STUDY

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European Parliament

Workshop on

"Type-approval requirements for motor vehicles as regards their general safety and protection of vehicle occupants and vulnerable road users"

Policy Department for Economic, Scientific and Quality of Life Policies
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Workshop on

"Type-approval requirements for motor vehicles as regards their general safety and protection of vehicle occupants and vulnerable road users"

Abstract

In 2017, 25 300 people died in road accidents in Europe, while about a million were injured. Ms Róża THUN (MEP), the Chair of Digital Single Market Working Group of the IMCO Committee and the Rapporteur for the regulation on the "Type-approval requirements for motor vehicles as regards their general safety and the protection of vehicle occupants and vulnerable road users", chaired this expert workshop in order to explore how technological means, including artificial intelligence, can reduce the number of victims of road accidents.

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List of ABBREVIATIONS

ACEA	European Automobile Manufacturers' Association
ADAS	Advanced Driver Assistance System
AEB	Autonomous Emergency Braking
AI	Artificial Intelligence
CCAM	Cooperative, Connected and Automated Mobility
CLEPA	European Association of Automotive Suppliers
ECF	European Cycling Association
ECU	External Control Unit
EDR	Event Data Recorder
EP	European Parliament
ESC	Electronic Stability Control
EU	European Union
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GSR	General Safety Regulation
IMCO	EP's Committee on Internal Market and Consumer Protection
ISA	Intelligent Speed Assistance
LKAS	Lane Keeping Assist System
MEP	Members of the European Parliament
NCAP	New Car Assessment Programme
NHTSA	National Highway Traffic Safety Administration
SLI	Speed Limit Information
TFUE	Treaty of the Functioning of the European Union
TPMS	Tire Pressure Monitoring System
UN	United Nations
VRU	Vulnerable Road Users

EXECUTIVE SUMMARY

The workshop began with Ms Róża THUN (MEP), the Chair of Digital Single Market Working Group of the IMCO Committee and the Rapporteur for the legislative file in the European Parliament, introducing the topic and presenting the speakers.

The workshop brought together numerous stakeholders, from NGOs, car manufactures, governmental representatives, to Members of the European Parliament. The panels and discussions focused on the European Commission's proposal for the General Safety of Vehicles and Pedestrians Regulation.

The workshop was organised around three different parts. The first part concerned the Event Data Recorder (EDR) and advanced drowsiness monitoring: functioning and privacy issues. Afterwards, the second part tackled the Intelligent Speed Assistance (ISA), Lane Keeping Assist System (LKAS) and Autonomous Emergency Braking (AEB) system: functioning and maturity of technology. The third part presented "Direct Vision" and its functioning in practice. A special focus on the heavy goods vehicles as well as an explanation on the progress of this system in the city of London were also provided.

Finally, during the roundtable, the stakeholders from several sectors debated and exchanged views on the different approaches, concerns and future trends on road safety.

Overall, the participants fully supported the Commission's proposal. It was also noted that legislation should only be approved at the cutting edge of technology in order to avoid wasting resources and time.

Excessive speed was constantly recalled as the most important issue within the General Safety Regulation, which is why technologies such as the Intelligence Speed Assistance constituted one of the milestones of the road safety discussions.

In this context, it is widely acknowledged that available technology is currently functioning as an important tool to reduce drastically the number of fatalities, but there is still margin for improvement.

Some stakeholders expressed their concern on the lack of compatibility of the new devices with the existing infrastructure and vehicles. Therefore, best practices and standardisation are challenges that need to be tackled.

Another point that was widely discussed concerned the use of data enabled by the new technological devices to improve road safety. Some stakeholders supported the absolute use of sensitive data under some circumstances while others had a stricter opinion. There are also differences of opinion on the transmission and storage of data, as well as the treatment of data by the European institutions. Finally, the securitisation of data, in order to avoid cybersecurity attacks, represented a convergence point on this issue.

In addition, regarding the content of the regulation, it has been claimed that a more complete theoretical framework would be helpful to avoid divergences and facilitate harmonisation and standardisation, especially regarding the meaning of safety for machines.

Participants concluded that collaboration, coordination, exchange of information and participation of all stakeholders should be maintained in order to keep on progressing in the decrease of road accidents across the European Union (EU).

INTRODUCTION AND OPENING REMARKS

Ms Róża THUN (MEP), the Chair of Digital Single Market Working Group of the IMCO Committee and the Rapporteur for the legislative file in the European Parliament, welcomed everyone and mentioned that the workshop's aim was to gather information and data that could help the legislative work of the European Parliament. The workshop allowed participants to explore technological developments that may directly improve road safety and save lives of both vehicle occupants and vulnerable road users in the EU.

Ms Thun noted that the workshop took place just ten days after the World Day of Remembrance for Road Traffic Victims. She also recalled that according to the World Health Organisation´s Global Status of Road Safety Report, the total number of road traffic deaths reached 1.25 million per year in addition to 20 and 50 million people who are left injured or disabled each year.

While the problem is most serious in low and medium income countries, road accidents are also a continuous problem in the EU. Ms Thun indicated that according to the data from 2017, **25 300 people died in road accidents in Europe**. In addition, about **a million were injured** in road accidents.

Ms Thun pointed out that the EU managed to reduce the number of deaths on European roads from over 60.000 in 1996 to below 26.000 in 2016. This effort needs to be continued and it is necessary to use every opportunity to reduce the amount of deaths and injuries.

Ms Thun stressed that **there is no reason why Europeans should die or be injured in road accidents**. She pointed out that **life and health are among the values that cannot be traded against other considerations**. "We cannot compromise on these values. Therefore, the ultimate goal should be **zero victims of road accidents**", said the Chair.

Ms Thun indicated that, while pursuing this goal, Europeans should introduce effective solutions and engage all available technologies to significantly improve road safety. The rapid development of digital and cognitive technologies gives hope and can help make substantive progress in this area.

The Chair noted a current stagnation in the reduction of road accidents in the EU, and a growing gap between the targets set for 2020 and the real data. Therefore, she welcomed the proposal of the European Commission on type-approval requirements for motor vehicles, and expressed hope that the legislative work of the European Parliament would have a significant contribution in reducing the amount of victims of traffic accidents in the EU.

Ms Thun clarified that the workshop represented a forum of discussion between Members of European Parliament and the expert community including associations, producers and road users. This dialogue focused on understanding the state-of-the-art of safety technologies and allowed Members to prepare effective European legislation in this area.

Mr Antonio Avenoso, the Executive Director of the European Transport Safety Council, highlighted the relevance of the road accidents problem. Mr Avenoso pointed out that if we would compare current road accidents numbers with aviation accidents, then every week there would be two passenger plane crashes with absolutely no survivors. This would certainly not be tolerated in the aviation sector, yet we do accept it when it comes to road deaths.

Mr Avenoso referred as well to the stagnation in road accident reduction over the last 4 years. He praised the EU for the legislation on people's safety because, without these measures, the figures would be even higher. Mr Avenoso indicated that it is, at the same time, important to adopt the regulation as a package, since there are strong synergies between the different measures and cherry picking would not be beneficial for road safety.

Mr Avenoso pointed out that one of the most important measures within the General Safety Regulation is the one on speed. Mr Avenoso referred to the statement of Mr Rune Elvik, one of the most renowned road safety scientists, who indicated that, "speed remains an extremely important risk factor when it comes to road transport. It has effects on the number of accidents much more than all other risk factors". Mr Avenoso noted that Intelligent Speed Assistance (ISA) is a great technology as it helps the driver respect the limit, the law, and not get speed tickets. The technology is not for the future, it is here, and available in many car models on the markets.

The expert pointed out that nevertheless, there is a frequent disinformation on how ISA works and how it could save lives. Firstly, "the vehicle stops you from going any faster even if you press the accelerator". This is not true as the system can actually be overridden by the driver. The driver is free to choose the speed limit that he or she wants, and so the vehicle does not stop you from going any faster. Secondly, "the Speed Limit Information (SLI) system, that only informs you on speed limit, is an effective alternative to ISA". This is not true either because if all vehicles were fitted with SLI instead of ISA, there would be 1300 more deaths per year.

The speaker would therefore not call this an effective alternative. The ISA system has been tested in the real world, showing accuracy of 90 per cent. For the remaining 10 per cent that is not accurate, the system remains overridable. It is, in essence, the ultimate responsibility of the driver to override the system.

To conclude, Mr Avenoso strongly supported the measures of the General Safety Regulation, and presented his support for the campaign launched by the European Transport Safety Council. The campaign is based on a 1980s song "Last night the EU saved my life" and it has been signed by MEPs, personalities, ministers, etc.

Mr David Ward, Secretary General of Global NCAP, paid a special tribute to the European Parliament for its efforts to improve passenger car safety for more than 20 years.

The EU's crash test standards have been adopted as UN regulations and are being applied all over the world in countries like Brazil, India, Malaysia, Mexico, etc.

Mr Ward reminded the participants of the workshop of three lessons, which are highly relevant to the Parliament's current discussion on vehicle regulation:

1. Understanding the power of regulation to accelerate vital safety systems will take too long to penetrate all model types. Leaving regulation to the market alone could push safety behind the scenes. Safety cannot become a luxury good.
2. It is important to legislate at the cutting edge of technology. Never legislate at less than state of the art technology. Always resist lowest common denominator and promote technologies that are challenging to the status quo, especially because today's status quo is surely behind the leading technology.
3. Do not dilute the Commission's proposal or undermine policy processes. When the European Commission´s directorates were divided on the issue of safety, the European Parliament had to intervene on behalf of public interest to put safety first.

Mr Ward praised the Fair Mobility Package and Vehicle Safety Proposals for being comprehensive and inclusive evidence-based policy processes. With stakeholders involved, every participant contributes to the implementation of the entire proposal. It is essential to avoid cherry picking of some technologies and delaying others.

He also indicated that the Global New Car Assessment Programme (Global NCAP) fully supports the Commission's proposal, endorsing all provisions and he is particularly pleased to see Autonomous Emergency Braking (AEB) and Intelligent Speed Assistance (ISA) included. In his opinion, improvements are needed in the areas of occupant protection, vulnerable road users protection, and mandatory speed limit control.

Mr Ward concluded by hoping that the European Parliament will fully support the proposal and its road safety measures. He believes the duty of democratic scrutiny is essential, and if the Commission proposal needs improvement, he requests MEPs to avoid delays, in order to continue the Parliament's remarkable achievements and legacy in improving the road safety in Europe.

Panel 1: Event Data Recorder (EDR) and advanced drowsiness monitoring: functioning and privacy issues

Dr Stefan R. Benz, Senior Expert on Automotive Safety Systems of the European Association of Automotive Suppliers (CLEPA), started his presentation by supporting the measures defined by the General Safety Regulation (GSR). He considers that this regulation constitutes a real step forward in reaching the road safety targets for 2020 and 2030. He found particularly positive the efforts made by the European Commission concerning the full set of measures for a maximum reduction of road fatalities and civil injuries.

Before analysing some of the new technologies concerning road safety, Dr Benz recalled the process of implementation of the Electronic Stability Control (ESC) technology as a good example for future technologies. Its effectiveness has been confirmed by data gathered in the last ten years and consequently, the ESC device has become mandatory in all cars since 2014, saving lives every day.

Dr Benz then turned to the analysis of functioning and data treatment of three important new technologies.

The first technology discussed was the Event Data Recorder (EDR). This device is able to store accident critical data before, during and after a collision. It is typically located inside the airbag control unit that is located in the middle of the car and consists of a small computer connected to a large number of sensors that are capable of detecting imminent collisions. It is an example of the so-called passive security systems.

Inside the airbag control unit, there is a microcontroller that continuously monitors the status of the vehicle through the signal it gets from the sensors and continuously writes status information about the vehicle into a volatile memory, which implies the suppression of the information if the power is disrupted.

The information recorded may concern, depending on the vehicle, the speed, the acceleration, the ABS and ESC activity, the status of the airbag and the seat belts etc.

It is interesting to pay attention to the NHTSA (National Highway Traffic Safety Administration) standards, which is a best practice for the data requirements in the United States. Many vehicles and manufactures comply with these standards as they determine which data are suitable for safety reasons.

However, there is no storage of audio or video recordings (unlike airplanes, for instance, where there is a separate and dedicated box for such recordings). This EDR for cars is located inside an existing ECU (External Control Unit) where no audio-visual data can be stored.

Concerning the functioning of the system, the data that is stored covers a duration of about 5 seconds and the oldest data is constantly overwritten. However, when the airbag unit detects a collision, then these data are stored into the EDR memory, which is non-volatile. This permanent memory means that even if the power is disrupted, these data are preserved and can be accessed after the crash.

The second device described by Dr Benz was the Driver Drowsiness and Advanced Attention Monitoring. This device, already available in many vehicles today, uses a steering angle sensor and/or a camera facing the driver. It applies an algorithm that is based on the personal behaviour of the driver over time. In simple words, the system looks at changes in the steering angle, the eye opening, and the head movements. The system can detect micro-sleeps, identifies the time of the day and measures the driving time.

Concerning the data flow, first there is the steering data from which it is possible to derive a personal drive steering pattern. This detects little movements difficult to appreciate from the outside and calculates a steering index based on video sources that check the eyelids, the blink detections and the head movements.

This index, personal and constructed over time, is used to derive a drowsiness index. Thus, if such index exceeds a certain boundary, an alarm is triggered. For instance, when the camera detects a micro sleep the device triggers a "coffee cup" for the driver. Finally, it is important to clarify that this data stays inside the vehicle at all times, so that no recording is carried out.

Finally, the third device discussed by Dr Benz is the Advanced Distraction Recognition System that detects if the driver is paying attention to the task that he/she is supposed to do. This system consists of a camera that is filming the driver with a distraction algorithm based on head pose, eye gaze, face recognition etc. to check what the driver is looking at. The critical point according to the speaker is the definition of distraction because the driver may be just looking at the radio to change station, to the mirrors etc., so further developments are still required.

Dr Benz concluded his contribution by mentioning future systems that will use sensors to store other kinds of data such as health data etc.

Prof. Dr Wojciech Wiewiórowski, Assistant Supervisor at the European Data Protection Supervisor, focused his contribution on the privacy assessment and normative proposals concerning data protection.

He recalled the importance of data protection as one of the fundamental rights in the European Union, set out in Art 16 of the TFUE (Treaty of the Functioning of the European Union), pointing out however that fundamental rights, such as data protection, are not absolute.

Prof. Dr Wiewiorowski indicated that Recital 8 of the EU GDPR (The General Data Protection Regulation) establishes a difficult balance between the fundamental rights of data protection and the practical means proposed in the regulation, an area which is criticised and could be improved.

He also pointed out that cars are the biggest mobile device, which by default, are in constant contact with the rest of the environment.

The speaker highlighted that the interoperability and the fact of sharing information is not negative per se. However, it is necessary to take care and be aware about content, destination, treatment and purpose of such sharing. This concern applies as well to those cars that are owned by a company and given to the employees of the company.

Most customers know that some information is transmitted out of the car when purchasing a new vehicle but they do not know what and how it is exactly transmitted.

Regarding the level of concern of society on data protection, the speaker explained that society is naturally divided into three groups. There is a first group, approximately accounting for 25 per cent of people that could be defined as fundamentalists concerning privacy.

Around 60 per cent of society cares about privacy but in a more open conception and is willing to share the data if it is in their interest.

Finally, the last 15 per cent just think that it is a part of the so-called oil of the new economy, so something that is sellable and regular.

Regarding the concrete privacy concerns related to road safety, Prof. Dr Wiewiórowski called for more action on the so-called secondary use of data. He refered to the use of the road safety information, such as the location of the vehicle by employers, insurances, enforcement and tax authorities. For instance, when tolls were implemented in Poland, the customs authorities asked for the data to the Gross Domestic Product (GDP) authority because of their utility for taxes and customs purposes (location of trucks).

In the view of the speaker, the acceptance of requests like this should be done only if they serve the public good.

Finally, Prof. Dr Wiewiorowski concluded by pointing out concerns regarding the enforcement of an obligation to report and share information in the future. He reflected on the possibility of giving benefits to clients or firms depending on the situation, paying for the access to information, etc.

Panel 2: Functioning and maturity of such technologies as Intelligent Speed Assistance (ISA), Lane Keeping Assist System (LKAS) and Autonomous Emergency Braking (AEB)

Mr Richard Cuerden, Technical Director for Vehicle Safety of TRL (The Future of Transport), presented a report written for the Commission and published by the TRL. The study analysed the EU-28 Member States and all vehicle types covered by the general safety and pedestrian safety measures, predicting the benefits and likely costs over a 16-year period starting in 2021. Results were presented in a cost-benefit analysis, showing 25 thousand fatalities that could be prevented over this period. The analysis included over 100 stakeholder interviews, literature research, quantification of benefits, and treated uncertainty by using prediction models in line with scrutiny guidelines and costs. All measures that include driver distraction were introduced in the analysis and in conclusion, there were 17 different measures proposed.

Mr Cuerden noted that results proved an increase of effectiveness when the Intelligent Speed Assistance (ISA) is implemented, as it can reduce the speed, and therefore reduces or avoids the impact of a collision.

The cost effectiveness evaluation took into account different vehicle types and different scenarios such as passive safety measures prepared to prevent casualties in an accident inside and outside the vehicle. Mr Cuerden drew the attention of Members to the problem of cherry picking among safety measures, as it can have a negative impact on the measurement.

Mr Cuerden presented the differences between the ISA and the Speed Limit Information (SLI) systems. Both require traffic sign recognition to know the speed limit and to inform the driver. The ISA technology gives feedback to the driver through an accelerator control (as a warning), while in the case of the SLI the warning is either visual or audio. Therefore the effectiveness of the systems is, according to Mr Cuerden, very different. The ISA system is much more effective than the SLI, which just provides information. Both systems can be overridden at all times, as it is the driver's choice to override the speed limit.

With the same target population, 16 to 20 per cent of all fatal crashes in the United Kingdom and France involved speed as a contributing factor. The question is whether the ISA system would have reduced accidents. The impact assessment results highlighted that this would have reduced 5.2-8.7 per cent of all crashes.

Mr Cuerden agreed with previous speakers on SLI not being an effective alternative to ISA and supported the proposal that helps the industry stakeholders get ready for the challenges as the EU moves towards an automated future.

Mr Yonatan Shai Epstein, ADAS Program Manager of Intel (Mobileye), presented the state of play of the current generations of ISA, LKAS and AEB technologies.

Mobile EYE is the world leading driver's camera based system with 10 years of production experience on object detection, lane departure warning and traffic sign recognition for ISA. It recently launched 4th generation chips IQ4, with the production of IQ5 for the generation of fully autonomous cars by 2021.

The camera-based Advanced Driver Assistance System (ADAS) is being pulled and pushed ahead by two different trends: (1) The Euro and Global NCAP support and increasing demand for high quality ADAS applications and high-level functions; and (2) The commitment to bring autonomous cars to the road, parallel to the same timeframe of the GSR and ADAS mandate.

The single camera is the foundation for autonomous driving. It provides sensing algorithms that can detect stationary objects, moving objects, road infrastructure, and free space. The cameras - like humans - are able to extract semantic information using the turn indicators of cars, the location of vulnerable road users and so on.

Once the camera is in place, activating or adding other features becomes more cost-effective as the system is already installed.

Mr Epstein pointed out that EU28 countries use different visual appearances, a challenge that can be overcome with new developments. The system takes pictograms of different traffic signs, data from different countries, and adds them to the deep neural network classifier.

Any variant that was not included in the initial software can be added later on to improve overall detection performances. The expert stressed that camera algorithms are very versatile and agile to bring rapid improvement to the system and performance on a steady climb as these systems become more and more widespread.

The latest technologies can provide 3D models for vehicles and are very responsive to collision critical scenarios with motorbikes, pedestrians, cyclists, cars, and trucks. For the production of cars in 2020, it will not be a challenge to perform above the thresholds provided by the GSR mandate.

When we look at lane detection and road users detection, the current generation of algorithms provides very highly available and accurate lane detection over 100 meters ahead. This enables applications like lane departure warning, lane keeping assist, auto lane change, and autonomous evasive steering. Another layer of the algorithm can detect the condition of the road even with snow and rain. It is able to disable ADAS functions to ensure that the driver is not over-relying on them.

There are nevertheless challenges to complete vision such as poor maintenance of infrastructure and a lack of standardisation (e.g. the traffic signs).

Finally, it is important to work on the development of decision-making models for cars to ensure they will never make a decision that might cause an accident. Mr Epstein concluded my mentioning a white paper that they have published that gathers all stakeholders (governments, regulators, consumers, NGOs, and industry) in order to have a conversation about what it means for these cars to be safe on the road.

Panel 3: Direct Vision: How it works in practice

Dr Will Norman, the Walking and Cycling Commissioner from the Office of the Mayor of London, indicated that the ultimate goal is to reduce the number of people being killed or injured to zero. The current Mayor of London launched the Vision Zero Approach with four measures to tackle this: safer speeds, safer design of roads (cycle tracks, better facilities for pedestrians), safer behaviour of drivers and enforcement, and safer vehicles.

Dr Norman supported and welcomed all the Commission's proposals. Cities across the world are showing interest on their work regarding Vision Zero, as it is an urgent matter: their Vision Zero statement is that no death on roads is either acceptable or inevitable, and the effective measures need to be taken quickly. The European Union has led the world in so many aspects of road safety, and for this, the Office of the Mayor of London asks the European Parliament to push for a speedier implementation of the Direct Vision.

Ms Alina Tuerk, Delivery Planning Manager of Transport for London, presented a technical approach on Direct Vision, in particular the volume of space that a driver can see directly through the window of the vehicle is a determinant in the number of accidents.

Developing standardised techniques that manufacturers could implement worldwide is a key issue. Academics and consultancies have proven that the driver's reaction time under Direct Vision scenario is 0.7 seconds faster than under indirect vision. At traveling speed of 5 miles an hour, that is an extra meter and a half of stopping distance. In addition, at 15 miles an hour, that is 5-meter stopping distance. The impact on the pedestrian or cyclist can be the difference between a collision and none.

The incidence of collision is 23 per cent higher in traditional cabs, using indirect vision aids compared to vehicle cabs that have higher Direct Vision. Drivers surveyed were resistant to try the new direct vision models, but they experienced less stress with the increase of Direct Vision. A reduction of business operating costs but also of collisions is undisputable. Not only lives are saved, but it also leads to healthier streets where people feel safe to walk, cycle and spend time.

Mr Samuel Kenny, Freight Policy Officer at Transport & Environment, focused on sustainability and noted that the General Safety Regulation is an opportunity to save lives. With a focus on trucks, there are 4000 fatalities per year, of which 1000 include vulnerable road users (particularly cyclists and pedestrians). Such a collision is bound to be fatal. There are ways to design trucks today with Direct Vision, but at this moment, the Direct Vision has not been regulated in the EU. The Direct Vision principle is only regulated for cars, not for trucks. There is a huge disparity and difference in performance. Some urban trucks have zero meter blind spots, and this is the best scenario. Worse scenarios are those where truck drivers cannot see a cyclist within 2 meters from the vehicle. Regulating would therefore improve the number of cyclists and pedestrians the truck driver could see.

The direct vision requirements would save up to 550 lives every year. It improves reaction speeds by 0.7 seconds. At 25 kilometres per hour, this 0.7 second difference means pushing the break 5 meters sooner. In an urban environment, this distance is the difference between life and death. In addition, drivers face less stress and their driving improves as well when navigating in cities. It is the same with other users. Lastly, sensors or detections systems and direct visions are not rival technologies. Both are needed to improve the safety performance of trucks and for this reason, both have been included in the Commission proposal.

There is an area on current heavy goods vehicles where it is impossible to improve direct vision. For this reason, in these areas sensors are extremely effective. Such sensors can help the driver's performance, but they need to be very effective. If it is signalling every time there is a cyclist or pedestrian, then the system will be disabled, or it loses its effectiveness, as the driver will stop reacting to it.

Building upon the Commission´s proposal, Mr Kenny pointed out three important aspects for improving the proposal:

- There is too much delay. The implementation of the proposals takes years. If the regulation is to come into force in 2020, Direct Vision will be implemented in 2027 for new models, and in 2030 for all models. We need to speed this up to have these safer trucks on the market as soon as possible.
- Direct Vision will be the requirement, but we need a definition for the ambition level for the Direct Vision. We are also advocating for a differentiated approach. Not all trucks are designed the same way: even within the same type of truck, there are disparities. The worst in class long haul trucks have twice as many blind spots as the best in class long haul trucks. We need one requirement for small trucks and one for long haul trucks in order to reach optimal safety gains.
- Deadlines have been outsourced to the UN, but there needs to be a clear deadline for the EU to come forward with their own delegated or implementing act.

Mr Kenny concluded mentioning that trucks constitute 2 per cent of vehicles on the road, but accounts for 15 per cent of fatalities. Anything done to improve the safety performance of trucks is extremely cost effective.

Roundtable

Mr Mehdi Hocine, Deputy Head of Unit for Automotive and Moblity Industries from DG GROW, pointed out the stagnation in reducing the number of road fatalities. Mr Hocine reflected on the European Parliament's report on saving lives and boosting car safety. He pointed out that all challenges are identified and have been included in the European Commission's proposal in line with the impact assessments and with the wide support from stakeholders. This new approach is ambitious, forward looking, and based on common sense.

The speaker pointed out that the use of newest available technologies will help to set international standards. Geneva discussions in the UN context enables a forum for international harmonisation for car regulation. This new approach is also based on common sense, particularly as there is no standard on Direct Vision for trucks and buses aimed at reducing fatalities of pedestrians and cyclists.

Mr Hocine concluded with the mention that this is a chance to be a leader in road safety and the field of automation. The world is looking at what we are doing, and we have this unique chance to be the frontrunner.

MEP Ms Olga Sehnalova (TRAN) expressed her concern on the preparedness of the infrastructures for the functioning of all these proposals across the EU. She reflected on the reliability of the systems, highlighting the importance of the acceptance of the new measures by drivers and their capability to use the systems properly in order to get all the expected benefits. Concerning the proposal of the Commission, MEP Ms Sehnalova considered that it should be presented as a whole package for the common goal of saving lives.

Afterwards, as a concern raised in the TRAN committee, MEP Ms Sehnalova asked Prof. Dr Wiewiórowski about his opinion on recital 8, especially on the provisions concerning EDR and distraction recognition.

She wondered if it might be necessary to have additional safeguards to ensure that all the data, especially the personal data, is processed within the vehicle and not outside the vehicle.

Answering the question, **Prof. Dr Wiewiórowski** acknowledged the importance of the recital. However, he pointed out that it would be great to have an agreement in the text on the data collected and the purpose of such collection.

Prof. Dr Wiewiórowski put forward that data should not be treated automatically outside or inside the car as an absolute requirement. Indeed, in some cases, this could be positive and necessary for data protection, while in other cases, such as in the EDR in which the data are transmitted and stored outside the car, it may create a slightly better and more secure situation for the data itself.

He then highlighted that the most important aspects are the kind of data that are collected and to whom are accessible. In his opinion, this has remained unclear and misaddressed in the proposal.

Concerning the treatment of sensitive data (such as health information), the speaker showed his acceptance in specific situations. However, for the more sensitive the data, higher protection is required.

Finally, about privacy by design, Prof. Dr Wiewiórowski considered it as one of the solutions to be included but he expressed his concern related to the Collingridge dilemma. This dilemma states that the effects of the new technology cannot be easily predicted until the technology is deployed, while, at the same time, the implementation of the technology makes any changes much more difficult.

Mr Marc Billiet leads the International Road Transport Union's road freight transport and environmental affairs in Europe.

Mr Billiet pointed out that the safety recorder of heavy-duty vehicles have been strongly and persistently improving over the last decades, but he acknowledged that further improvements could have been done.

According to a track-accident causation study carried out by the International Road Transport Union together with the EC, 85 per cent of accidents in which trucks were involved were caused by human error. However, it is important to note that out of those 85 per cent, other road users caused 75 per cent of those accidents. Therefore, it is not only a question of tackling the trucks, but it is also necessary to make sure that other road users are aware of the behaviour of larger vehicles on the road. As it has been said, it is key to look at the whole package of measures to improve road safety. It is important to not only look at the vehicle but also to the infrastructure, the training, and the awareness building efforts.

The compatibility of the technology with the vehicles is also crucial. It is important to note that trucks, tractors and semitrailers are modular vehicles that change modules very often. This implies that if the sensor centre is in a different part of the vehicle and it is not compatible with the new module, it would not be possible to benefit from those technologies.

Finally, Mr Billiet expressed his concern about the potential measures that would affect the vehicle design. He claimed that design must be created to make the vehicles work since they are commercial vehicles and the load capacity is extremely important for those vehicles and needs to be maintained.

Dr Ulrich Veh, the Safety Director of the European Automobile Manufacturers' Association (ACEA), indicated that acceptance has a key role and represents a prerequisite to reach the targets to reduce fatalities and serious injuries.

He pointed out some aspects of the systems that are included in the chapter one of the regulation:

First, Dr Veh highlighted that, according to their accident analysis, the autonomous emergency braking is an effective measure and a good idea that needs to be promoted.

Secondly, concerning passive safety, the speaker believes a full frontal crash protection as a good option to be implemented by rule making.

Then, besides the windscreen protecting bicyclists, the automated emergency braking has been more effective.

Concerning the advanced distraction recognition, Dr Veh considered that the system is sophisticated and targeted to automatic driving. Therefore, this technology has to be discussed at the next General Safety Regulation working group.

With respect to the Intelligent Speed Assistance (ISA), the speaker had a positive view, but he advocated for more demanding tests. Performance tests are carried out on normal and favourable conditions (during the day, in sunny weather, on good roads etc.). Instead, the tests should be exposed to abnormal scenarios in order to get more realistic results, given that the performance is decreasing when there are bad conditions. Therefore, since the implementation of ISA is not mature enough, Dr Veh recommended Speed Limit Information systems together with better enforcement and training.

In addition to this, in a more general scope, Dr Veh considered that the systems should give drivers the possibility to be switchable if there is a need. He closed his speech by claiming that time is needed for the systems' implementation. The speaker recommended 24 months for the implementation from the availability of the delegated act.

Mr Peter Kronberg, the Safety Director of VOLVO Group Sustainability Agenda, started his intervention by expressing his satisfaction with the level of concern at both national and international level, and by highlighting the role of VOLVO as an advocate of road safety.

First, in his view, there is a tendency of over reliance on individual gadgets to solve complex problems in the General Safety Regulation. Therefore, a more holistic understanding of the multitude of crash cases that could exist in a given scenario is needed.

Mr Kronberg also considered that there are considerable overestimations of potential benefits of some technologies. This is perhaps because of some misconceptions about the capabilities of the systems. In his view, it is crucial to understand the risk of distracting regulators and technology

developers with the implementation of technologies for years, which are either unviable or unlikely to benefit safety.

Concerning the timing for implementation, it is not realistic to develop new systems for the new technologies in 12 months. Likewise, it is not possible to begin development before the finalisation of the technical requirements.

The requirements for Direct Vision, that Volvo has fully supported and whose standards in London were implemented in collaboration with the local authorities, need some clarifications. Indeed, changing the cabs of the trucks involves huge changes in the production facility and that takes time. Therefore, the expectation of the proposal that intends to apply these requirements also in existing trucks is unrealistic. However, it does not mean that high visibility changes are impossible for existing vehicles, especially in the urban environments, but they need technical compatibility and suitability.

In conclusion, Mr Kronberg expressed his general support for General Safety Regulation proposal and even more to the great efforts of the policymakers in addressing road safety in Europe.

Dr Bernd Gottselig, the Senior Manager of Automotive Safety and Advanced Regulations at Ford Europe, pointed out that Ford supports the General Safety Regulation and the approach that it has taken in the proposal.

Dr Gottselig considered that the proposal should provide detailed technical content and input to define details, test procedures, technical requirements, and the approval regime for each one of this technologies. For example, the European Commission has clearly provided to the motor vehicle group a proposal in which it is outlined in very clear terms where the individual measures are applied and what kind of finalisation dates are foreseen.

Dr Gottselig showed his concern, contrarily to the intention of the regulation, on the lack of enough lead-time that the regulation foresees.

Dr Gottselig concluded by requesting that the legislator makes sure that the requirements are well developed, published, and finalised before giving manufacturers 24 months for the development of the new vehicle types. That will help manufacturers to get a robust implementation and a high quality execution of these requirements. With unclear requirements, this will not be possible.

Dr Gianluca Cerio, a technology leader focusing on V2X, 5G and IoT for the Teoresi Group, focused his presentation on consumer security. Dr Cerio highlighted that these new systems are characterised, on the one hand, by a dynamic and efficient functioning and, on the other, by an information flow that could affect private life and security.

This scenario should imply an increase in cyber security problems due to the interaction between systems. Basic concepts like confidentiality, integrity, non-repudiation and authenticity have to be guaranteed.

Other systems could access private drivers' attributes through sensors and the camera. For instance, even Tire Pressure Detection system can identify a car and sometimes a driver also. These technologies are invasive from a privacy point of view and this context always contrasts with cyber security requirements, authenticity, confidentiality and non-repudiation.

The speaker concluded his presentation by highlighting the importance to have something more than best practice to ensure that all the devices are centralised in cloud services following type-approval requirements in order to mitigate the risk of privacy and cyber security attacks.

Dr Andrea Segato, Market Manager focusing on Vehicles Market development for the Teoresi Group, highlighted that Teoresi is working in many projects for different markets, mainly automotive, railway, aerospace and defence.

The speaker put forward that there are a lot of cross-market technologies and cross-market issues such as privacy and security. Therefore, his final request focused on the need to provide solutions to these cross-market issues and technologies.

Ms Fabienne Goyeneche, Manager at the Public Affairs Department of Michelin, aimed to recall the importance of the tires for security. The regulation introduces features such as the Tire Pressure Monitoring System (TPMS), minimum performance requirements and environmental concerns on noise and CO_2 emissions. In terms of the safety braking capacity of tires, the speaker welcomes the fact that the proposal aims to extend the TPMS to trucks.

Likewise, Ms Goyeneche valued positively the EDR technology because it allows get a better understanding of the accidents, which enables to develop suitable technologies for Michelin's already technologically advanced tires.

According to some researchers, the braking capacity of tires has been a deciding factor for collusions.
Therefore, tire performance should be continuously addressed within the GSR. However, Ms Goyeneche claimed a new approach should be put in place: today the tires are tested when they are new and under favourable standard conditions, instead, tires should be tested at their worst stages

when they are warn and not when they are new. Indeed, this kind of test would make the difference and save lives because a difference between 40 to 50 metres of braking distance capacity may be crucial for a crash.

Dr Yomi Otubushin, representing the 5G automotive association, stated that the regulation should not specify how technology is used. Instead, the regulation should specify the function required.

Dr Otubushin considered that it is possible to optimise the protection of the occupants despite the great progress over the years, and that this protection should be based on prevention. Tackling Cooperative, Connected and Automated Mobility (CCAM), type-approval requirements for motor vehicles must be future proof and foster innovation for CCAM. Prevention should also be a priority while a complementary and neutral mix of technologies is essential to deliver the maximum safety and efficiency benefits to users, VRUs and other stakeholders.

Concerning connectivity, the speaker defended the need for higher cooperation between automatic and cellular technology. This connectivity is not just over the network cellular but it will be direct, vehicle-to-vehicle, vehicle-to-pedestrian, vehicle-to-motorcyclist etc.

Indeed, the 5G automotive association is currently promoting this connectivity but Dr Otubushin showed his concern on being left out because of some technology specifications, and this is the reason for requiring complementary and neutral mixed technologies to get the maximum safety and efficiency benefits.

Dr Otubushin also supported the advanced emergency braking systems. These systems, which require on-board sensors, radars and cameras, are mature and effective for short-range and direct interventions offering immediate safety benefits today. In the context of the ongoing discussions with the European Commission, the speaker asked for higher streamlined coordination of legislative work stream such as the C-ITS Delegated Act, the General Safety Regulation, the Commission Recommendation on CCAM and the Revision of Road Infrastructure Safety Management Directive. This coordination would make sure that issues like overlapping and duplication in the measuring of benefits between directorates are avoided.

Dr Otubushin concluded by announcing a platform of experts on these issues to be held in 2019 and by highlighting the importance of the attendance of the several DGs that are involved.

Mr Guido Gielen, Technical Director for the International Automobile Federation (FIA), the Mobility Branch, expressed a broad support for the proposal of the European Commission.

Mr Gielen concurred with the Commission in the mandatory introduction of autonomous emergency braking system, with the detection of vulnerable road users, as well as the LKAS. He also mentioned that all passenger car seats should include seatbelt reminders. Mandatory seatbelt reminders are proposed at the international level and it is included in the Commission's proposal.

Some passenger safety measures that have not yet been commented include the UN Regulation No 135 on impact crash testing of passenger cars, as well as rear underrun protection suited for heavy good vehicles.

Mr Gielen showed concern for the proposal of the Commission related to the robustness of certain measures. Regarding ISA, the question arises with the interactions between the vehicle and the infrastructure. The FIA has conducted "the VUFO study" to evaluate pros and cons of the system and concluded the technologies might not be sufficiently matured yet to make them mandatory. He points out that ISA should not be mandatory, but available for consumers who want to have it.

To conclude, Mr Gielen shared a broad support for the European Commission's proposal as it is about making people safer.

Mr Jeannot Mersch, the President of European Federation of Road Traffic Victims (FERV), began his presentation mentioning the world remembrance day of road traffic victims, which is also its 25th anniversary.

Mr Mersch congratulated all the work done by the Commission in 25 years, as well as the panel contributions to help reducing the numbers of road accidents.

The discussions of data protections is indeed important, but Mr Mersch insisted they do not go off track. Now the term vulnerable road users was used more than 25 times which is a great improvement as 25 years ago the terms were only focusing on safety of drivers and car passengers.

There are nevertheless effective solutions. Mr Mersch supported the whole package, as well as direct vision and vision zero. He concluded: "There is no delay needed to reach this. The EU should save the lives of all".

Mr Ceri Woolsgrove, a Policy Officer at the European Cycling Association (ECF), noted that the Commission package can lead to a momentous road safety operation for the EU. It is an opportunity with the current available technology to also have it outside the vehicle.

Mr Woolsgrove pointed out the importance of direct vision standards on larger vehicles. Up to now, 40-ton, 17 meter long machines drive without proper direct vision, which is even more essential in urban areas.

Around 15 to 20 per cent of cycling fatalities result from a crash with large vehicles, and rates are even higher in some cities.

In terms of autonomous cars, emergency braking is fantastic and passive safety systems have a better design.

However, the ISA is essential. Speeding is incredibly important. Drink driving reduction in 10 per cent leads to 1 per cent decrease in fatalities. Speed acts as a multiplier to all other systems in the car: autonomous emergency braking and the passenger safety system. In essence, they are all parts of a system that you cannot separate. It is therefore essential to have the ISA, not just SLI. It is particularly interesting because it changes the attitudes and behaviours of drivers in the car. It makes individuals less aggressive.

Stepping back from the technical side, Mr Woolsgrove concluded that ISA helps the driver stay within the law.

Mr Frederik Roeder, the Managing Director of Consumer Choice Centre, pointed out that we are very close to having self-driving cars. There are in fact some jurisdictions in the world that have more advanced technological developments. Mr Roeder shared a life experience of a man's life being saved in Missouri thanks to the self-driving mode, as the car brought him to the hospital. The 20 miles he could not have driven alone saved the man, and the car caused no accident while trying to reach the hospital in autonomous driving. These technologies can therefore become game changers.

The main causes of deaths are human error, irresponsive behaviour, drowsiness, or intoxication. "Thinking, Fast and Slow" by the Nobel prize laureate Daniel Kahneman explains that humans are not rational, although we think we are. We act wrong in moments we should act right, and in critical situations systems, computers and AI react better than humans.

Innovative systems, such as advanced drowsiness monitoring can be lifesaving, and not only in autonomous vehicles.

Mr Roeder insisted on technology neutrality. We do not know what good things are to come, and for this, we need to experiment and focus on evidence-based results for policy making, not events. There will be accidents caused by systems that should make people safer, but these errors would be much lower than errors humans make. Once a system fails, we should not use that big headline to stop the technology.

General discussion among experts and participants

Mr Oliver Cast is a Professor of Transport Safety at Institute of Transport Studies from the University Leeds. Mr Cast mentioned that there was a general acceptance of the use of ISA by a random selection of drivers. Some who wanted to obey the speed limit, some neutral, and some not neutral.

Mr Geert Van Waeg represents the International Federation of Pedestrians, which fully supports the GSR, and does not understand the resistance against the ISA. Especially worrying is the misinformation given on ISA in the VUFO study. Mr Van Waeg commented that it is a shame as the conclusions of the VUFO study are in contradiction with the study itself. ISA changes the dynamics of how you drive a car. The system has proven to work and is mature. It is not 100 per cent perfect, but if we make it mandatory then the evolution and improvement will come even faster in both the infrastructure and the software itself.

Mr David Ward intervened in the general discussion by recalling having previously worked with FIA, and commented that there is a double standard about the robustness of systems. AEB does not work 100 per cent all the time. For instance, tires and different road conditions can affect the system's performance. Mr Ward insisted on the incoherence of having a requirement of 100 per cent effectiveness for a certain technology, but then not bother about the others. Mr Ward commented: "Try explaining to a full room of parents who have experienced fatal road crashes because of speeding that there is the technology available that could eliminate a significant proportion of speeding, but we are not implementing it because it is irritating a bunch of BMW drivers speeding through Munich." In conclusion, Mr Ward reminded the present stakeholders, that such decisions are penalising those less well-off who need this technology the most.

Mr Guido Gielen responded with a clear message: safety is the top priority. FIA fully supports the proposal of the Commission. With respect to Mr Ward, the VUFO study was prepared from the perspective of being neutral and having to find the literature in order to see where the state of play is. According to Mr Gielen, the FIA is against systems where the driver is misled. FIA is not for the time being in favour of making the system mandatory, but are following with interest its development.

Mr Antonio Avenoso reminded the workshop participants that the Intelligent Speed Assistance is a system that can be overridden, and that it is the sole responsibility of the driver to respect the speed limit.

Mr Mehdi Hocine, following his own driving experience with the SLI, indicates that an alarm sound does not effectively stop drivers from accidently riding over the speed limit.

Concluding remarks

Ms Roza THUN (MEP) thanked all participants to the workshop. The Chair indicated that the workshop leaves the participants with a lot of food for thought, with valuable material for reflection and for improvement of the legislative proposal from the European Commission. Ms Thun praised the richness of the content of presentations and of the discussion. Most importantly, Ms Thun was happy to see that everyone agrees on the main priority, which is road safety. She recommended more communication, and sharing of presentations and thoughts, and hoped that the stakeholders will continue to cooperate in this important area.

WORKSHOP PROGRAMME

Type-approval requirements for motor vehicles as regards their general safety and the protection of vehicle occupants and vulnerable road users

29 November 2018, 15.00 – 18.00

Chair: Ms Róża Thun (MEP)

Welcome and Introduction

15.10-15.25 *Data on road accidents and current state of motor vehicle safety*

Mr Antonio Avenoso, European Transport Safety Council

Mr David Ward, Secretary General, Global NCAP

Panel 1 – Event Data Recorder (EDR) and advanced drowsiness monitoring: functioning and privacy issues

15:25 – 15:35 **Dr Stefan R. Benz**, European Association of Automotive Suppliers
EDR and advanced drowsiness monitoring - functioning and data flow

15:35 - 15:45 **Prof. Dr Wojciech Wiewiórowski** European Data Protection Supervisor
Privacy assessment and normative proposals concerning data protection and privacy

Panel 2 – Intelligent Speed Assistance (ISA), Lane Keeping Assist System (LKAS) and Autonomous Emergency Braking (AEB) system: functioning and maturity of technology

15:45 – 15:55 **Mr Richard Cuerden - The Future of Transport (TRL)**
ISA technology, its effectiveness and impact on neighbouring technologies

15:55 – 16:05 **Mr Yonatan Shai Epstein - Intel (Mobileye)**
State of the art of the current generations of ISA, LKAS and AEB technology

Panel 3 – Direct Vision -How it works in practice

16:05 – 16:15 **Mr Will Norman - Officer of the Mayor of London**
Ms Alina Tuerk - Transport for London
Direct Vision Technology in the City of London

16:15 – 16:25 **Mr Samuel Kenny - Transport & Environment**
Direct and indirect driver vision from heavy good vehicles

Round table: General discussion with the European Commission, manufacturers, and stakeholders, with participation of:

Mr Mehdi Hocine, Deputy Head of Unit C4, DG GROW, European Commission

16:25 – 17:50 **Views from stakeholders on ISA and the General Safety Regulation**

Mr Matthias Maedge - International Road Union Permanent Delegation to the EU
Mr Ulrich Veh - European Automobile Manufacturer's Association
Mr Peter Kronberg - Volvo Group
Dr Bernd Gottselig - Automotive Safety and Advanced Regulations
Dr Gianluca Cerio - Teoresi SpA
Dr Andrea Segato - Teoresi SpA
Ms Fabienne Goyeneche - Michelin Europe
Mr Yomi Otubushin - 5G Automotive Association
Mr Guido Gielen - Fédération Internationale de l'Automobile
Mr Jeannot Mersch - European Federation of Road Traffic Victims
Mr Ceri Woolsgrove - European Cyclists Federation
Mr Fred Roeder - Consumer Choice Center

Conclusion and closing remarks

Ms Róża Thun (MEP)

PRESENTATIONS

Introduction and Opening Remarks on the General Safety Regulation by Antonio Avenoso and David Ward

Event Data Recorder (EDR) and advanced drowsiness monitoring: functioning and privacy issues by Dr Stefan Benz on Importance of the GSR

Event Data Recorder (EDR) and advanced drowsiness monitoring: functioning and privacy issues: Data Protection by Dr Wojciech R. Wiewiórowski

Functioning and maturity of such technologies as Intelligent Speed Assistance (ISA), Lane Keeping Assist System (LKAS) and Autonomous Emergency Braking (AEB) by Mr Richard Cuerden

Functioning and maturity of such technologies as Intelligent Speed Assistance (ISA), Lane Keeping Assist System (LKAS) and Autonomous Emergency Braking (AEB): Mr Yoni Epstein on State of the Art ISA, LKAS, and AEB Direct Vision: How it works in practice by Mr Will Norman and Ms Alina Tuerk

Direct Vision: How it works in practice by Mr Samuel Kennedy

ACCESS TO THE FULL CONTENT OF THE PRESENTATIONS CAN BE FOUND HERE:

http://www.europarl.europa.eu/committees/en/imco/events-workshops.html?id=20181115WKS02022

BIOGRAPHIES of SPEAKERS

Mr Antonio Avenoso

Mr Antonio Avenoso is the Executive Director of the European Transport Safety Council where he has been working since 2001. Within ETSC Mr Avenoso has managed several international research networks and road safety programmes. He has worked in the "Railway and Interoperability Unity" of the Directorate General for Energy and Transport of the European Commission. He holds an academic degree cum laude in Political Science from the University of Pavia and an M.Phil. in European Studies from the University of Cambridge.

Mr David Ward

Mr David Ward is Secretary General of the Global New Car Assessment Programme, which promotes independent consumer safety rating of motor vehicle and serves as a platform for co-operation among NCAPs worldwide. He is also Chairman of the Stop the Crash Partnership, a global initiative to promote increased use of crash avoidance technologies. Priory, Mr Ward was Director General of the FIA Foundation (2001-2013) and Secretary of the Commission for Global Road Safety (2006-2015). He was founding Board Member of the European New Car Assessment Programme, and Director General of the EU office of the international federation of automobile clubs (FIA). Besides road safety, Mr Ward was Chief Policy Adviser to the Leader of the Opposition, the late Rt. Hon. John Smith MP, and previously worked for the United Nations Children's Fund, and as a journalist.

Dr Stefan R. Benz

Dr Benz studied electrical and computer engineering at the University of Stuttgart, at Karlsruhe Institute of Technology, Germany, and at Oregon State University USA. Dr Benz has been working with Bosch since 2001. Today Senior Expert on automotive safety systems such as ABS, ESC, ADAS and automated driving in the Chassis Systems Control division of Bosch; main working topics include technical and political consulting for vehicle safety technologies.

Prof. Dr Wojciech Wiewiórowski

Dr Wojciech Wiewiórowski graduated from the Faculty of Law and Administration of the University of Gdańsk. He is currently the Assistant Supervisor at the EDPS for the period 2014-2019. In 2002, he began to work as lecturer at Gdańsk College of Administration, and since 2003, he was assistant Professor and head of Legal IT Department at the Faculty of Law and Administration of the University of Gdańsk. He worked as adviser in the field of e-government and information society for the Minister of Interior and Administration as well as Vice-president of the Regulatory Commission of the Polish Autocephalous Orthodox Church. In 2010 he was elected by Polish Parliament as Inspector General for the Protection of Personal Data (Polish Data Protection Commissioner) which he served by November 2014 being re-elected in 2014.

Mr Richard Cuerden

Mr Richard Cuerden works for Transport Research Laboratory, TRL, and is responsible for TRL's strategic research plan and the associated thought leadership investments and activities, ensuring technical quality of research outputs, supporting the academic development of staff and managing engagement with stakeholders on programmes of collaborative research.

Mr Yonatan Shai Epstein

Mr Yoni Epstein is currently responsible for ADAS Advanced Development activities and represents Mobileye in various regulatory frameworks.
Mr Epstein joined Mobileye in 2012, and in prior roles within Mobileye managed OEM production projects and led object detection and associated ADAS products (AEB & ACC) in Advanced Development.

Dr Will Norman

Dr Will Norman is London's first Walking and Cycling Commissioner, working to deliver the Mayor's pledges to make walking and cycling safer and easier in the capital. Dr Norman was previously Director of Global Partnerships at Nike. He spent more than three years working with not-for-profits, governments, UN agencies and European Institutions to tackle the global inactivity crisis, with a particular focus on getting children more active. Prior to working at Nike, Dr Norman was Director of Research at the Young Foundation and set up a successful social research consultancy. Dr Norman has a PhD from the London School of Economics.

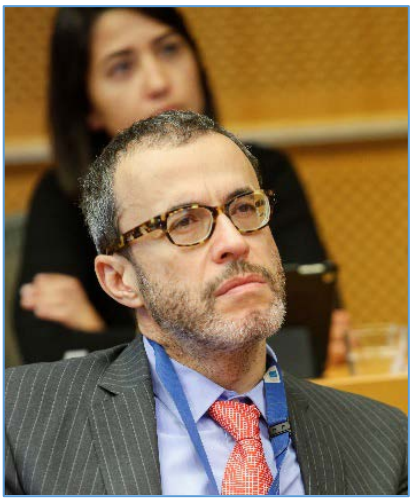
Ms Alina Tuerk

Ms Alina Tuerk is the Delivery Planning Manager for Transport for London. Ms Tuerk is a TPP (Transport Planning Professional) qualified Transport Planner with 10 year of experience across public and private sector. Alina currently manages the Roads & Freight Team in City Planning at Transport for London (TfL). Together with her team, Ms Tuerk is responsible for developing and managing a range of freight initiatives across London aimed at improving safety, reducing environmental impacts and ensuring provision for deliveries and servicing across transport planning projects. Prior to joining TfL, Ms Tuerk worked in consultancy on national and international projects with a focus on integrating walking and cycling into travel routines and urban environments.

Mr Samuel Kenny

Mr Samuel Kenny is currently a Freight Policy Officer for Transport & Environment. Transport & Environment's (T&E) mission is to promote, at EU and global level, a transport policy based on the principles of sustainable development. T&E represents 58 organisations from 26 countries across Europe. Mr Kenny joined Transport & Environment in 2015 to work on freight policy, as well as the EU budget.

Mr Mehdi Hocine



Mr Mehdi Hocine is Deputy Head of Unit Automotive and Mobility Industries at DG COMP, European Commission since 2017. Mr Hocine has spent more than 20 years at DG COMP at European Commission where he has been Deputy Head of Unit at State Aid and Industrial Restructuring (2006-2013) and principal administrator for State Aid Financial Services, Fiscal State Aid and State Aid Policy in the tears precedents. He holds a master in Economy and Finance at Institut d'Etudes politiques de Paris and a BA in Economics at Universite Nancy.

Mr Marc Billiet

Mr Marc Billiet currently leads the International Road Transport Union's road freight transport and environmental affairs in Europe. IRU is the world transport organisation. They lead solutions to help the world move better, supporting trade, economic growth, jobs, safety, the environment and communities.

Dr Ulrich Veh

Dr Ulrich Veh is the Safety Director of ACEA since October 2016. He holds a PHD whose thesis was about optimisation of development processes. Before joining ACEA, he spent 12 years at BMW AG in Munich where he was head of Vehicle Safety Strategy (2004-2010), Head of Passive Safety Integration i3 and i8 (2010-2014), Head of Rear Impact and Passive Safety Predevelopment (2014-2015) and Head of Vehicle Safety Integration – Large and Midsize Vehicles(2016). He also worked for MAN AG in Munich where he started his professional career as a trainee in 1998 before becoming Project Engineer for the Development of Driver's Cab (1998-2001) and Head of Strategies and Projects (2001-2003).

Mr Peter Kronberg

Mr Peter Kronberg is the Safety Director and safety spokesperson of the Volvo Group. In this role, he is responsible for directing the Volvo Group sustainability agenda relating to traffic and vehicle safety. The work involves determining how Volvo Group should use its technology leadership in active safety, automation and connectivity to address the global societal transport challenges, and maintaining an active dialogue with political, academic and industrial stakeholders, as well as forming international partnerships and projects. Mr Kronberg worked as project manager for international and national research projects as well as product development projects.

Dr Bernd Gottselig

Dr Bernd Gottselig studied Mechanical Engineering in Aachen and obtained his doctorate at the same university. He has worked at Ford Motor Company since 1989 with several positions in Quality Control, Manufacturing and Body Engineering, in both Germany and the UK.

He was a member of the vehicle recycling department of Ford of Europe and later, between 1995 and 1998, responsible for environmental strategies for Ford Motor Company in Dearborn (USA. Since March 2006, Dr Gottselig is Senior Manager Automotive Safety and Advanced Regulation.

Mr Gianluca Cerio

Mr Gianluca Cerio is a technology leader focusing on V2X, 5G and IoT for the Teoresi Group, a company with headquarters in Turin, Italy. Teoresi Group has been innovating on the fields of automotive, railway and industrial engineering, telecommunications and ICT systeMs. Today, Teoresi SpA, with Teoresi inc. in North America, Teoresi GmbH in Germany, and Teoresi SA in Switzerland is an international group operating in different technologies and markets. Mr Cerio holds a Master's degree in computer engineering and computer networks at Politecnico di Torino.

Mr Andrea Segato

Mr Andrea Segato is a market manager focusing on Vehicles Market development for the Teoresi Group, utilizing new technologies to open international opportunities with different customers, from innovative start-ups to worldwide enterprises. Co-Founder of Alto Sistemi, one of the participated companies of Teoresi Group, Mr Segato begins as a researcher for a satellite webcasting system, and, after years as a technician, he becomes a member of the management of the company. Mr Segato holds a Master's degree in computer engineering and computer networks at Politecnico di Torino.

Ms Fabienne Goyeneche

Ms Fabienne Goyeneche holds a Master degree in Public Affairs from Sciences Po (Paris) and a BA in Chinese language and civilization from Paris Diderot University. She started working with Michelin in China, before joining the Public Affairs Department, as a lobbyist both in Paris and in Brussels. She specializes in vehicle and tyre regulations, and in EU trade policy.

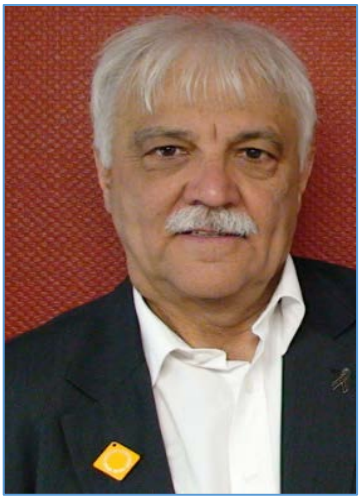
Dr Yomi Otubushin

Dr Yomi Otubushin was a researcher at the Loughborough Accident Research Unit where he helped to develop a standardised methodology for car accident reconstruction and performed analyses for vehicle manufacturers and government bodies. He joined the BMW Group in 1997 developing passive safety concepts specialising in pedestrian protection systems. He represented the European Industry at international level for the development of legislative and consumer pedestrian testing procedures. In March 2014, he moved to the BMW EU Representative Office where he is responsible for all technical dossiers being worked on by the EU Institutions.

Mr Guido Gielen

Mr Guido Gielen is an automotive engineer by training. Mr Gielen started working for FIA in January 2016 as technical director, and before that he worked for the European Commission in DG Enterprise & Industry.

Mr Jeannot Mersch



Mr Jeannot Mersch is a diploma sound engineer and was responsible for the audio production of Luxemburg's Philharmonic Orchestra from 1976 -2009.

He joined the board of the FEVR in 2004. In October 2009, he chooses to retire from his professional job to have so more time as volunteer for road safety and victim advocate. In October 2010, he was elected as the new president of FEVR AGM in Rome. In Luxemburg, he has been active in several ministerial working groups for road safety and is a passionate advocate for Vision Zero and the Safe System Approach.

Mr Ceri Woolsgrove

Mr Ceri Woolsgrove has been working for the European Cyclists' Federation for almost 8 years now in the field of road safety, new mobility services, and technical issues. He holds two Masters degrees, one politics and in international policy analysis, and has represented European transport companies in Brussels. In a previous life, he worked as an IT systems developer in the UK and Chain, working for a large back on their back office IT systems, and has been working on European vehicle safety for the past four years. The European Cyclists' Federation is an umbrella federation that represents 85 national cycling associations throughout the world, including all European countries.

Mr Frederik Roeder

Mr Frederik Roeder is a German Health Economist based in London, UK. Mr Roeder is Managing Director of the Consumer Choice Center and passionate about innovations that make consumers' lives more better and safer. He has been working in consumer and civil society advocacy for nearly eight years. Mr Roeder furthermore has experience in health and safety management and critical incident reporting system implementation.

This report summarises the discussion, which took place at the workshop on "Type-approval requirements for motor vehicles as regards their general safety and protection of vehicle occupants and vulnerable road users." Road Safety Regulation is a complex issue with the potential to decrease the number of fatalities across roads in Europe. With the aim of discussing the recent proposal of the European Commission on type-approval requirements for motor vehicles, the workshop was chaired by Ms Róża THUN (MEP), the Chair of Digital Single Market Working Group of IMCO Committee and the Rapporteur for the legislative file in the European Parliament

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