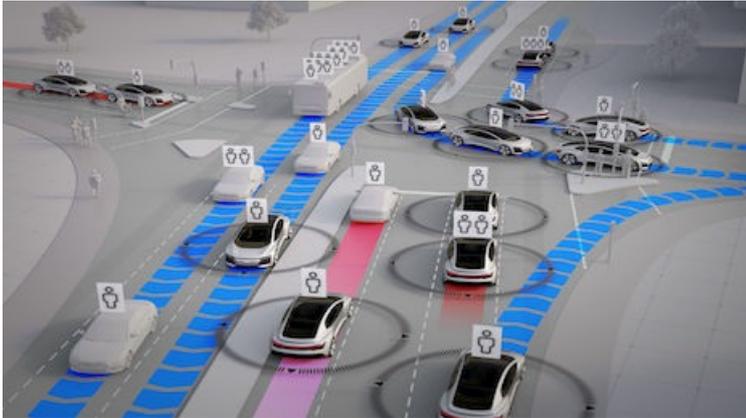


AUTOMOTIVE

Audi improves warning system to boost driver safety

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Audi's car-to-X system was first implemented in 2017 to help drivers alert one another to inclement weather conditions, accidents, et cetera. Image courtesy of Audi

By LUXURY DAILY NEWS SERVICE

German automaker Audi is upgrading its car-to-X system to offer consumers real-time updates and warnings regarding slippery and challenging conditions.

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Audi's car-to-X service "Local Hazard Information" (LHI) will now be using a car-to-cloud application that can detect the tiniest changes in road surfaces, upload data to the cloud for processing and then warn upcoming drivers of road ice or disparate slippery driving conditions. The automaker is taking the next step in its offerings by improving the service with high-precision swarm data to make the driving condition warnings even faster and more precise.

Upgraded car-to-X system

Audi first developed its car-to-X technology in 2017, enabling Audi drivers to warn each other about accidents, broken down vehicles, traffic jams, road ice and limited visibility. The technology analyzes various data for Local Hazard Information (LHI), including activation of Electronic Stabilization Control (ESC), rain and light sensors, windscreen wipers, headlights, emergency calls and airbag triggers.

The German automaker is enhancing its car-to-X technology, offering improvements that emit quicker and more precise real-time warnings to its consumers.



Around 1.7 million cars in the Audi group make up the swarm intelligence. Image credit: Audi

Audi is the first manufacturer to use a patented solution from Swedish company Nira Dynamics AB for this purpose. The two companies adapted this solution as a basis to develop the enhanced hazard alerts together with the Car.Software organization and Here Technologies.

The updated application can detect the tiniest changes in road surface adhesion. About 1.7 million cars in the Audi group make up the swarm intelligence.

While operating, the system can estimate the coefficient of friction between the vehicle's tires and the road surface based on a wheel slip, using chassis signals such as wheel speed and acceleration values. The sensor data is anonymized within the car and when transmitted to the Nira Dynamics AB cloud.

The aggregated data from several vehicles is then combined with metadata including current and historical weather information and then transmitted by the Nira cloud to the service provider, Here Technologies.

Here servers then send warning information to the cars that are in or en route to areas with inclement conditions. The vehicle driver then sees a warning in the Audi virtual cockpit or on the head-up display.

The Car. Software organization, a company of the Volkswagen Group, took the lead on this development, aiming to benefit the greatest number of drivers with these new safety advantages.

"The project for improved hazard information is a good example of the great potential of cross-brand software development," said Thomas Miller, head of Advanced Driving Assistance Systems ADAS & Automated Driving AD at the Car.Software organization, in a statement.

"Together with other Group brands and our strategic partners, we were able to develop a digital service within a few months while making use of our own software skills and economies of scale," he said. "The improved hazard information service is just the beginning; we see wide-ranging potential for the future."

More automakers are using cloud technology and artificial intelligence to improve its safety pedigrees.

Last year, British automaker Jaguar Land Rover developed "contactless touchscreen" technology in a bid to improve vehicle safety as well as fight bacteria.

Developed with the help of the University of Cambridge, this patented "predictive touch" technology uses artificial intelligence and sensors to anticipate a driver's intended movements on an infotainment system without touch. This is the automaker's latest innovation as part of its Destination Zero vision ([see story](#)).