

Joyson Group presents innovative interior concept at IAA

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Frankfurt, Germany, September 10, 2019. For the first time in Frankfurt, the Joyson Group is presenting a vehicle interior concept that combines competencies from all three of the Group's divisions. In addition to solutions for active and passive safety from Joyson Safety Systems, the demonstrator features operating systems/HMI developed by the Preh Group, as well as innovative backlit surfaces and a linear air vent from JOYSONQUIN Automotive Systems. The Joyson Group's divisions act independently in the market, and with this concept demonstrate in exemplary fashion what new possibilities exist in Joyson's bundled system competence.

The guiding principle behind the concept is an "adaptive interior"; in other words, an interior that is also designed to meet the requirements of autonomous driving. The concept study developed by Joyson Safety Systems includes a steering wheel which is suitable for different stages of autonomous driving and does not need a fixed steering column connection thanks to the steer-by-wire-technology which is integrated into the steering wheel body. In a highly automated driving mode, the concept offers the possibility of folding the steering wheel away and using a large touchscreen productively while driving.

A major challenge in autonomous driving is the safe transfer of vehicle control. This involves the need to recognize the driver's attention state during the handover, which is ensured by the interplay of three technologies: 1.) Driver Monitoring System (DMS™), which uses a camera-based system to sense the head's tilt and direction of view and 2.) Hands-on-Detection (HoD), in which sensors in the steering wheel detect the position of the hands and evaluate vital functions such as

pulse and skin conductivity, while 3.), a light bar positioned in the driver's field of view provides visual feedback in critical driving situations or information about the degree of autonomous driving, rounds off the system. Additionally, the steering wheel embodies the system suppliers' competence of Joyson because the Preh Group has incorporated the multifunctional steering wheel switches into the concept. They have a closed surface and active haptic feedback.

The close cooperation between Joyson's various divisions is particularly evident around the center console, which integrates a linear air vent with invisible slats, a backlit surface decor by JOYSONQUIN, and Preh's touch module.

Joyson Safety Systems also presents a seat with a special, motorized seat belt and a belt-integrated airbag. The seat thus provides additional safety, including in alternative seating positions, e.g., lying down, and can replace the conventional front airbag. Together with the illuminated belt lock and the belt carrier, these technologies contribute to an improvement in the protection and comfort of the occupants. A sensor for seat identification, which is required for the interaction between seatbelt tensioning and airbag deployment, is just as much a part of the seat as a pre-crash side airbag.

All in all, the study not only combines the core competencies of Joyson's three divisions but also shows how a modern interior can be designed for both autonomous and conventional driving.

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Caption

For the first time, the Joyson Group is presenting itself as a system supplier at the IAA. The innovative interior concept for the autonomous driving of the future combines the competences of all three Joyson divisions.

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About Joyson Safety Systems

Joyson Safety Systems is a global leader in mobility safety and manufactures safety-relevant components, systems, and technologies for the automotive market and other industries. Joyson Safety Systems is headquartered in Auburn Hills, Michigan, USA. As a subsidiary of Ningbo Joyson Electronic Corp. (SHA: 600699, "Joyson Electronics"), Joyson Safety Systems employs more than 50,000 people in 25 countries.

www.joysonsafety.com

About Preh

As a global automotive supplier with around 7,300 employees, the Preh Group generated sales of more than EUR 1.3 billion with around 7,300 employees in 2018. Preh was founded in 1919 by Jakob Preh in Bad Neustadt a. d. Saale and since 2011 has been part of the Joyson Group. Preh's development and manufacturing competencies include, in particular, HMI systems for passenger cars and commercial vehicles, infotainment and connectivity solutions, and e-mobility control devices. Preh forms the Automotive Electronics division within the Joyson Group of Companies, Ningbo (China).

www.preh.com

About JOYSONQUIN Automotive Systems

JOYSONQUIN forms the Automotive Components division within Joyson. The company's roots go back to 2003, when the then QUIN GmbH was formed from a merger of the traditional Stuttgart-based companies Rössler & Weissenberger and Grossmann. Since 2015, the decor and trim-part specialist headquartered in Rutesheim has been part of the Joyson Group. At the beginning of March 2019, the company merged with the former sister company Joyson Automotive, which specializes in air vents, to

form JOYSONQUIN Automotive Systems. As a specialist for various decors such as wood, leather, high-quality plastics, foil, carbon-fiber and aluminum, as well as innovative air vent concepts JOYSONQUIN stands for tangible aesthetics and emotions in automotive interiors.

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www.joysonquin.com

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