Connected Cars in the Future May Sense if You Are Hungry, Tired or Aggressive

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By Lynn Walford

Connected cars are not just connecting to smartphones, in the future connected cars could connect to biomedical devices to monitor body functions or interpret voice qualities. Software may monitor sleep patterns, exercise and even angry, aggressive behavior.

Automotive IT News talked with Dr. Ben Miners, vice president innovation, Intelligent Mechatronic Systems (IMS), a Waterloo, Ontario-based company that makes the IMS DriveSync connected car platform that is used by insurance carriers, departments of transportation, and fleet managers.

The company has a working concept vehicle, the IMS Connected Car that demonstrates possible future connected car technology in a Fiat 500.

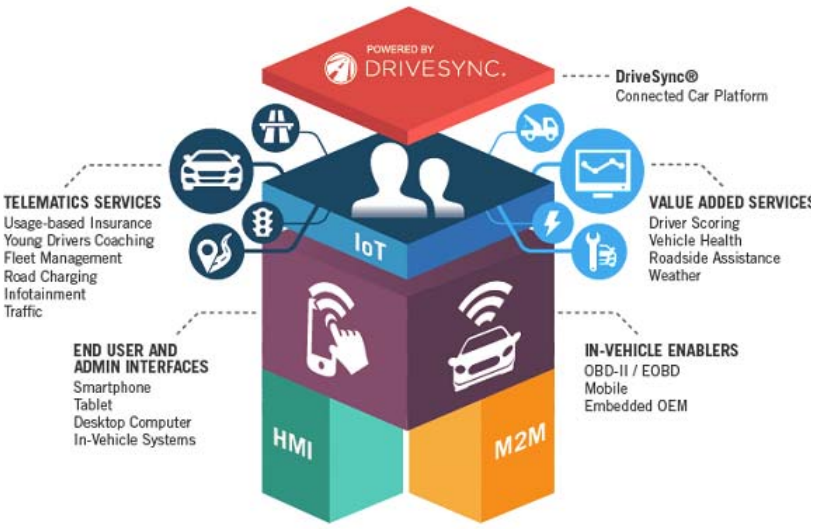
The connected system senses if a driver is hungry by integrating data from a wearable device such as non-invasive optical scanner or contact lenses that detect glucose levels. The devices communicate to the car via Bluetooth, says Dr. Miners.

When the glucose level is low the driver receives a verbal audio suggestion, "Are you sure you are ready to drive? You may want to stop, get something to eat, and feel refreshed."

“The glucose level feature can be helpful to diabetics, long haul truck drivers or any driver, depending on their willingness to be monitored,” said Dr. Miners.

The system can also monitor sleep and abnormal heart rates to signal driver drowsiness and alert the driver. Information about a driver’s wellness and readiness is inferred using available health information. This includes using sleep statistics from wearable technologies to identify when the driver may not have rested well during the prior night and provide alternate suggestions, such as "A taxi can be available in 3 minutes,” says

Dr. Miners.



In cases where wearable technologies are not available, some information about an individuals' lifestyle can be inferred based on their travel patterns. For example, a driver goes to a gym, five days a week and doesn't take his/her device into the facility. In future case scenarios, the platform extrapolates that the user is exercising regularly and can receive incentives or discounts from life or health insurance companies.

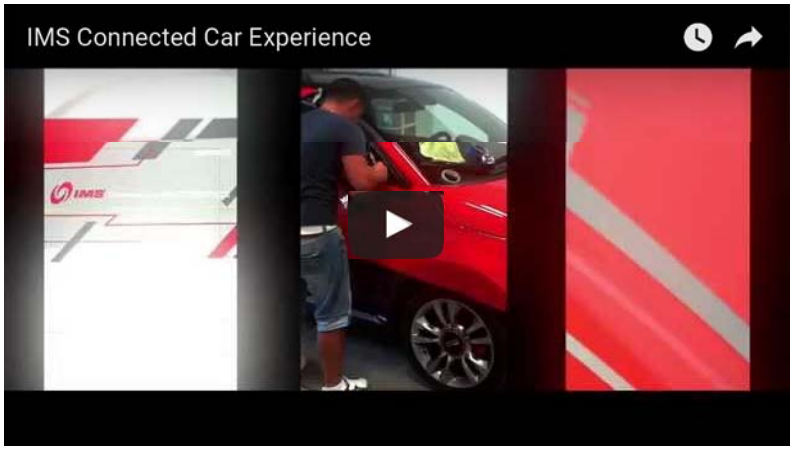
Currently, the DriveSync software coaches drivers for better driving, but could offer feedback to encourage users to help balance their lifestyles when it determines that they spend too many hours a day, 6 days a week at work, notes Dr. Miners.

Some people may find the thought of sharing such personal habits as their driving and sleep habits to an out side source, as invasive. Dr. Miners says that they are working on the "fine print." Users will have to opt-in to any program and be aware of the privacy guidelines. Drivers' information can remain their own. If someone drives aggressively, they may decide not join an insurance program that rewards safe drivers.

The platform doesn't require expensive lane-keeping, blind spot detection or onboard automotive cameras or sensors--- it can detect motion through GPS, accelerometers and gyroscopes. Currently, the DriveSync connected car platform is deployed by car insurers for better driving suggestions, usage-based insurance and discounts for good driving. The company also makes systems to coach new young drivers. Systems can be deployed through a smartphone app or an OBD-II device connected to the vehicle.

The next phase that IMS is researching is detecting aggression in people's voices as an indication of aggressive behaviour. Aggressive driving is dangerous. What will the car suggest when the driver is aggressive or shouting obscenities at an autonomous car? A cold shower? A route to a spa? Phone an anger management coach? Play a Brahms' lullaby? It's too soon to tell.

However, medical information could save lives on the road, "Integrating medical information is important because today all cars do is monitor is how the car is driving, not human behavior" said Dr. Miners "Bio-medical devices will understand driving behavior for more effective driving and safety."



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