006/126 the current requirements for larger professional vehicle classes, including the need for professional driver training, should also be extended to vans.[91]

In 2011 4,254 people lost their lives in collisions involving heavy goods vehicles (HGVs).[92] The largest share of those killed in collisions with them are not the occupants of those vehicles, but other road users. The relatively large mass of an HGV translates into higher momentum before a collision, which increases the severity for other road users. Meanwhile, the collision dynamics and the generally raised cab afford greater protection for HGV occupants.

Given their road safety implications and key role in goods transport across Europe, HGVs are already targeted by a range of EU legislation, including vehicle design, weights and dimensions and fitness to drive for professional drivers, as mentioned above.

The large differences between the percentage of people losing their life as an occupant of an HGV and as other types of road user in these collisions provide an interesting insight into the externalities associated with the transport of goods by road. Any future developments, both in policies and vehicle technologies, should take these into account.

ETSC recommendations

- Revise the Driving Licence Directive 2006/126 to mandate provisions set out for Group 2 drivers to apply to drivers of Category B vehicles using their driving licence for professional purposes: taxis, drivers of vans (N1 vehicles).
- Extend the current legislative framework for professional driver training to van drivers.

In the context of the revision of the General Safety Regulation (GSR):

- Fit all new commercial vehicles, including vans, with assisting Intelligent Speed Assistance systems. The system should be overridable up to 90km/h for lorries, 100km/h for buses, in line with existing EU legislation on speed limiters, and 130km/h for vans.

[91] ETSC (2014) PRAISE Report. Managing the Road Risk of Van Fleets, https://goo.gl/bGdAXd
[92] ETSC (2013) 7th Road Safety PIN Report. Chapter 2: Towards safer transport of goods and passengers in Europe, page 26, https://goo.gl/6JJ2Lh

6. Annex – Summary of KPIs

Final outcome indicators

- Long term target of Vision Zero for 2050 set in the Transport White Paper
- A renewal of the target to reduce road deaths to 2030
- Endorsement of the target to reduce serious injuries to 2030
- A new target on the safety of children to 2030

Results based targets (intermediate outcome indicators)

The suggested KPIs:

- % of motor vehicles (car, van, HGV, Bus) travelling within the speed limit by road type (urban, rural non-motorway, motorway).
- % reduction in the number of alcohol related road deaths.[93]
- % of seat belt use in front and rear seats by type of motor vehicle occupant.
- % of occupants killed without wearing a seat belt/restraint system.
- % of children correctly fitted in the appropriate child restraint system.
- % of passenger car drivers using a handheld cell phone (roadside survey).
- % of helmet use by motorcycle, moped and bicycle riders.
- % of rural roads with 4 star EuroRAP.
- % of roads meeting the standards of the infrastructure safety management directive.
- % of roads with speed limits set at appropriate levels (e.g. 30 km/h). [94]
- % of 1-2-3-4-5 star Euro NCAP cars among new passenger cars.
- Age of the vehicle fleet.
- Number of checks performed by the police and safety cameras (where applicable) in the priority areas of speeding, drink driving, illegal use of mobile devices, seat belt, child restraint and helmet use.
- Exposure data for all road users (pedestrians, cyclists, PTWs, cars, vans, HGVs) on all types of roads (urban, rural non-motorway, motorway).
- % of work-related road collisions within the framework of the road safety field that covers road deaths and serious injuries among professional road users, commuters, third parties and workers on the roads and covers all road user groups; allowing for a breakdown of professional road users, commuters, road workers and third party deaths and serious injuries.

[93] Using the SafetyNet recommended definition of drink driving: any death occurring as a result of road accident in which any active participant was found with blood alcohol level above the legal limit.
[94] In line with the principles of sustainable safety SWOV (2012) based on Tingvall and Haworth 1999, http://bit.ly/2DvAyf7

Indicators to monitor post collision response

- Proportion of patients treated by ambulance staff within 15 minutes.
- Proportion of patients receiving Advanced Trauma Life Support (ATLS Protocol[95]).
  (This could be a one-time check, by EU Member States, to see if, and what proportion of, hospitals practice ATLS.)

[95] https://en.wikipedia.org/wiki/Advanced_trauma_life_support http://bit.ly/2ncOoMp

FOR FURTHER INFORMATION

Ellen Townsend, Policy Director
ellen.townsend@etsc.eu
+32 2 230 41 06

European Transport Safety Council
20 Avenue des Celtes
B-1040 Brussels

Tel: +32 2 230 4106

information@etsc.eu

www.etsc.eu

Follow us on twitter: @etsc_eu

The European Transport Safety Council (ETSC) is a Brussels-based independent non-profit making organisation dedicated to reducing the numbers of deaths and injuries in transport in Europe