ZF Develops Seat-Integrated Advanced Center Airbag Concept

- New approach designed to help enhance occupant protection and help reduce lateral head movement and occupant interaction in far side crashes
- Seat-integrated systems are valuable in addressing advanced interior concepts for future vehicles and new mobility solutions.
- The Advanced Far Side Center Airbag can be used in vehicles with or without a center console

Friedrichshafen/Livonia. ZF has designed and developed a new advanced center airbag system concept aimed at significantly helping to reduce occupant excursion across a spectrum of crash scenarios. Such seat-integrated systems could also be valuable in addressing advanced interior concepts for future vehicles and new mobility solutions. Addressing changing interior concepts and possibilities – like movable seats or other interior parts – remains on the top of the safety agenda and is a major reason why ZF and Faurecia announced their recent partnership to develop future seat-based safety concepts.

The new center airbag is deployed from the upper in-board side of the seat back and thus does not require a center console to help keep occupants in position. Its primary purpose is to help reduce occupant excursion toward the center of the vehicle in far side collisions, and help reduce the risk of striking another occupant in the front seating positions.

“Euro NCAP is considering future testing protocols in the 2020 timeframe where far side impact protection will become a increasingly important influencing factor for side crashworthiness ratings” said Dirk Schultz, head of Inflatable Restraint Systems engineering for ZF’s Active and Passive Safety Division.
To help deliver improved performance characteristics the new system features an external bag tether connected to the inner rear seat frame that helps keep the bag in position when deployed. It also features a small, specialized bag shape utilizing high pressure for the stiffness required to couple to the occupant shoulder area and help keep the upper extremities and head from moving too far inward toward other interior components or occupants.

ZF is developing a full complement of technologies designed to assist in far side crash scenarios. The company won business for its far side center airbag which is using the additional support of the center console, but recognizes that not all vehicles have this design feature. The new concept helps cover a fuller spectrum of occupants and crash events, and can assist in earning 5-star safety ratings in the future.”

Caption: The new advanced center airbag system is aimed at significantly helping to reduce occupant excursion across a spectrum of crash scenarios – even in advanced interior concepts.

Photo: ZF

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ZF Friedrichshafen AG
ZF is a global leader in driveline and chassis technology as well as active and passive safety technology. The company has a global workforce of around 137,000 with approximately 230 locations in some 40 countries. In 2016, ZF achieved sales of €35.2 billion. ZF annually invests about six percent of its sales in
research & development – ensuring continued success through the design and engineering of innovative technologies. ZF is one of the largest automotive suppliers worldwide.

ZF allows vehicles to see, think and act. With its technologies, the company is striving for Vision Zero – a world of mobility without accidents and emissions. With its broad portfolio, ZF is advancing mobility and services in the automobile, truck and industrial technology sectors.

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