Smart windshield – A window into the future of the mobility experience

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Initially, car glazing was designed to protect passengers from exterior incidents while providing visual, acoustic and thermal comfort. But this is about to change.

As autonomous driving redefines the mobility experience, the in-car user experience will change significantly. Both Cerence, the pioneer in advanced multi-sensory mobility assistants, and Saint-Gobain Sekurit, reference supplier of innovative integrated glazing systems, are working actively to shape tomorrow's mobility experience.

For CES 2019 we joined forces to deliver a multi-sensorial user experience that builds on the innovative strengths of both companies – Cerence's conversational AI-based mobility assistant and Saint-Gobain Sekurit's "smart windshield" concept. In the resulting "button-free car of the future," the windshield has evolved to a big screen that – in combination with eye-tracking and voice interaction – enables users to intuitively access and refine services and information without taking their eyes off the road.

We had the chance to sit down with Bastien Beley, Marketing Director of Saint-Gobain Sekurit, who shed some light on the transparent screen windshield technology and shared his view on the role of innovative glazing for tomorrow's mobility experience.

Can you tell us more about the smart windshield that was served as at CES?

This smart windshield is based on transparent screen technology – a concept that utilizes the whole windshield as a projection surface. A projector and a specific functional layer embedded inside the glazing makes the windshield surface a real projection screen. This layer is transparent, and the projector is hidden from the view of the occupants of the car.

So, as you are using the whole windshield as a projection surface, how do you make sure that driving safety is not affected?

The keyword here is transparency. With our transparent screen technology, visibility is never compromised. Even if the information is displayed on the windshield, the glass remains transparent and the observer can always look through the image. Moreover, information brought into the driver's field of vision allows for less distraction and fewer eye and head movements of the driver and any passengers. Plus, the emerging trend of autonomous driving will and enable occupants to take their eyes off the road safely.

How do you foresee the adoption of HMI (human machine interface) in the future?

Strong efforts will have to be made to ensure that HMI will be as inclusive as possible and capable of interacting with all kinds of users. For example, many factors must be taken into account in the design of safety features. Visual signals will need to be supported by audio and sensory alarms as part of a holistic, multi-modal approach. This is why we decided to partner with Cerence in designing a holistic, multi-modal demo concept that is based on our smart windshield technology and takes these aspects into account.

Speaking of semi- and autonomous driving, what are possible use-cases for your windshield technology in this context?

We are envisioning a variety of use cases for autonomous and semi-autonomous cars. As shown with Cerence's CES demo, the glazing surface could be used as an infotainment display – acting as an intermediate yet transparent layer between the car interior and the outside world. This will provide mixed reality experiences by adding visual information, such as details about a point of interest. This technology can also be used to do a variety of small tasks like call or text phone contacts.

For semi-autonomous vehicles, one of the most interesting use cases is related to safety. Safety information could be brought in the driver's field of vision, to increase awareness and assure a smooth transfer of control. These use cases will be enriched by adding voice and other modalities to the interaction to be as inclusive and complementary as possible.

Of course, the predominant glazing in the car is the windshield, but up 40 percent of a vehicle is covered with glass. Are you thinking about augmentation use cases that go beyond the windshield?

The transparent screen technology is applicable to any glazing part of the car and not only in the automotive world. This means that our technology could also be applicable to display information on a sidelite, a roof or even in the car, bus, or train.

In this way, manufacturers will be able to deliver personalized experiences for all passengers – no matter where they are sitting.

Bastien, thank you very much for your time.