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Safety first – Volkswagen accident research provides important insights for technical development department

- **Minimise the risk of accidents on the road with active safety**
- **Automatic braking systems support the driver**
- **Ambient traffic monitoring system "Front Assist" detects critical distance situations thanks to sensors**

Wolfsburg, 19 December 2016 – about 44 million cars are registered in Germany, and the figure is rising. With more motorists, the risk of accidents increases. For nearly two decades Volkswagen accident research has been working closely alongside the engineers and developers at Volkswagen to sustainably reduce the risk of accidents, providing crucial information for the development of new assistance systems.

24 hours a day, 365 days a year – that's accident research at Volkswagen. Department head Ralf Tenzer and his eight-member team work tirelessly to give the engineers and developers at Volkswagen assistance for their work. To that end, he and his colleagues analyse around 120 accidents every year – right there at the scene. And not only on the streets around Wolfsburg. Accident research now covers all of the state of Niedersachsen as well as other states.

"Every accident is evaluated in detail. The federal statistics that summarise accidents and injuries are not enough to be able to do this", says Ralf Tenzer. If a current Volkswagen brand model is involved in an accident, the investigators at Volkswagen use cameras and measuring equipment to document a wide range of details in the shortest possible time, such as the damage to the vehicles, their location and braking distances.

The most modern technology is used: aerial photos are taken for an overall view using a drone. A laser mounted on the accident research vehicle scans the surroundings in 3D by driving slowly past. The expert team includes a doctor. The doctor's task is to clarify how injuries to the occupants came about. The doctor compares anonymized patient data, collected from the treating hospitals by the Hannover Medical School as a cooperation partner, with the damage in and to the vehicles. From all this data, the researchers create a 3D reconstruction on the computer using special software. In the end this is so detailed that the accident investigators can specify fairly closely which direction and at what speed the drivers steered their cars immediately before the collision, and which systems (e.g. ESC) actively intervened.

The expert at the launch of the Emergency Assist in the current Passat made it clear how closely the accident research collaborates with the technical development department: "If the system detects that the driver is no longer able to control the car, Emergency Assist takes over the steering and brings the car to a halt", said the chief accident researcher. Tenzer and his colleagues can use their accident data to demonstrate that a controlled stop in the traffic lane is far less dangerous than a driverless car that, for example, veers into oncoming traffic.

Accident research has also made its contribution to the development of systems for pedestrian protection. According to statistical surveys 75 per cent of all road accidents occur at a speed below 25 km/h. City Emergency Braking, which depending on the vehicle is included in the ambient traffic monitoring system "Front Assist", backs the driver up at relatively low speeds. If an obstacle is overlooked in city traffic at up to 30 km/h, the radar-based system recognises the danger and automatically brakes. Ideally, rear-end collisions can be avoided altogether. A study by the Euro NCAP and NCAP of Australia found that by incorporating Autonomous Emergency Braking (AEB), 38 per cent of rear-end collisions of this kind can be prevented.

"In case of accidents at speeds below 30 km/h, whiplash is the most common type of injury", says Tenzer. "It is rarely life threatening, but a serious injury, and above all it can be prevented." Front Assist is available in many Volkswagen models, for example, starting in the Golf as standard from the Comfortline equipment version upwards.

Active safety features, which along with brake assist include systems such as Electronic Stability Control (ESC), combined with passive safety equipment (including seat belts, air bags, deformation-resistant passenger cell) provide maximum protection for all vehicle occupants and other road users. "Our goal is to develop a safe and comfortable car for all. It is only possible to increase security effectively and efficiently with the correct interaction of the various components", says Tenzer.

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