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Developers have validated pre-adjustment technology with more than 100 test subjects

Automatic seat pre-adjustment from Johnson Controls enhances vehicle safety and comfort

Burscheid, Germany – 15 January 2013. *Johnson Controls, a global multi-industrial company with established core businesses in the automotive, building and energy storage industries, has developed an automatic seat pre-adjustment system that brings the driver's seat into a comfortable and safe position based on an individual's size.*

"Many people do not position their vehicle seat correctly. This can lead to back pain and stiff legs, particularly during longer journeys," said Andreas Eppinger, group vice president technology management at Johnson Controls Automotive Seating. "The right seat adjustment is important for safety. This relates not only to the effectiveness of the head restraints, but also to the interaction with the airbags and safety belts. Therefore, we have developed a technology that allows vehicle seats to easily be pre-adjusted automatically."

Automatic pre-adjustment of the seat position is especially useful when more than one person drives the same vehicle. This applies to family cars that are driven by more than one family member as well as to vehicles in company fleets and from rental companies and car-sharing service providers.

The ergonomics specialists at Johnson Controls developed an algorithm that determines the optimal seat position based on the driver's size. Based on this algorithm, the adjustment motors automatically move the seat to a position that is both comfortable and safe for the respective individual. In some cases, the driver may still need to fine-tune the seat position to suit his personal preferences.

The experts from Johnson Controls examined the seat positions of more than 100 people.

"We discovered that correct positioning of the seat track cannot be derived directly from leg length, nor from height adjustment of the seat derived directly from the torso length. Rather, the human body is more like a complex system. If you change one parameter, this has an impact on other variables," explained

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Eppinger. “We were able to program the algorithm so that size was sufficient as the decisive adjustment criteria. This enabled very precise default adjustment that was rated as good by the participants in the series of tests we performed. Following minor manual readjustment, they rated the position as very good.”

A large majority of the test group found the pre-adjustment technology to be convenient and user-friendly.

To operate the system, Johnson Controls has developed an app that allows drivers to input their size via smartphone. Alternatively, this information can easily be entered into the vehicle’s digital control console. It is also possible for an on-board camera to automatically measure body size before the driver even enters the vehicle and for the seat to move into the correct position.

It is also conceivable that the driver’s size could be stored in the customer profile for rental cars and car-sharing services. This information would be forwarded to the vehicle upon hire so that the seat can be adjusted before the driver enters the car.

“Connectivity in vehicles means far more than just access to the Internet and email. By networking the vehicles, comfort and safety can also be increased. The automatic seat preadjustment is a good example of intelligent interfaces between humans and machines,” said Eppinger.

Digital images are available online from www.johnsoncontrols.co.uk/press.

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Johnson Controls is a global leader in automotive seating, overhead systems, door and instrument panels, and interior electronics. We support all major automakers in the differentiation of their vehicles through our products, technologies and advanced manufacturing capabilities. With 240 locations worldwide, we are where our customers need us to be. Consumers have enjoyed the comfort and style of our products, from single components to complete interiors. With our global capability we supply approximately 50 million cars per year.