

CES 2020: ZF presents 'Safe Human Interaction Cockpit'

10-Jan-2020 11:19 GMT | News | New Products

The SHI Cockpit enables intuitive interaction between humans and the on-board systems of a vehicle

ZF will demonstrate its 'Safe Human Interaction Cockpit (SHI Cockpit)' at the Consumer Electronics Show 2020 (CES 2020) in Las Vegas, this week the company said in a press release on 6 January. The SHI Cockpit enables interaction between human and on-board systems of a vehicle, including advanced driver assistance systems (ADAS) and self-driving system (SDS) intuitive to deliver enhance comfort and safety.



Source: ZF

In case of automated vehicle, the SHI Cockpit facilitates an intuitive and unobtrusive transfer of driving control between the driver and the vehicle's SDS. The system advises when traffic conditions are suitable for automated driving. The vehicle can take over driving control as soon as the driver lets go of the steering wheel. A Hands-on-Detection (HOD) function in the steering wheel detects this and the wheel rises and retracts but remains within the range, once the machine takes over the driving control. At this time, the driver's seat moves backward and downward and inclines to a steeper angle.

According to ZF, the SHI Cockpit relies on haptic (like vibrating seatbelt), visual (circulating strip of cockpit lights in varying color), and acoustics (sound and voice) to inform drivers of whether they or the vehicle is in driving control.

When the vehicle's SDS is in the driving control, the SHI Cockpit can give the driver an advanced notice to take back control of driving. If the driver fails to respond, the vehicle can be programmed to stop once reaching a safe position.

ZF claims that its SHI Cockpit ensures comfort and safety even before the journey begins. To facilitate smooth onboarding, the driving seats receives the driver in a retracted and inclined position and the flattened steering wheel moves upward and rotates. Once the driver is seated, a 3D interior camera measures the driver's height and adjusts the seat and steering wheel accordingly. The SHI Cockpit groups all assistance and feedback on just one operator and display level, allowing the driver to have a bird's eye view of their vehicle on the Head-Up Display Instrument Cluster, where a monitor is installed in the center of the cockpit.

Significance: ZF developed SHI Cockpit in partnership with French automotive supplier Faurecia and German engineering service provider Forschungsgesellschaft Kraftfahrwesen mbH Aachen (fka). ZF led the project and also developed and networked all of the new functions. The company was responsible for all the active and passive safety systems as well as for the HOD steering wheel and for advanced control elements. ZF collaborated with Faurecia for integrating the restraint systems into the seats and the design of the cockpit elements. ZF is collaborating with fka for testing the SHI Cockpit on a continuous basis.

The information contained in this presentation is confidential. Any unauthorized use, disclosure, reproduction, or dissemination, in full or in part, in any media or by any means, without the prior written permission of IHS Markit or any of its affiliates ("IHS Markit") is strictly prohibited. IHS Markit owns all IHS Markit logos and trade names contained in this report that are subject to license. Opinions, statements, estimates, and projections in this report (including other media) are solely those of the individual author(s) at the time of writing and do not necessarily reflect the opinions of IHS Markit. Neither IHS Markit nor the author(s) has any obligation to update this report in the event that any content, opinion, statement, estimate, or projection (collectively, "information") changes or subsequently becomes inaccurate. IHS Markit makes no warranty, expressed or implied, as to the accuracy, completeness, or timeliness of any information in this report, and shall not in any way be liable to any recipient for any inaccuracies or omissions. Without limiting the foregoing, IHS Markit shall have no liability whatsoever to any recipient, whether in contract, in tort (including negligence), under warranty, under statute or otherwise, in respect of any loss or damage suffered by any recipient as a result of or in connection with any information provided, or any course of action determined, by it or any third party, whether or not based on any information provided. The inclusion of a link to an external website by IHS Markit should not be understood to be an endorsement of that website or the site's owners (or their products/services). IHS Markit is not responsible for either the content or output of external websites.