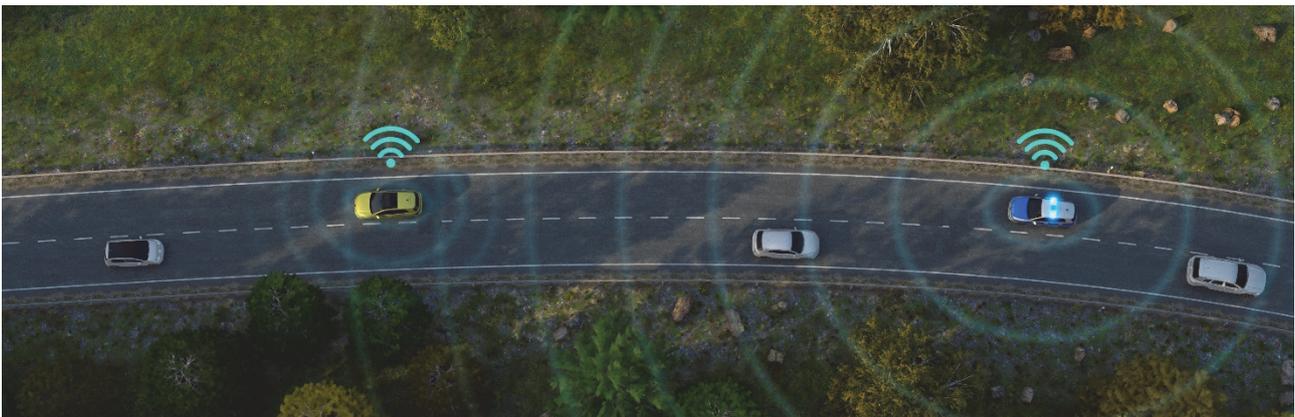


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Volkswagen Local Hazard Warning



Volkswagen Local Hazard Warning is a system that uses short-range communication between cars, and between a car and its surroundings, to give drivers early warning of safety hazards. For example, a car equipped with Local Hazard Warning might issue a warning to other vehicles if it had broken down in the middle of a carriageway or had been involved in a collision. Similarly, emergency vehicles equipped with such a system might send a signal to nearby vehicles to warn them of their presence, or temporary roadwork barriers could issue such warnings. As well as transmitting such warnings, cars equipped with Local Hazard Warning can also receive these signals and use them to alert the driver to the danger. The warnings that can be issued and received are:

- Safety System active in vehicle ahead, e.g., Emergency Electronic Brake Light (EEBL), Automatic Emergency Break (AEB) or reversible occupant restraint system intervention
- Stationary Vehicle
- Broken-Down Vehicle
- Accident
- End of Traffic Jam
- Roadworks
- Stationary Emergency Vehicle
- Dynamic Emergency Vehicle

Signals to the driver start as information if the situation is not critical, depending on the nature of the event and/or the distance to it. If the distance decreases and the situation becomes critical, the information is replaced by a warning in most cases. Critical events can also directly generate a warning without prior information.

Local Hazard Warning uses an automotive, optimized variant of WLAN technology known as "ETSI ITS-G5" which operates in an allocated and protected frequency range. The direct vehicle-to car/infrastructure communication means that information and warnings are always available to those cars equipped with the system as it does not rely on a phone network.

SAFETY BENEFIT

The benefits of a system like Volkswagen's Local Hazard Warning, using car-to-car/infrastructure communication, depends critically on the number of cars which are equipped with it or with a compatible system. Volkswagen will equip future models with the system as standard, representing a large number of vehicles. Nevertheless, it will take time to become commonplace in the vehicle fleet as the average age of vehicles driven in Europe is more than eleven years. In the meantime, it is difficult to quantify the safety benefit. It is expected to be disproportionate to the numbers of cars equipped with the system, as the prompt reaction of one driver has positive knock-on effects on others.

HOW HAS IT BEEN ASSESSED

ADAC tested the system in Germany in a variety of scenarios including, for example, a car broken down at the side of the road behind a corner. In all cases, the system issued correct and timely information to a receiving vehicle, and warnings where appropriate.

SYSTEM LIMITATIONS

Warnings are issued to the driver only when the speed of the vehicle is above 80 km/h. This addresses the situations where most serious accidents happen i.e. on rural roads and motorways, where speeds tend to be higher. In urban environments, driver attention is generally high and the higher traffic density provides earlier warning of hazards. The system is not switched on at vehicle delivery, in accordance with the GDPR (General Data Protection Regulation), and the customer must activate it by accepting the data protection agreement. Thereafter the system remains on by default, although it can be turned off by the driver.



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