

ZF LIFETEC rearranges driver airbag on the steering wheel and creates design freedom

- **The steering wheel is a core element of digital interior concepts**
- **Innovative positioning of the driver airbag enables forward-looking design options for the steering wheel and its controls**
- **Integration of force-sensitive controls in a seamless, smartphone-like interface**

Since the introduction of driver airbags in the 1980s, they have had a permanent place in the center of the steering wheel, in its hub. Since then, the steering wheel has been more than just the interface between driver and car for transmitting steering commands, it has also become a protective function in the event of an accident. For around three decades, the driver's airbag has been standard equipment in most cars, helping save lives and reduce injuries. In addition, the steering wheel has become the command center for entertainment and assistance functions in modern cars. ZF LIFETEC has designed a new generation of steering wheel to expand the design possibilities of future-oriented interior concepts.

The driver's airbag is nowadays deployed frontal out of center of the steering wheel. In addition to this ZF LIFETEC is going to go a different way in regard of the upcoming new interior designs of the future. In the event of an accident, the driver airbag deploys from the top side of the steering wheel through the upper steering wheel rim towards the driver. This new installation position of the airbag allows the horizontal spoke, including the hub, to have a seamless, smartphone-like design. Force sensitive controls for the vehicle's entertainment and assistance functions are integrated behind a continuous surface. This design blends seamlessly into the digitally designed dashboards of modern vehicle interiors. "With this new concept, we are enabling design freedom for steering wheels without compromising safety," explains Harald Lutz, Head of Development at ZF LIFETEC.

Clear design language

The trend towards seamless design, which has become increasingly popular in recent years, can also be found in modern vehicle interiors. Manufacturers are increasingly eliminating joints and gaps in the interior. This is also reflected in innovative lighting options and displays, which are integrated throughout the vehicle interior. This development will also continue with future steering wheels. Seamless design variants with greater integration of HMI functions and new surfaces will decisively influence the appearance and functionality of tomorrow's steering wheel.

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The function determines the design

The seamless design not only opens many possibilities for the use of new materials and shapes, but also in terms of function. On-demand functions (freely assignable fields), touch displays, or a central screen are now conceivable. However, as the steering wheel is also a safety-relevant component in the vehicle, user-friendliness is paramount. Hybrid solutions can therefore also be implemented with this concept. These include, for example, the combination of an alternatively rotary switch with a force-sensitive and tactile surface also integrated in the steering wheel as an anchor point, thus enabling the driver to operate the system safely.

These functions can also be combined with hands-on detection which is a component of current and future steering wheels. A capacitive sensor under the leather surface recognizes whether the driver is merely touching or safely gripping the wheel. This technology is a further module for safe vehicle control.

Caption:

AIRBAG_2024_ZF_LIFETEC_Steering_Wheel_1

AIRBAG_2024_ZF_LIFETEC_Steering_Wheel_2

The innovative positioning of the driver's airbag behind the steering wheel enables pioneering design options for the steering wheel and its controls. The horizontal spoke, including the hub, can thus be given a seamless, smartphone-like design.

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About ZF LIFETEC

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ZF LIFETEC is a leading passive safety technology provider for enhanced protection of vehicle occupants. Employing around 36,000 employees dedicated to the mission of saving lives with a technology driven approach, the company develops, manufactures and distributes a comprehensive product portfolio including airbag, seat belt and steering wheel systems, covering a wide range from small vehicles in the volume segment up to sophisticated luxury vehicles. Featuring a market share exceeding 20 percent in its core product categories, ZF LIFETEC has a worldwide presence at 51 locations across 22 countries. In the fiscal year 2023, the Group generated sales of EUR 4.6 billion. Based on its strong relationships with a diversified customer base of global OEMs, driven by outstanding quality, long-standing R&D collaborations besides a strong global innovation platform, ZF LIFETEC is well positioned for future growth opportunities arising from the automotive megatrends electrification, (semi-) automated driving, smart interior, as well as increasing safety demands and stepped-up safety regulations worldwide.

Learn more at www.zf-lifetec.com