

Touch-screen steering wheel keeps drivers focused on the road

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The multi-touch steering wheel hardware. Image: Tanja Döring et al.

(PhysOrg.com) -- A team of researchers from the University of Stuttgart, University of Duisburg-Essen and the German Research Center for Artificial Intelligence have created a prototype automotive steering wheel that uses a touch screen to enable the driver to control things such as the radio or navigate a map without having to take their eyes off the road.

With the numerous [technological advances](#) such as mobile phones and texting, the need to keep drivers focused on the road is the idea behind the development of this [touch-screen](#) steering wheel. With standard vehicle controls being behind the steering wheel or in the center console, making changes requires the driver to look away from the road. Albrecht Schmidt, a computer science professor who worked on the project believes by creating gesture-enabled steering wheel, drivers will be able to spend more time focused on the road.

The steering wheel is made out of 11 millimeter thick acrylic that is ringed with infrared LEDs. There is an [infrared camera](#) that is attached to the bottom that detects reflections when the screen is touched. Gestures can be made on the screen without the driver ever having to take their hands off the steering wheel.

To create the prototype, researchers asked participants what movements and gestures they currently used on technological devices in order to create the gestures for some 20 commands. Gestures such as pinching two fingers in order to zoom or tracing out the first letter of a command are some that have been included.

Once they had established all the different general commands and gestures, the researchers then had participants test the [steering wheel](#) in a simulator. The data from the study shows that the new prototype was able to substantially reduce the amount of time a driver needed to take his eyes off the road.

Down the road, they believe the technology could include things such as the ability to project information directly onto the windshield as well as a [sensor system](#) designed to check road conditions and traffic and alert a driver to stay focused on the road.

The prototype was presented at the Conference on Human Factors in

Computing Systems and the researchers are currently speaking with automotive companies to look at the possibility of getting this technology into vehicles in the near future.

More information: Research papers are available [here](#) and [here](#).

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