DAILY NEWS

U.S

Stress from city driving same as skydiving: MIT study

The new 'Road Frustration Index' quantifies the frustrations of driving, says Massachussetts Institute of Technology researcher Professor Carlo Ratti.

BY STEPHEN WILLIAMS / NEW YORK DAILY NEWS

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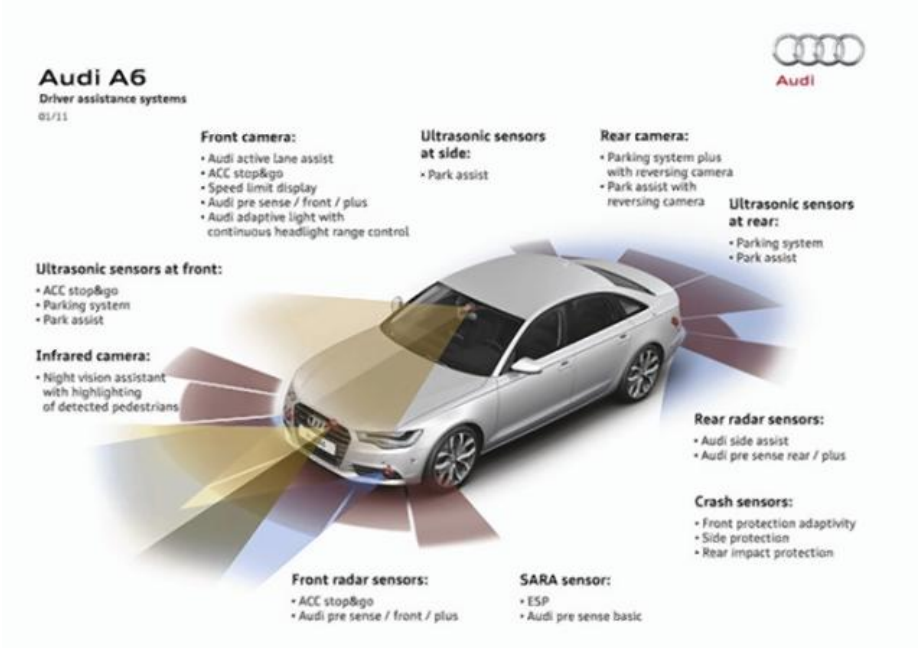

AUDI

A breakdown of the 2012 Audi A6 Driver Assistance Systems shows how they help with driver awareness.

Sweat much when you're about to skydive out of an airplane?

If so, try driving in city traffic: the stress level is about the same.

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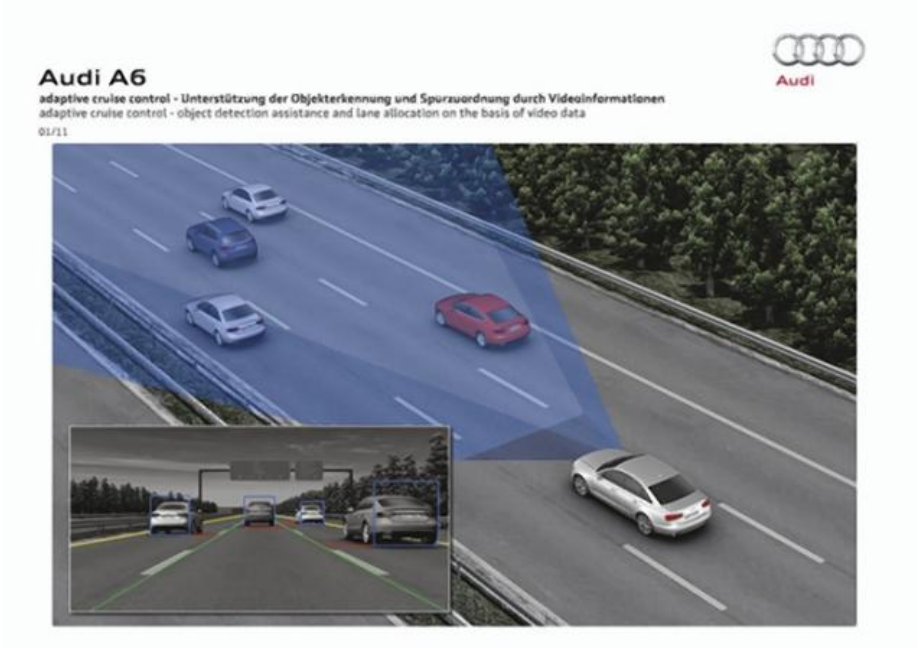
So says a research study conducted by the Massachusetts Institute of Technology together with Audi, part of an effort to better understand what drives road rage, and how automakers might use technology to ease the stress of daily driving.



AUDI

2012 Audi A6 Driver Assistance Systems helps drivers deal with everyday driving stress.

While the study doesn't examine the cause of road rage — most of those who drive in urban traffic know the causes only too well — it does aim to "quantify the frustration," said Professor Carlo Ratti, who runs the MIT SENSEable City Laboratory in Cambridge.

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To compile the aptly named "Road Frustration Index," the MIT researchers employed a series of measurement experiments, using real-time data from an array of face/body tracking technologies, including: GPS to track the subject's location and speed; cameras to monitor both the subject's facial response and external driving environment; a modified Microsoft Xbox Kinect sensor to track the subject's body movements; and skin conductance sensors to monitor the subject's stress responses.

In other words, is he sweating?

AUDI

Audi is developing technology based on the MIT study to help drivers cope.

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For baseline data, the researchers looked at stress levels created during other activities, including having breakfast, and attending an economics lecture at MIT.

"We found that certain driving situations can be one of the most stressful activities in our lives," said Kael Greco, project leader for the SENSEableCity Laboratory. A video clip created for the project indicates that stress created when your car is side-swiped by another causes a discernible spike in aggravation and blood pressure. (The video, by the way, shows an accident that wasn't planned, Ratti said.)

At Audi, the results are being examined with a view toward incorporating advanced driver-awareness systems in upcoming vehicles, the company says. "Audi has worked with MIT on other projects as part of a strategy to develop new technology and approaches with leading universities to better understand the conditions that lead to driver stress, and subsequently, to driver enjoyment," said Filip Brabec, director of product management for Audi of America.

Already, many manufacturers, including Honda, Mercedes-Benz, BMW and others offer sophisticated passive car systems to detect if a car is crossing lanes, coming too close to a car in front, or if another vehicle is moving into a driver's blind spot.

"Cities, blanketed with networks and digital devices, are developing new forms of intelligence, said Ratti. "The same is happening inside our cars, which are increasingly filled with different kinds of connected sensors. From the intersection of these two trends will emerge tomorrow's mobility systems — starting from the next generation of autonomous vehicles."