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**PROTECTOR****PREVENTIVE SAFETY FOR UNPROTECTED ROAD USERS**

The analysis of the accident figures in Europe reports a huge number of collisions between pedestrians and vehicles. These collisions make up about 12% of the total accidents and about 15% of the total number of fatalities. The sum of killed pedestrians and the number of dead bicyclists and motorbikers (6% and 5% respectively) surpasses the ratio of the total number of dead and injured traffic participants.

Starting from this scenario, PROTECTOR's main objective is to improve the safety of vulnerable traffic participants in urban and rural areas. This shall be done by integrating a driver assistance system into the vehicle. Based on onboard sensors like laser scanner, microwave radar and computer vision technologies or with co-operative communication devices, the assistance system shall support the driver in traffic scenarios which overtax him personally. The development, evaluation and validation of the autonomous and/or co-operative detection means and its testing in real environment or in a test site for the most critical scenarios is the operative objective of the project, both on passenger car and commercial vehicle level.

To achieve the project's aim, PROTECTOR will adopt the recommended phases of the RTD&D projects: The project starts with the analysis of the application concept and related user needs requirements. From the results obtained, we determine the system requirements in terms of sensors and system architecture. The next step comprises the building of the demonstrators and their validation in a suitable test site. The last phase will concern the exploitation of the results with regard to ISO standard recommendations, system concept, architecture, safety, dependability and legal issues, including a risk analysis. The project phases in PROTECTOR are mapped onto four technical work packages, which will be supported by an organizational work package covering the operational project management. Our focus in the PROTECTOR project is set on system requirements as well as on system and sensor validation in a suitable test site.

The integration of a driver assistance system to protect vulnerable traffic participants leads to various useful effects. The individual effect for the driver consists in being relieved in complicated traffic situations. For example, if the driver in a convoy wants to turn off to the right he is able to fully concentrate on the vehicle in front of him, while the right side space is observed automatically. For the weaker traffic participants the extensive spread of a protector system would mean better protection in critical scenarios and a lower injury risk. The economical effect consists in a decreasing of the accident-numbers and thus the national economic total damage caused by these accidents is being reduced, too. This finally leads to a decrease of the insurance premiums. The social effect is a better mutual

acceptance of unprotected pedestrians and drivers of vehicles, especially in urban areas. Technical advances alone are however not sufficient to shield the pedestrians from being injured in road traffic.

Over and above that road safety training is needed to sensitize both parties for the dangers of road traffic.

Project Partners:

Centro Ricerche Fiat S.C.p.A, -DaimlerChrysler AG, MAN Nutzfahrzeuge AG, IBEO Lasertechnik Hipp KG, SIEMENS, TÜV Kraftfahrt GmbH, Università di Pavia, Institut für Kraftfahrzeuge Aachen (ika), Centro Studi sui Sistemi di Trasporto, Israel Aircraft Industries - TAMAN, RAMOT (Tel Aviv) University Authority for Applied Research and Industrial Development Ltd.

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