### KEY MESSAGES

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<tbody>
<tr>
<td>a.</td>
<td>ACEA is a strong supporter of the EU objective of reducing road casualties and thus welcomes the initiative to revise safety regulations.</td>
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<tr>
<td>b.</td>
<td>An integrated approach needs to be followed, examining the benefits that can be achieved by combining new technology with better road infrastructure and by promoting safer driver behaviour.</td>
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<td>c.</td>
<td>Active safety measures can reduce the number and consequences of accidents.</td>
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<td>d.</td>
<td>Passive safety measures will have fewer benefits compared with active safety and may have negative impacts, such as increasing CO2 emissions.</td>
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<td>e.</td>
<td>Safety will also be further improved by the introduction of autonomous driving features, but the successful rollout of this technology will require a coherent approach across all services within the European Commission as well as the member states.</td>
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### KEY RECOMMENDATIONS

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<tbody>
<tr>
<td>a.</td>
<td>Focus on active safety measures.</td>
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<td>Detailed cost/benefit analysis and impact assessment is needed for all considered measures, separated into different vehicle categories.</td>
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<td>c.</td>
<td>When considering measures with impact on the same type of accidents, for example collisions with pedestrians, the synergies have to be factored in to avoid solving the same problem twice.</td>
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<td>d.</td>
<td>The measures have to take into account the different usage and characteristics of vehicles (passenger cars, light commercial vehicles, heavy trucks, etc.).</td>
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<td>All measures have to be harmonised with the provisions of UN-ECE; specific EU regulations have to be avoided.</td>
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INTRODUCTION

In spite of a three-fold increase in traffic, road safety in Europe has improved significantly the last 30 years. Maintaining this trend is important for an industry that prides itself on designing, producing and selling safe, comfortable and efficient vehicles in probably one of the most demanding markets in the world. The industry has a number of priorities in the field of safety that it wishes to see addressed.

Regulation (EC) 661/2009 of the European Parliament and Council, amended by Commission Regulations (EU) number 407/2011, 523/2012 and 2015/166 (the ‘General Safety Regulation’ or GSR) governs the type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units. The Regulation lists the compulsory implementing measures and the vehicle types to which each regulation applies.

In addition, Regulation (EC) 78/2009 on the type approval of motor vehicles with regard to the protection of pedestrians and other vulnerable road users (the ‘Pedestrian Safety Regulation’), has replaced Directive 2003/102/EC with modified and more advanced provisions, adapted to technical progress. These modifications include passive safety requirements to mitigate the risk of critical injury in the event of a collision between a vehicle and a person.

The GSR requires the Commission to report to the European Parliament periodically with proposals for amendments to the Regulation or other relevant Community legislation. These proposals relate to the inclusion of further new safety features that meet the CARS 2020 and the Policy Orientations on Road Safety 2011-2020 criteria. The Pedestrian Safety Regulation also requires the Commission to provide monitoring reports to the European Parliament.

In 2015, the EU Commission commissioned the Transport Research Laboratory (TRL) to undertake an extensive study to analyse more than 50 different measures under contemplation. Based on the results, the Commission has indicated its preliminary list of considered measures and the likely implementation time for each measure during the MVWG meeting on February 16 2016.

The automotive industry is a strong supporter of further reducing road casualties and thus welcomes the initiative of revising safety regulations to introduce solutions with the potential to substantially reduce the number of accidents and related injuries. However, any approach needs to consider actions on vehicles, infrastructure and driver behaviour in an integrated way. There has to be an appropriate policy mix, combining regulatory and other measures, defined on the basis of an in-depth impact assessment.
INTEGRATED APPROACH

Road safety is a complex phenomenon, resulting from a combination of various factors and interactions between stakeholders. Factors include road user behaviour, road infrastructure, road traffic rules and their enforcement, vehicle fleet age and composition, vehicle design, etc. Isolating one of these factors, while neglecting the others will not yield the desired benefits; this calls for an ‘integrated approach’.

The global automotive industry suggests that the main focus of future initiatives to improve road safety should address all these types of measures. This means looking not only at the vehicle but also at the driver (education and enforcement) and the road infrastructure.

The industry understands that the Commission’s proposed measures currently focus on vehicle design alone. However, it hopes that efforts to address the other factors involved in road safety will not be neglected.

When looking at vehicle design in isolation, the measures to improve road safety can be classified as:

- Preventive – Active (Primary)
- Passive (Secondary)
- Post-crash (Tertiary)

The first group includes all measures that can avoid emergency situations or can actively help the driver to manage them properly without incurring an accident; the second group reduces the consequence of the accident; measures belonging to the third group contribute to optimize the effectiveness of rescue services after an accident has occurred.

HORIZONTAL APPROACH IN THE GENERAL SAFETY REGULATION REVISION

When only in-vehicle technical solutions are considered, a horizontal approach should be considered, as in the revision of the General Safety Regulation. This is important when multiple measures are considered; 18 different measures are under consideration by the Commission (see Annex).

In defining and evaluating the potential benefits of each measure, their influence on other measures needs to be taken into account.
There are several measures that are strongly correlated; the list below is not exhaustive:

- Driver distraction accidents will be reduced by AEB (Advanced Emergency Braking), LDW (Lane Departure Warning) and LKA (Lane Keeping Assist) systems.
- Small overlap frontal crash accidents will be reduced by AEB, LDW and LKA systems.
- The need for additional passive safety measures will be reduced by AEB for pedestrians, such as the protection of Adult Pedestrian Head to A-pillar collision. It is preferable to avoid accidents wherever possible, rather than simply mitigate the consequences.
- Pole side impact, UN R135, regulation will also deliver benefits in protecting far side occupants and will sharply reduce the need to extend the scope of UN R95.
- AEB will prevent or reduce the severity of frontal and side crashes.

In general, intelligent sensors/systems will increase driver awareness of the vehicle surroundings, assisting him/her to drive safely and avoid accidents.

As a general criterion, the global auto industry suggests that, where different measures can produce benefits in a certain accident scenario, **active/preventive measures should take priority**, since they can deliver greater benefits and/or avoid accidents completely, rather than simply mitigate their effects.

**SPEEDING**

Exceeding speed limits is an important factor in one third of fatal accidents (source ETSC). Speed limiters are already installed on all commercial vehicles/buses. On passenger cars, speed warning/limiters are also already widely available. Several models provide the information on the speed limit to the driver, derived from the digital maps or from a camera sensor.

Regarding infrastructure, the information on speed limits is not reliable enough; maps are not fully populated with speed limit information for all road networks and data are not always updated. Camera-based systems cannot anticipate all scenarios such as:

- traffic signs misplaced or covered;
- conditional speed limits (for example, those that apply only in case of rain or during school periods);
- implicit speed limits (urban/rural/highway).

In the revision of the General Safety Regulation, the ISA (Intelligent Speed Assistant) is proposed as mandatory in future new vehicles. ACEA members suggest a step-wise approach as follows:
• Promoting harmonisation of traffic signs at European level and processes for fast update of the speed limit information of the digital maps.
• Incentivising implementation and use of speed limiters linked to speed limits.
• Developing and implementing a new, effective solution for providing reliable speed limit information to the vehicle, based on, for example, short-range communications.
• Mandating ISA on new vehicles based on the new solution.

Until the third point is completed, ACEA has suggested promoting the voluntary introduction of ISA on new vehicles, requiring that speed limit information, where available, is linked to the speed limiter.

ACEA recommends separately evaluating the cost/benefits of Intelligent Speed adaption for heavy-duty vehicles. This reflects the fact that these vehicles mainly travel outside urban areas and already have speed limiters regulating their maximum speed.

ALCOHOL

Up to 2% of all kilometres driven in the EU are associated with an illegal Blood Alcohol Concentration (BAC) (ERSO 2006). Driving under the influence of alcohol is one of the three leading causes of traffic fatalities. Official statistics show that 11% of all road deaths across the EU are alcohol-related (ETSC 2010).

A number of European countries are planning, or have in place, programmes allowing offenders (people found driving with an excess BAC) to only use cars equipped with an alcohol interlock.

During a recent stakeholder meeting, the alcohol interlock industry reported that it is complex to interface an alcohol interlock with a number of new advanced full-electric or hybrid vehicle models.

The Commission planned to include in the GSR revision a measure to ensure that, in future, an alcohol interlock can be easily installed in all new vehicle models.

The European automotive industry supports this plan, working in the CENELEC ad-hoc group to define a standard ‘installation document’. This standard, CEN 50436-7, is now at the final voting phase. The Commission can then introduce a measure in the GSR revision that will require OEMs to provide such a document. This will ensure the ability of interfacing an alcohol interlock on all future models of passenger cars.
VULNERABLE ROAD USERS

In 2013, 21.6% of Europe's approximately 26,000 fatalities were pedestrians (ERSO 2015). European Commission then considered different measures during the revision of the GSR for reducing the numbers of casualties among vulnerable road users, such as pedestrians and cyclists.

European automobile manufacturers are working to improve pedestrian safety, introducing Advanced Emergency Braking (AEB) systems in a number of new models. In 2016, Euro NCAP introduced specific tests of AEB systems with pedestrians. ACEA members have contributed strongly to defining the Euro NCAP testing protocol, developing – with the support of the automotive suppliers – an articulated dummy (with moving legs) to maximise the realism of the scenario.

Given the appropriate timeline, extending advanced emergency braking systems for pedestrians to all new models of passenger car can be considered. With additional lead time, AEBs for cyclist can also be considered.

AEB is expected to provide a huge reduction of the number of rear end car-to-car accidents (38% fewer, source Thatcham). Its effectiveness in urban areas, where vehicles travel at lower speeds, may be even higher. Given the potential benefits achievable with AEB, ACEA does not see the need to mandate further passive safety measures requiring external protection against pedestrian head in collision with the A-pillar or windscreen.

For heavy-duty vehicles, measures are already being considered for vulnerable road user protection, such as additional side/turning indicator lamps. ACEA members support revising the exemptions for lateral protection and exploring the possibility of improving driver awareness of surrounding road users by introducing detection sensors and cameras.

On the proposal for safer truck front end design, ie to extend drivers’ direct field of view, ACEA recommends analysing the relative cost/benefits in detail; the effect on truck cabins is very high while the benefits – additional to those from sensor-based solutions, seemed limited.
DRIVER DISTRACTION

The use of mobile devices while driving and the consequent driver distraction they cause, is an increasing factor in road accidents. The US has seen recent proposals to equip road police with ‘textalyser’ devices, which can verify whether the driver has been using a mobile device.

Automotive manufacturers are working on this issue in two ways:

- developing the on-board systems of new vehicle models to minimise driver distraction during their use, following the ESOP (European Statement of Principles);
- providing vehicles with systems such as Lane Departure Warning (LDW) or Lane Keeping Assist (LKA) to avoid involuntary lane or road departures caused by distractions. AEB will also help in avoiding accidents with vehicles ahead due to driver distraction.

ACEA suggests addressing driver distraction by promoting, through both education and enforcement, improved driver behaviour concerning the use of mobile devices.

For on-vehicle systems, ACEA members are available for considering measures to ensure that the ESOP guidelines have been followed in the design of the Human Machine Interface.

ACTIVE SAFETY

As already mentioned, ACEA members are in favour of considering new models of passenger cars to have AEB and LKA standards in the future. The manufacturers agree on the gradual introduction of AEB, looking initially at moving vehicles, followed by stationary objects, then pedestrians and, at a later stage, cyclists.

ACEA is also in favour of considering emergency braking displays for all vehicles.

PASSIVE SAFETY

As mentioned in the general approach before, ACEA members suggest giving priority to active safety systems in the revision of GSR, given their potential benefits and capacity for reducing both the consequences and number of accidents. Passive safety measures may have negative consequences, including increasing CO₂ emissions.
However, some passive safety measures should be considered, including:

- Extending safety belt reminders to all front seats in all vehicles and rear seats in passenger cars. In some cases, exemptions need to be considered, for example in the case of removable seats.
- Full frontal crash for passenger cars.
- Pole side impact crash for passenger cars.
- Improving rear underrun protection for heavy-duty vehicles.
- Reducing exemptions of lateral protection on heavy-duty vehicles.

ACEA suggests reconsidering the following measures:

- Small overlap crashes; advanced emergency braking and lane keeping will reduce the number of these accidents. Only additional benefits need to be considered.
- Far side occupant protection; pole side impact regulation will require technology, side airbag curtains, with benefits also for far side occupants. Future AEB systems will prevent, or reduce the severity of, side crashes.
- Extending the scope of existing frontal and lateral impact crash to all M1 and N1 vehicles. ACEA members believe this extension will bring no additional benefits, especially in case of vehicles with a high seating position.

**FIRE PROTECTION**

ACEA members are in favour of considering the introduction of fire extinguishers in the engine compartment of future bus models and also revising regulation 110, for buses powered by compressed natural gas.

**TYRE PRESSURE MONITORING**

ACEA does not see the need to revise the regulation on tyre pressure monitoring. However, ACEA members acknowledge the proposal for amending the current regulation considering reasonable new requirements, as long as they are technology-neutral.

Before extending the current regulation – currently limited to passenger cars – to all vehicle categories, including trailers, ACEA recommends a deep and detailed cost/benefit analysis.
IMPROVED ACCIDENT DATA

ACEA members fully agree on the importance of having high quality, detailed accident data. This will improve understanding the benefits of those systems already available and help better estimate the potential benefits of new ones. The availability of an Event Data Recorder in the vehicles will be helpful. However, the direct benefits for safety, in promoting better driver behaviour, are not evident.

ACEA therefore suggests including a regulation in the GSR for harmonising the data recorded on passenger cars, but without making such systems mandatory. Implementing such systems, as demonstrated in US, can be promoted by insurance companies through a reduced annual premium.

AUTOMATED VEHICLES

The introduction of automated vehicles to the market is planned in the next years. Initial field experiments on public roads and with non-professional drivers are scheduled for 2017. In the ERTRAC Automated Driving Roadmap (2015), industrial-scale production is planned to commence in 2020. The high intrinsic safety level of automated vehicles offers the potential to compensate for human errors, preventing a large proportion of accidents.

The global auto industry agrees that the scenario of a large-scale introduction of automated vehicles is not sufficiently mature to begin considering any reduction in the passive safety of vehicles. However, this factor should not be ignored and needs to be considered in the roadmap of future improvements in vehicle passive safety.
CONCLUSIONS AND RECOMMENDATIONS

ACEA members welcome the Commission initiative to further improve road safety through the revision of the General Safety and Pedestrian Safety regulations.

As previously indicated, ACEA members are available to consider a large number of the proposed measures, while expressing concerns on only a few.

ACEA recommends that all measures should consider:

- The possibility of solving the problem with other initiatives, looking at driver behaviour, following an integrated approach.
- A horizontal approach, looking at benefits of other considered measures, avoiding addressing issues that will be completely or partially solved through other measures.
- A detailed cost/benefit analysis and impact assessment for all considered measures, separated into different vehicle categories.
- The impact assessment has to take into account the impact on other European priorities. For example, the impact of passive safety measures on vehicle weight, and with that on CO2 emissions.
- The measures need to take into account the different usage and characteristics of vehicles (passenger cars, light commercial vehicles, heavy trucks, etc.).
- All measures need to be harmonised with the provisions of UN-ECE; specific EU regulations have to be avoided.
- Transition time must be aligned with product development time, allowing at least three years for new types from the date the regulation has entered into force and the final requirements are available.

Finally, it is important to take into account automobile manufacturers’ efforts to bring automated vehicles to Europe’s roads in the near future. This trend should be taken into account in the GSR; active safety measures that will be ‘integrated’ in the automated control of vehicles should take priority over passive safety measures, which will become less effective in the long term.
ABOUT ACEA

- ACEA represents the 15 Europe-based car, van, truck and bus manufacturers: BMW Group, DAF Trucks, Daimler, Fiat Chrysler Automobiles, Ford of Europe, Hyundai Motor Europe, Iveco, Jaguar Land Rover, Opel Group, PSA Group, Renault Group, Toyota Motor Europe, Volkswagen Group, Volvo Cars, and Volvo Group.

- More information can be found on [www.acea.be](http://www.acea.be) or [@ACEA_eu](http://www.acea.be).

ABOUT THE EU AUTOMOBILE INDUSTRY

- 12.2 million people - or 5.6% of the EU employed population - work in the sector.

- The 3.1 million jobs in automotive manufacturing represent 10.4% of EU manufacturing employment.

- Motor vehicles account for over €400 billion in tax contributions in the EU15.

- The sector is also a key driver of knowledge and innovation, representing Europe's largest private contributor to R&D, with €44.7 billion invested annually.

- The automobile industry generates a trade surplus of €100.4 billion for the EU.