

RESEARCH

## Jaguar Land Rover advances windshield technology

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*Jaguar's virtual windshield concept*

By JOE MCCARTHY

Jaguar Land Rover is working to reduce distractions for drivers with virtual enhancements to windshields.

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The technology is still in its preliminary stages, but will likely allow drivers to focus more on the road instead of down at gadgets. As vehicles become equipped with more technology, automakers will have to be mindful of the difficulties of multitasking when driving.

"The aim of the virtual windscreen research project is to enhance the driver experience by giving them the right information at the right time without them needing to divert their gaze," said Nick O'Donnell global corporate public relations manager, **Jaguar Land Rover**, Northampton, Britain.

"This will reduce distraction and we have optimized the system to reduce distraction," he said.

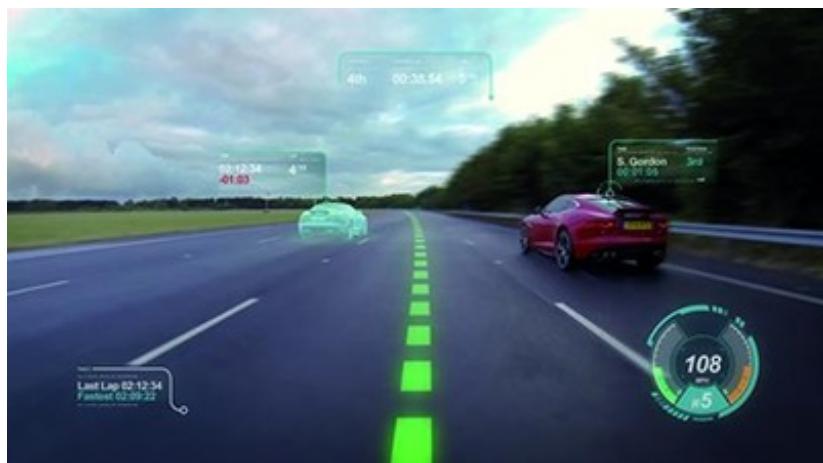
Boosting performance

The new technology turns the windshield into a display that provides useful and engaging

graphics.

Hazard, speed and navigation icons could be projected onto the screen to help drivers gauge approaching scenarios. For example, when coming upon dense traffic on a highway, the screen could offer useful suggestions.

For performance drivers, the screen enters video game territory, displaying racing lines, braking guidance, ghost car racing and virtual cones for training.



*Jaguar Land Rover virtual windshield concept*

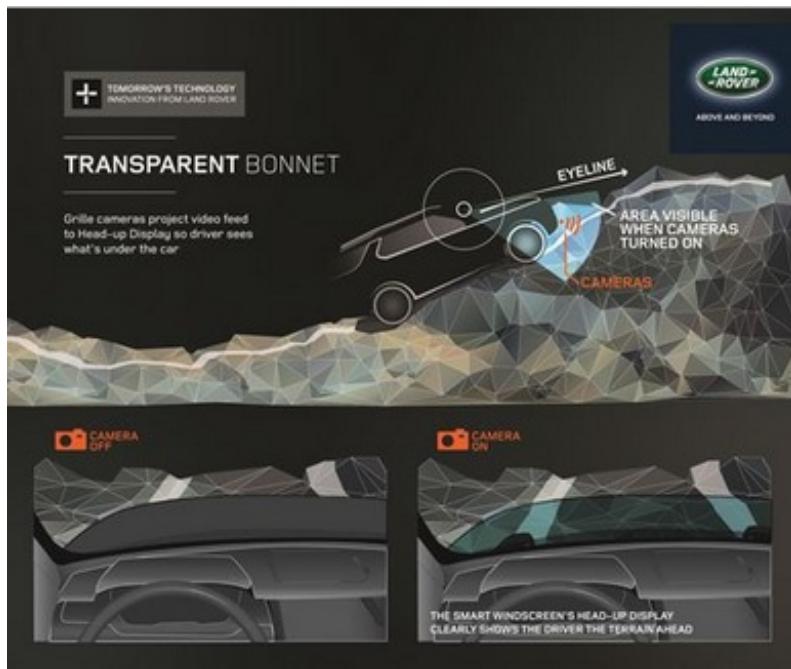
A "ghost car" is a popular function in racing games. A player completes a lap on a course that is memorized by a phantom car that then mimics every detail of that lap so racers can see whether their performance improves or declines in subsequent laps.

Also, the screen could contain images from the rear view mirrors to prevent drivers from swiveling their heads. According to the brand, the technology for this needs to be three-dimensional, since a two-dimensional rendering would not accurately convey distance.

Consequently, the brand is using head and eye tracking technology for a natural-looking, motion-adjusted "3D instrument cluster" that displays surrounding images.

Gesture-control technology may find its way into cars as well. This technology reduces the risk of a driver completing tasks with their hands such as activating wipers while driving. For example, instead of moving the wiper, the driver would just make the motion of moving the wiper.

Land Rover aims to give drivers a better sense of obstacles with invisible technology that renders the front of the car see-through.



### *Transparent Bonnet Technology*

For vehicles that drive on rugged terrain, the virtual imaging concept will help owners navigate more effectively. The “Transparent Bonnet” technology, along with a suite of other concepts, was be showcased at the New York Auto Show ([see story](#)).

“This Jaguar Virtual Windscreen is from the same research project that developed Transparent Bonnet,” Mr. O'Donnell said.

Mercedes-Benz is also rigorously working on improving automotive technology and is committed to improving vehicle autonomy and urban driving. The brand outlines its ambitions [here](#).

Focused or distracted?

Other automakers have been pushing to balance increased connectivity with focused driving.

For example, Audi of America is expanding its MMI infotainment system to let Android users synchronize their smartphones.

Audi introduced the Android capabilities June 25 at the Google I/O conference in San Francisco as part of the Open Automotive Alliance, a collective that seeks to bring the platform into cars. The system will now allow drivers to access and use Android applications and other functions via touch and voice command, lessening the hazards associated with splitting up attention on the road ([see story](#)).

The services enabled by technology will become a major differentiating point in the future of the auto industry.

“[The Transparent Bonnet] was very well received and we are continuing to develop our research,” Mr. O'Donnell said.

Final Take

*Joe McCarthy, editorial assistant on Luxury Daily, New York*

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