Press Release

Vienna, 24 February 2020

PROTECTING VULNERABLE ROAD USERS AND PREVENTING ACCIDENTS

AIT road safety research: Using a preventive approach to reduce the number of accidents

Vienna (AIT): 410 people were involved in fatal accidents on Austria's roads in 2019, according to the preliminary balance sheet of the Ministry of the Interior. This is one more fatality than in 2018, which, however, recorded the lowest number of road deaths in absolute terms since records began. After a continuous downward trend in the number of victims over the last two decades, there now appears to be stagnation. Particularly worrying: the number of children killed has risen from three in 2018 to 16 in the previous year, the VCÖ said in a recent release. The number of fatal pedestrian accidents has also risen from 47 to 68, with around half of the fatalities being senior citizens.

The Austrian Road Safety Programme 2011 to 2020 aims to reduce the number of victims to a maximum of 311 in 2020. However, the first figures for 2020 published by the BMI show a significant year-on-year increase in fatalities - so there is an urgent need for action to stop this negative trend.

Research in the service of road safety

Research and innovation can make a decisive contribution to increasing road safety and preventing accidents. At the AIT Center for Mobility Systems, researchers are working intensively on the question of how the transport infrastructure can contribute to increasing safety on Austria's roads. For example, new analysis and simulation tools are being developed that are able to combine road condition data and routing parameters with accident data to create a reliable risk assessment for existing and planned roads. The measurement and video data and risk models generated in this way form the basis for road safety analyses of unprecedented accuracy and quality. With this data, roads are modelled virtually and realistically so that complex relationships between road and vehicle can be simulated and examined.

A fleet of measurement vehicles, unique in Europe, enables innovative vehicle dynamics and infrastructure measurements to be carried out. The rolling laboratories - measurement vehicles fully equipped with sensors, such as trucks, cars and motorbikes - are reliably in use both for measurements of individual sections and for the risk assessment of entire road networks.

The concrete solutions and tools developed by the AIT road safety team are available to road maintenance authorities - for example, to increase pedestrian safety or reduce the risk of accidents when riding a motorbike.

The Mobility Observation Box: making safety routes safer

Actually, pedestrians enjoy "increased protection" on unregulated crossings compared to flowing traffic. However, the extent to which this is actually the case depends to a large extent on the road infrastructure - under certain circumstances, a safety path can itself become a "safety risk".

The AIT Mobility Observation Box was developed to create targeted improvement measures in road traffic by means of intelligent, automated traffic conflict analyses and to be able to start where the risk for pedestrians is highest.

However, the box can also be used in the planning of new protective paths: By collecting data in the run-up to construction, it is possible to determine where a zebra crossing should be positioned in a targeted and safe manner based on current pedestrian crossings, thus making a significant contribution to accident prevention. Road infrastructure operators are thus provided with a tool that can actually help to prevent accidents at zebra crossings and thus save human lives. In this way, the Mobility Observation Box can make a significant contribution to turning unregulated road crossings into real safety crossings.

The Motorcycle Probe Vehicle ("MoProVe"): Evaluation of motorbike safety

The "MoProVe" was developed to better understand the causes of motorbike accidents and the interaction between road and motorbike. In cooperation with the Vienna University of Technology, a road legal KTM 1290 Super Adventure was converted into a high-performance measurement vehicle, including a camera system, steering angle sensors, accelerometers, a CAN bus reader and a dGPS positioning system. The MoProVe is available for road safety tests of motorbike routes. It enables a driving dynamics analysis based on the respective driving behaviour and the interaction with the road infrastructure. The results show road sections that are particularly risky for motorcyclists. In addition, the insights gained in this way can be compared with the data collected by means of measuring cars (AIT RoadLab) or measuring trucks (AIT RoadSTAR) and thus make a decisive contribution to increasing road safety. The aim is to prevent accidents before they happen. The evaluation of risk potential plays a crucial role in identifying effective preventive measures.

Peter Saleh, road safety expert at the AIT Center for Mobility Systems: "Our claim is to make safety objectively measurable. We pursue a preventive approach and thus want to make a decisive contribution to preventing accidents. Our goal is to provide road maintenance authorities with the precise information they need to mitigate danger spots efficiently, cost-effectively and sustainably".

Further information about the Center for Mobility Systems: https://www.ait.ac.at/mobilitysystems/

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