DTN Supports Automotive Sector in Development of Self-Driving Cars

Automated driving needs detailed weather information

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The race is on. Automotive and tech industries alike are fully committed to delivering self-driving cars. Vehicles with 'limited autonomy' – driving themselves under certain conditions – should be on all our roads within the next five years.

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What they were up against.

A completely autonomous car, able to drive anywhere, at any time, with human input limited to just telling it where to go, remains a more distant goal. To make that happen, cars will need to know exactly where they are, with far greater precision than is currently possible with technology like GPS. They need new maps that are far more accurate than anything you could buy at the gas station. And it requires more real-time information on road and weather conditions.

Carmakers like Volkswagen, Audi, Daimler, Volvo, and Nissan are all developing solutions to incorporate detailed weather information in their new car systems. Today the more advanced multimedia in-car information systems can already show local weather, expected rain showers or areas with potentially hazardous conditions, like black ice or heavy fog.

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Nice to have or need to have

Such weather information is a luxury for many drivers. It's nice to have, but we can get by without it. But this information is absolutely crucial to a driverless car. Knowing the exact road conditions is essential for all the complex systems running these cars.

For human drivers, the mix of winter conditions affects how well we can see, and the way our vehicles handle the road. The same is true for self-driving cars. The ultimate goal for all fully self-driving vehicles is to operate safely and smoothly in all kinds of environments – not just the fairest of weathers.

Rain, sleet and snow are challenging enough for human drivers. Bad weather conditions pose an extra level of difficulty for those developing self-driving cars. These vehicles depend on cameras and sensors to 'see' the road and make the correct decisions at a hundred kilometers per hour.

Autonomous vehicles use a series of redundant systems to navigate roadways. Sensors, cameras, mapping programs, weather and road information, all come together to deliver the safest possible drive. These redundancies are key: if the car can receive early warning on ice-slicked roads, through its sensor suite, through vehicle-to-vehicle or vehicle-to-infrastructure communications, delivering localized weather data, it can activate the appropriate electronic systems to react exactly the right way.

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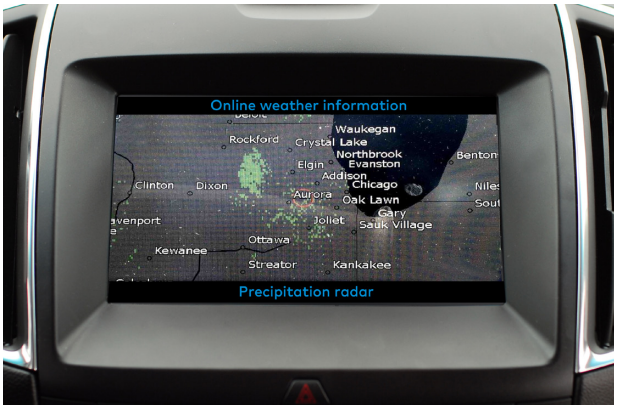

Bad weather: the real challenge

Autonomous technology developers know how to make a car drive itself. The real challenge is making the car navigate through suddenly-changing road and weather conditions.

Particularly in situations with heavy snowfall, self-driving car sensors and cameras can't visualize the street's markers and lane dividers. That's why automakers are trying to create systems capable of collecting all the necessary data to operate autonomous vehicles safely in bad weather.

DTN, already the preferred supplier to numerous vehicle manufacturers for their in-car multimedia systems, is working closely with some of the world's most prestigious car brands to come up with in-car systems letting the vehicle anticipate and handle even the most severe and most rapidly-changing road conditions.

It's a fast-growing market and DTN is participating proudly in developing the autonomous driving solutions that will power tomorrow's cars.

Some car manufacturers are already delivering systems to help drivers navigate away from rain and hail and towards blue skies and sunshine, if the driver decides to follow the directions.

But driverless cars won't have that choice. They will rely fully on detailed, accurate and real-time road and weather information to become more than just fair-weather friends. And it's up to DTN to make sure they can rely on the best possible weather data available.

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