

Dear readers!

The ASECAP is the European umbrella organization for operators of tolled motorways. This year's ASECAP Road Safety Conference 2015 in Vienna dealt with numerous topics. We discussed and looked at road safety, new developments in the field of accident prevention and the ever-arising challenges as a result of mobility trends. It was an excellent opportunity for ASFINAG to showcase our active engagement in road safety initiatives and to simultaneously present the success of our own road safety program. In addition, all participants could share their experiences in this field with international partners and learn from each other based on best practice examples. We also want to express our sincere gratitude to the Federal Ministry of Transport, Innovation and Technology. We would not have been able to host this efficacious conference without the Ministry's support and guidance.

ASECAP's long-term and overall ambitious goal: "Vision-Zero" – which implies no more fatal accidents on European motorways. In order to achieve the goal of minimizing accidents, all European motorway operators need to work together. From a long-term point of view, safe roads do not only depend on highly developed infrastructure. They also depend on innovations originating within the car industry and, of course, on the drivers behind the steering wheels.

We are happy to present to you, in the form of this conference transcript, the most important results and keynote speeches of the eighth ASECAP Road Safety Conference, held on March 3rd, 2015 in Vienna.

We hope you will enjoy your reading experience.

Klaus Schierhackl CEO of ASFINAG Alois Schedl CEO of ASFINAG

Imprint

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"In the future accidents should not even be happening"

In order to prevent accidents in the future there are multiple approaches. Some of them are for example large-scale intelligent-safety-systems, which take over control in emergency situations or interconnected systems that connect vehicles, drivers and infrastructure. However, to succeed in this venture it is of importance that vehicle manufacturers, infrastructure operators and politicians cooperate closely.

he bad news: Around 1,23 million people die annually in car accidents. What is worse: Due to ever-continuously increasing world population, this number will most likely double by 2030. On European roads around 30.000 road fatalities occur. This number is comparatively low, when looking towards the Asian and African regions. Between 2001 and 2010, it was possible to cut the number of fatal accidents on European motorways in half. Unfortunately, while this is good news, it was not possible to reduce the severity of accidents. In 2011, around 120.000 people suffered severe injuries, which resulted in physical disabilities. Further, another 240.000 drivers and passengers were involved in serious accidents, but were ,lucky' enough to escape any permanent damages.

that the drivers behind the steering wheels need support. "I am sure drivers do not want

to hear this. But 93.5 percent of all accidents can be attributed to human error".

Outsmarting Human Errors

Seibert sees integrated vehicle safety systems as a key element in supporting drivers, and consequently as a way to reduce accidents. These intelligent safety systems operate in both, an active as well as a passive manner. They monitor the vehicle, driver behavior and

infrastructure. Throughout a continuous analysis of the driving environment the system would be able to actively intervene in the case of a critical situation. According to Seibert,

> actively, most times the system engages via targeted braking maneuvers.

> "A reduction of the overall speed is the most effective way to reduce the severity of accidents." Seibert counters critics, who remain skeptical towards intelligent safety systems that technological assistance is not designed to replace the driver and his/her driving skills. Rather they should be perceived as a supportive tool

to enhance road safety. Nevertheless, he admits to the implied difficulty of the balancing act

when it comes to technological support and intervention. In general, "systems should be user-friendly, and warning signals shall not annoy or distract drivers in any way".

Inclusive Cooperation

Not only Audi, but also Volvo, believes in "Vision Zero". For this reason, both companies research in the field of sensorcontrolled safety systems. which are designed to prevent accidents entirely. While Audi currently focuses its R&D efforts on the series production of autonomously driving vehicles, Volvo decided to take a slightly different approach. Mats Deleryd, Senior Vice-President for Quality, Safety and Environment at Volvo, sees high potential in the field of interconnectedness of vehicles. drivers and infrastructure. "Car-2Car and Car2Infrastructure



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Dominic Seibert,

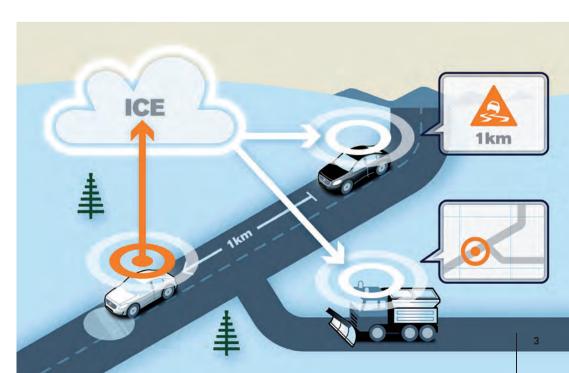
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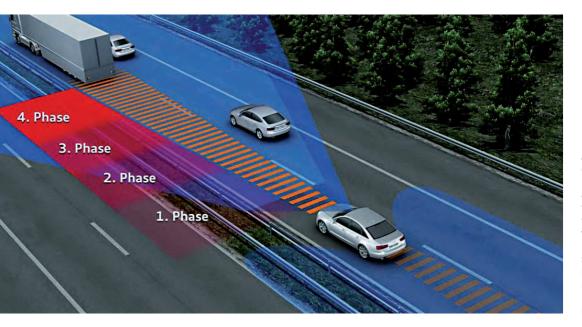
Audi AG

The goal: Preventing accidents entirely

As Dominic Seibert, Head of Development Vulnerable Road User Safety at Audi points out: "These numbers show clearly that in the future accidents should not even be happening." In order to avoid any 'critical road safety situations' he is sure

Interconnectedness increases road safety: Connected cars can exchange information and have the ability to warn each other, for example about black ice.





Audis integrated safety system operates in 4 phases: In phase 1, the driver is being warned by acoustic signals. In phase 2, the seat belt is automatically tightened and partial braking will be automatically triggered. In phase 3, the car is being slowed down with 50 % of its breaking force and automatically closes all windows. In phase 4, full emergency breaking is being initiated.

communication have the potential to not only reduce the number, but also the severity of accidents. However, this scenario can only become reality



"We will not be able to take advantage of our opportunities if we do not actively collaborate with infrastructure operators and politicians."

Mats Deleryd, Volvo Group

if infrastructure operators and politicians work closely together." Deleryd already points "first 011f successes in this venture" and refers to safety features that will be of a mandatory nature in all trucks, as at the latest by November 2015. "It will be mandatory for all trucks to be equip-

ped with either a lane departure warning system, an automatic emergency braking system or ESP. And this is definitely a step in the right direction."

Vision Zero

Already today Volvo is working on the next generation of censor-controlled safety systems for trucks. It is the company's intention to develop technology that has the potential to dissolve critical conditions during deliveries in city traffic. "More and more people are moving to metropolitan areas. It is obvious that this results in an increased demand for transportation and mobility, and consequently also in more traffic." For this reason, similar to Audi, Volvo wants to support drivers with safety systems that scan a driver's environment. In case a truck driver accidently overlooks a cyclist the truck would automatically trigger an emergency stop in order to prevent a collision (see picture, bottom right).

Anticipating change

Oliver Schmerold, CEO of ÖAMTC, the Austrian mobility club, points out "the danger of neglecting drivers over the course of these interconnectivity processes". According to a large-scale survey issued by ÖAMTC most drivers are "unable to anticipate and picture future progress". Therefore he is sure that it will be a necessity to prepare and educate drivers properly on technological developments. Nevertheless he states that it appears as if drivers are ready to embrace intelligent safety

Volvo's sensor-controlled security systems trigger an emergency stop in case a driver overlooks a cyclist systems. "Already today, eight out of ten drivers ask for automatic lighting assistants or

vehicles with emergency braking functions." Further, the survey revealed that around 60 percent of all drivers could imagine making use of autonomously driving cars, and 62 percent of all participants were willing to share personal data for the purpose of traffic control. Despite the fact that new technologies and

developments influence today's and tomorrow's mobility trends, individual mobility itself will have to remain fast, safe, affordable and comfortable in order to be of value to consumers.

Proactive approach

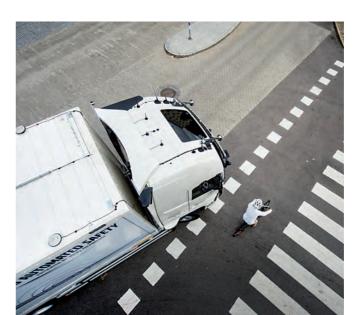
Seibert, Deleryd and Schmerold further agreed on the following



"Drivers are ready to embrace intelligent safety systems."
Oliver Schmerold, CEO of ÖAMTC

issue: With regard significantly reducing the number of accidents it will be pivotal to take an proactive approach which inclusively engages with the car industry, politicians, mobility clubs and road operators. Because only via close cooperation it will be "possible to reap all benefits that safety systems potentially could

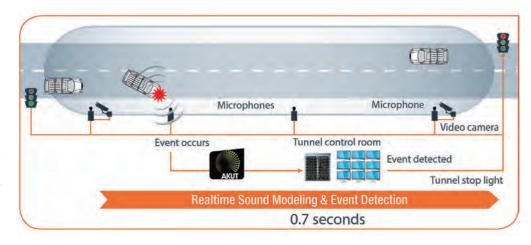
provide". Further all three stress the importance of harmonized laws and coordinated technical regulations, which lay the foundation for protecting human life on the roads.



The tunnel can hear whats happening

ASFINAG dubbed its new, and successful, security system 'Akut'. The testing started in 2010, and the system will be implemented in 30 tunnels over the next few years.

sually when people think of tunnel safety they automatically picture emergency communication stations, emergency exits, ventilation systems, vents in- and outside the tunnels or LED light signals. Although the use and technical refinements are continuously optimized, tunnel safety systems themselves have not changed much over the last 30+ years. However now, ASFINAG implemented 'Akut' - a novel safety system based on acoustic monitoring. So, what does this system do? Vehicles within a tunnel generate sounds. The Akut-system





"AKUT can detect every-

thing that is happening within the tunnel." Günter Rattei, Tunnel

British infrastructure operator

M6toll are assigned to the task of

setting up traffic management

systems in areas of roadside

Also Abertis in Spain puts

emphasis on employee aware-

ness. Mandatory process proto-

cols ensure that employees pay

increased attention to 'unsafe

Mandatory protocols

construction.

Management ASFINAG

detects via installed microphones acoustic anomalies inside a tunnel. These anomalies might originate from collisions, bursting tires, voices or other noise.

Information in real time

The detected anomalies are immediately localized and transferred in real time to the designated tunnel operators. The new system provides tunnel operators with the advantage of reacting within split seconds in case of potential safety hazards. The first Akut-system was installed in Kirchdorf (Styria) in 2010. Based upon successful testing trials, additional 30 tunnels in Austria will be equipped with the Akut-safety system over the following years.

Smart employees

Spanish Abertis and British M6toll put emphasis on employee training in order to prevent accidents.

e all know how technology, today and in the future, creates 'smarter' motorways. Some motorways automatically open up the emergency lane in case of high traffic volume or set new speed limits for designated lanes. But not only technology, but also employees at tolled motorway operators get smarter.

Tough Examination



Into the future

The pilot project ,Scoop@F' plans on connecting 3.000 vehicles with the surrounding infrastructure. But a mobile communication standard delays the realisation.

uy Fremont, project manager at the French 'Scoop@F' project, is convinced that with the project car manufactures would be able to create the car of the future already today.



"We are currently awaiting approval from the European Union." Guy Fremont, Scoop@F-Project

According to him it would be possible to anticipate and assess all technical details based upon information derived from 3.000 cars, which will be equipped with communication systems, the 5-year project duration and the integration of the "Corridor Project" (Rotterdam-Frankfurt-Vienna). With Scoop@F and the interconnected vehicles only those drivers who actually require information on construction sites and traffic congestions will actually receive them. The last obstacle to overcome: The mutually pre-set ITS-G5 communication standard between Scoop@F and the tolled motorway operators requires approval.

Customized automated enforcement systems

Currently we are confronted with increased freight traffic, heavy strain on motorways, growing public demand for safety and at the same time with limited public funds. The Kapsch TrafficCom automated enforcement systems might be able to conquer this noteworthy challenge.

Il over Austria it is possible to observe a steady increase in truck traffic, and also one can detect the heavy strain that is put on domestic motorways. Simultaneously local authorities are confronted with lacking funds. Therefore, they are not able to carry out appropriate control measures. Kapsch TrafficCom's 'Intelligent Transportation Systems' (short ITS) might be a potential solution. The system was designed to improve traffic flow, contribute to increased road safety, protect the environment and to relieve public authorities.

Increasing controls up to 90 percent

Up until now, most inspections were conducted by semi-automated systems. These systems allowed for some automated processes, but covered on average solely 2,13 percent of all passing trucks. In addition, the semi-automated systems are characterized by labor intensity and high costs. According to Linauer the new

automated enforcement systems are capable of checking up to 90 percent of all passing trucks. At the same time the costs per controlled trucks would decrease from currently 67 Euros to mere 26 Cents. In order to cater to the differing demands of authorities and governmental bodies Kapsch TrafficCom developed a modular system structure, which enables the company to cater to varying needs. Each customer can chose modules based upon his/her own requirements, ranging from High Speed Weigh-In-Motion, 3D-Profiling to traffic surveillance



"With our modular systems we are able to cater to all our customers' needs." Martin Linauer, Kapsch TrafficCom





The Tutor-system ensures better road safety on Italian motorways

What does the Tutor-system do? The system checks the average speed of road users without interfering into the flow of traffic. As a result, over longer distances drivers pursue a more attentive way of driving, and therefore the risk of accidents is diminished.

p until now – how did the Italians check the speed

of vehicles? Well, quite frankly they relied on the simple but steady technology of stationary radar devices. However, Italian legislators regulated by law that all stationary radar devices need to be signposted. Frequently, this resulted in rear-impact crashes as road users initiated full braking maneuvers.

Significantly fewer accidents

In his keynote speech Giuseppe Cossiga of the Italian Autostrada Tech explained that he recognized "the useful purpose of stationary radar systems only in and around roadside construction sites". That's why he perceives "the Tutor-system as a viable method when it comes to checking the average speed of vehicles". Implemented already in 2004, the system

measures the average speed of road users along certain

sections of the motorway via overhead checkpoints.



"Stationary radar devices are only useful along road construction sites."

Giuseppe Cossiga, Autostrade Tech Italy

Behavioral change

The sustainable result: On Italian motorways the Tutor-system lead to fewer accidents and encouraged drivers of more prudent driving behavior.



Smart inspections along main traveling routes

These results speak for themselves: Within the timeframe of 2004 to 2013 the number of traffic fatalities on the Lower Austrian road network has been cut in half. This was mainly accomplished through efficient traffic enforcement and vehicle inspections. Designated control posts, as for example at the motorway hub in Haag, are ideal locations for these checks.

o keep the roads and motorways in Austria's largest province safe, 475 employees of the local traffic police force inspected 145.000 travel-time logs and stopped 532.000 speeding drivers in 2014.

Reduced accidents

"It is the traffic police's main target to reduce the number of accidents", explains Thomas Mirwald, Head of the Lower Austrian Department of Transport of Hazardous Materials and Waste, at the eighth ASECAP Conference. To achieve this target the police follows its guiding principle, which stipulates increased road safety due to traffic controls and on the spot checks. "Systemic inspections as well as spot checks contribute sustainably to increased road safety." Among other locations, the checkpoint along motorway A1 near Haag is ideally suited for this venture.





"Our guiding principle: Increased road safety can be attained via more traffic controls."

Thomas Mirwald of the Lower Austria Police

Intelligent control hubs

So how do these controls and checkpoints work? Electronic overhead beams divide the vehicles on the motorway kilometers before the checkpoint. Later on, at the multi-purpose location the vehicles are systemically inspected. Further benefit: These designated locations enable the local authorities to fulfill all official acts and work quickly and in an efficient manner.

Genuine partnerships contribute to Italian motorway safety

Close cooperation and genuine partnerships between the Italian traffic police and the domestic motorway operators are the Italian answer to increased road safety. After all, all participants pursue the motto: same challenge – same mission – we all play together!

uring his keynote speech Paolo Cestra, the Italian Traffic Police Director, highlighted the importance of close cooperations between motorway operators and the traffic police force. But one might wonder, how did this concept for collaboration originate? A law passed back in 2003 as well as a follow-up law from October 2009 built the foundation for the sustainable cooperation with the 23 Italian motorway operators. What are these laws about? The rules stipulates the principle of shared responsibility, and hence mutual goals.

Shared responsibilities

The motorway operators take care of the facilities along Italian highways, the equipment of police vehicles, the surveillance of motorways and they also provide the social benefits for the traffic police force. Quid pro quo, the Italian traffic police is in charge of all enforcement, traffic lanes, and additional surveillance at toll booths, parking areas and rest stops. Further, it is their responsibility to be on location in case of accidents or traffic congestions. Together the mutual vision of an increased and overall sustainable safety level on



"Safety used to be a task of the State, but today we are working on it together." Paolo Cestra, Italian Traffic Police Director

all motorways has become reality. The results of this partnership do not need to be concealed: Among other initiatives, the Tutor-system for example, helped to reduce the number of overall traffic accidents on Italian motorways by 51 percent.



What are the future challenges



all parties: politicians, the police, infrastructure operators and vehicle manufacturers. We are happy and proud at the same time to benefit from close collaborations with the Austrian Ministries, and events such as the ASECAP conference also show the importance of initiatives on a European level. Despite an increased volume of traffic on European motorways I am personally convinced that we will accomplish our target of Vision Zero in the near future. Continuous advances in intelligent driver assistance technology also support this notion. Further, I need to stress the importance of informing road users. Hereby I see a necessity in developing harmonized and comprehensive valuation classes, which support investment decisions. These valuations classes do not only provide value in the decision-making process, but are of utmost importance in order to advance our quest of Vision Zero in today's highly interconnected world.

Klaus Schierhackl, CEO of ASFINAG Know-how Think Tanks:

We have to be emphatic and aware of the fact that every accident is a traumatizing event to all people involved. At the same time each accident results in massive costs for a national economy. Thus we all benefit from the conditional safety.

economy. Thus we all benefit from road safety. In Norway, we operate over 1.000 tunnels, and frankly, we faced numerous challenges when it came to the implementation process of the tunnel directive. The current lack of cooperation among politicians, infrastructure operators and members of the automotive industry hampers progress. For us, and others, it would have been easier to implement the tunnel directive, and in the future it will be easier to work towards Vision Zero if there are signs of better cooperation. I call on all stakeholders involved and especially the European Commis-

sion to pool know-how. If there is a better way

we do need to pursue it together!Øyvind Halleraker, ASECAP President

on country roads, and therefore, from a socioeconomic perspective, it would be wise to expand the application of this successful systems. For this reason, it is necessary for us to overcome the current principle of political subsidiarity. We need to think more with a European mindset. Only then we will be able to minimize the risk for all road users.

European countries struggle with the

implementation of this directive. Further,

accidents' within the European Community.

At this point we are lacking the ability to

compare developments among member

countries. What is more, presently most

traffic management safety systems are

implemented primarily on motorways.

However, two thirds of all accidents happen

I want to emphasize the importance of

finding a mutual definition of 'severe

Eva-Maria Eichinger-Vill, Managing Director at the Austrian Traffic Safety Association. Head of Technology and Road Safety Departement at the Federal Ministry for Transport, Innovation and Technologie

on a European level?



toll enabling the implementation of highest

safety standards. Needless to say that road

safety is the result of the efficient and con-

safety requires acting on the three pillars

alika Seddi, Director of International Affairs – ASFA, and Chairwoman of ASECAP

of this road safety triangle.

COPER II

stant interaction between the infrastructure, the vehicle and the driver. Increasing road

Attila Eordogh, European Commission, **Road Safety Unit**

network. Let us share our insights and

knowledge, so we can all become

ambassadors of road safety.

«Together we are road safety!»

The 8th "Road safety and mobility for the future"-Conference in Vienna established itself as a success. We asked our international audience and participants about their opinions: What topics were of interest to them? Where do they see improvement opportunities when it comes to road safety? What could be of importance in the future?



While designing, constructing and maintaining the roads we must not forget about the most important thing: Roads are designed for people and their safety. Therefore this should be our priority. Such meeting as this one made me realize how much is still left to be done in this field. Representatives of ASFINAG provided us with a well-organized ASECAP Safety Day in their noble city of Vienna. They have created high expectations to be followed. I am looking forward to meeting you all next year in Poland. Michal Pabich, Senior Specialist on Road Safety and Motorway Maintenance, Autostrada Wielkopolska Poland.

«Human limitations.»

As the participating experts showed, in order to achieve the desired success it is necessary to work in the future with a systemic approach that takes human limitations, in terms of road safety work, into account.

Bernhard Lautner, Traffic Management and Road Safety, ASFINAG SERVICE GmbH



«Sustainable development.»

Road safety often is seen as the capability of vehicles. That does not cover the topic. Road Safety is a complex melange between vehicles, infrastructure, good information, and the human being. Innovative technologies and intelligent systems observe traffic, contribute very efficiently to improve road safety: information on accidents, congestion, or wrong way driving; speed, overtaking or red light offenses; just to name a few. In close cooperation with Authorities, Infrastructure Operators, Concessionaires, and safety research bodies in Austria and on European level we are very active to develop and implement sustainable and intelligent systems in order to reduce accidents, resulting in less injuries and fatalities on our roads. Josef A. Czako, Vice President, International Business Development, Kapsch TrafficCom



«Standardized rules.»

In general, it is very important how the funding of road safety projects is arranged. Some countries finance their projects by using money that has been collected via speeding fines, others through stationary radar devices. On the other hand, some countries do not have any funds readily available at all for these projects. For this reason, I think it is important to have uniform rules for all EU countries when it comes to the funding of safety projects. Ulrich Zorin, Head of Department **Traffic and Traffic Safety** Management, DARS, Slovenia



In the venture of increasing road safety we shall not neglect to maintain and respect our citizens' rights. The new developments presented at this conference already take many different perspectives into account. Modern technological solutions have the ability to optimize traffic and road checks, and to enhance driver safety. At the same time it is important to focus on communication. We have to raise awareness in order for people to have a better understanding of potential safety hazards. Karin Schranz, Departement II Transport Services of the Austrian Federal Ministry of Interior.





«Tolls finance safety.»

All these innovations, applications, equipment and technologies implemented on our motorways to improve safety are only possible because of the collection of tolls. Earmaked tolls are the most effective way to guarantee road safety. Toll regimes allow a constant and sustainable flow of resources to road safety. This fact is not assured in other road financing schemes where a lack of public funds has created significant maintenance deficits in many countries. It is our responsibility, as toll operators, to prioritize road safety and to provide our customers with concrete returns (as for example better safety) on the tolls they had paid.

> Bruno de la Fuente Bitaine, Director de Concesiones, SEOPAN

«Sharing knowledge.»

The European Road Safety Charter logo says "Together we are road safety" and I fully agree with this statement. Indeed, road safety has to be the priority of all the road transportation stakeholders. One of the several added values of being an ASECAP member is to share knowledge, expertise and best practices among the National tolled motorways' companies in each of the ASECAP Countries. With reference to road safety issues, in COPER II we have started a meaningful comparative benchmarking analysis of many operational and management aspects related to road safety with the aim of always improving the safety performances, the standards and the quality of the services offered to the users along our tolled road network.

Emanuela Stocchi, Director of International Affairs at AISCAT and Vice-Chairwoman of the ASECAP COPER II





