IBM labs eye giving cars 'reflexes'

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IBM researchers are looking into ways to give cars “reflexes” that would reduce traffic congestion and help prevent accidents. The scientists are exploring technology that would let vehicles exchange information with each other and highway infrastructure, take corrective action and provide feedback to drivers.

Today IBM announced a research initiative into equipping cars with technologies that can help reduce traffic congestion and prevent accidents.

IBM Researchers are conducting pioneering research into active safety and driver assist technologies in vehicles that exchange information with each other and with the road infrastructure, take corrective action where appropriate, and provide essential feedback to the drivers to help avoid dangerous situations.

Much like automatic transmission, anti-lock brakes, and cruise control, advanced driver assist technologies will relieve the driver from having to perform some manual operations in complex driving situations. An intelligent vehicle receiving information from its environment will be able to react to the rapidly changing situation on the road as if it had "reflexes."

Such electronic "reflexes" are faster than human actions and will allow vehicles to be closer to one another on the road, improving the flow without compromising safety. Humans, however, will remain better than machines at analyzing complex situations. "The idea is that the driver

always stays in control, but gets additional information to help make judgment calls," says Dan Chevion, initiator of the exploratory research project at the IBM Haifa Research Lab.

When a car takes corrective action the driver may get feedback, such as a change in accelerator pedal pressure or a force feedback from the steering wheel. The driver may also get audio and visual warnings. In addition, vehicles will communicate with each other and with the road infrastructure, disseminating information about their positions and actions and about the changing environment, such as a slippery road or a sudden traffic pileup.

"With half a billion cars on the road in the western world alone, there's a great opportunity to better regulate traffic flow and reduce congestion," notes Chevion.

In the US, car accidents cost $230 billion annually and in Europe the cost is 160 billion euros each year, not to mention the tragedy of hospitalization and deaths. Departments of transportation worldwide have an interest in changing those statistics.

Source: IBM