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COLLABORATION CAB

THIRTEEN GLOBAL LEADERS IN THE FIELD OF INDUSTRIAL VEHICLE DESIGN HAVE RECENTLY FORMED THE CAB CONCEPT CLUSTER. TOGETHER THEY HAVE DESIGNED THE OPERATOR SYSTEM OF THE NEAR FUTURE

▶ As part of the Cab Concept Cluster (CCC), Grammer is introducing a complete operator system consisting of an innovative, ergonomically optimized driver seat with electrically adjustable features, plus a multifunctional armrest and 12in multitouch display for controlling all vehicle and seat comfort functions.

The CCC is a business association with 13 participating partners, including global players, innovative OEM suppliers, prominent scientific institutes, designers, industry associations, rental companies, and vehicle users. The cluster members are Aurora, Bosch, Dresden University of Technology, Fritzmeier Systems, Grammer, Hella, Hydac, Lumod, Max Bögl, Mekra Lang, Savvy Telematic Systems, SMA Metalltechnik and VDBUM Group.

By exploiting existing synergies, the cluster partners were able to develop and implement the Genius Cab as a customer-neutral innovation platform in the space of only 18 months.

Its integrated components in the areas of safety, intuitive operation, driver comfort, maintenance and design have set new standards for the international markets. Each component is tailored to the added value of the others, fulfilling specific user needs with near-series technology. Never before have such high levels of technical innovation been incorporated into one cab. For the first time, all the manufacturers involved designed and developed the



exterior and interior within a consistent styling concept. This is one of the reasons why the Genius Cab was awarded several design prizes, including the Bauma Innovation Award, the VDBUM Advancement Award and the Baden-Württemberg International Design Prize.

Communicating with machines

As the Cluster partner responsible for interior human-machine interface (HMI)/

assistance, it was important for Grammer to work with the partners to ensure that the human-machine interface used to control all vehicle functions was ergonomically geared to the operator. Since Grammer already supplies complete systems comprising a seat, multifunctional armrest, display, and graphical user interface (GUI), it has been able to make a major contribution to functionally integrating the cabin's interior.

The development work under the theme of 'human-centered design' has focused exclusively on meeting the needs of vehicle drivers by enabling them to intuitively and ergonomically control and operate all vehicle and comfort functions using a multifunctional armrest and multitouch display. The newly designed driver seat for the Genius Cab boasts a large number of electrically adjustable comfort features with a memory function. The seat is linked to the vehicle's CANbus system and includes a driver detection system for immediate and completely automatic adjustment to each operator.

Fancy a massage?

Numerous electrically powered functions, including adjustment of the seat's fore/aft



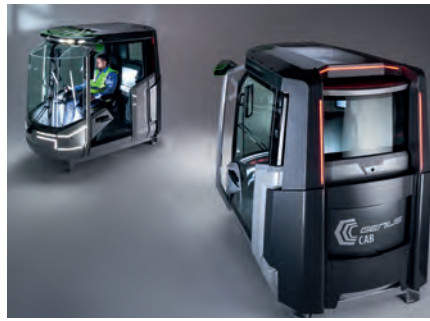
ABOVE: The CCC partners developed the 'Genius' model cab by pooling their expertise

LEFT: Electrically powered functions inside the cab can be controlled via the multitouch display

OPPOSITE: An external view of the Genius Cab

position, height position, backrest and seat cushion angles, seat depth adjustment and shoulder supports, give the driver optimal comfort for everyday work. All of these functions are conveniently controlled via the multitouch display. This eliminates the need for conventional manual seat controls. In addition, the seat features an integrated headrest, height-adjustable three-point safety belt, adjustable lateral contours, seat climate control, seat heating and – for the ultimate in comfort – even a massage function. It also opens up new possibilities for customizing the cab's interior design, since the ambient lights of the cabin and seat are coupled to one another. This enables extras such as an illuminated logo on the backrest or illuminated piping that is coordinated with the overall cabin design to evoke a special feel-good ambiance.

The newly developed electronic multifunctional armrest with 12in multitouch display can be used not only to adjust the seat and control the vehicle, but also to operate main cabin functions such as lighting, heating and A/C, sun protection, or windshield wipers. This puts virtually all functions within outstanding ergonomic reach of the driver.



At your fingertips...

Grammer has also been in charge of developing the architecture of the GUI. The goal was to develop an innovative, user-friendly interface for the multitouch display. In cooperation with the Dresden University of Technology, the company has designed an intuitive, very well-organized touch-sensitive panel that maximizes workplace ergonomics. The modular concept underlying the multifunctional armrest makes it possible to flexibly integrate standard components such as joysticks, keypads, fingertip switches, or rotary-push-buttons depending on user needs. This permits the creation of a tailored HMI concept for each customer's unique application. The redesigned joystick

makes it very easy to operate the vehicle: the hand rests comfortably in a horizontal position and ergonomically positioned keypads for thumb and index finger reduce unnatural hand postures, resulting in an increase in productivity. Optionally, these elements can be supplemented by integrating backlit push buttons and rotary switches in the joystick handle.

Looking ahead, the trend in off-highway vehicles is toward efficiently maximizing system integration. This calls for progressively digitizing machines and cabins. In addition, greater safety, ergonomics, efficiency and comfort requirements must be met, along with greater expectations with regard to styling and recognition value in international markets. As an innovative supplier of driver seats, multifunctional armrests and displays, Grammer already possessed extensive experience and expertise in this field, which it has now successfully applied to advance the cluster's work. **ivT**

Hubert Wittmann is senior product manager, strategic product planning at Grammer

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SUCCESS BUILT ON COOPERATION







We are proud to be a part of the Cab Concept Cluster.

Grammer supplied a complete operator system consisting of an innovative, ergonomically optimized driver seat with electrically adjustable features plus a multifunctional armrest and 12" multitouch display for controlling all vehicle and seat comfort functions.

More information: www.cabconceptcluster.com

