

### **Everything under control: Bosch Engineering presents smart surround sensors at AGRITECHNICA**

More safety and precision for agricultural machine operators thanks to high-performance radar and ultrasonic sensors

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- ▶ Flexible and precise surround sensors for assistance systems and automation of agricultural machinery
- ▶ New as of 2024: radar off-highway premium
- ▶ Multicamera system: coordinated overall system for quick and simple assembly as a retrofit solution

Abstatt, Holzkirchen (Germany) – Automation is playing a significant part in making agriculture faster, more efficient, and also more sustainable. This is especially true for assistance functions for agricultural machinery and equipment – right up to autonomous field robots. The high-performance surround sensor systems from Bosch Engineering provide an important building block for machine automation. At Agritechnica, the company will present its new ultrasonic system as well as the completely redeveloped high-imaging radar featuring ultrahigh resolution for detecting objects that are very close to one another even more precisely. "Our high-performance surround sensors help us make mobile agricultural machinery safer and enable work to be done very precisely in fields that are often difficult to navigate. By combining software and sensors, we also generate assistance functions that are more sophisticated," explains Philipp Kurek, who is responsible for the off-highway area at Bosch Engineering.

#### **Ultrasound – powerful sensors for more safety up close**

For greater safety in the automation of agricultural machinery, it is becoming increasingly important to use high-performance surround sensors for safety-relevant functions. The ultrasonic systems for agricultural applications from Bosch Engineering cover a wide detection range (up to 360° panoramic view) with up to twelve ultrasonic sensors. Depending on the configuration, the sensors simply measure the distance or also offer object localization. For this purpose, an

algorithm determines the position of the object within the detection area by using triangulation.

The safety certification according to ISO 25119 enables the ultrasonic system to be easily integrated into the sensor cluster of a surround sensing system which has to meet functional safety requirements. For example, this includes move-off control or emergency braking functions for slow-moving machines.

### **Radar off-highway premium – for ultraprecise surroundings perception**

In 2024, Bosch Engineering will launch the newly developed off-highway premium radar system (imaging radar). Based on the latest automotive technology, the system offers a point cloud with a ten times higher resolution compared to previous system generations, meaning that objects in the detection area (x, y, and z coordinates) which are very close to one another can be distinguished even more reliably. For example, this enables very precise height measurement for precise readjustment of the device's working height from the ground during travel over uneven terrain.

### **Multicamera system retrofit – complete package for quick and simple commissioning**

The multicamera system is a visibility assistance system that generates a 360° view of the current vehicle surroundings and displays it on a monitor in the cockpit. All functions of the retrofit solution are controlled via a touch interface on the display. The intuitive menu allows switching between the individual camera views, for example. Users can choose between individual front/rear views and the 360° panoramic view in full-screen or split-screen mode as well as a panorama view. In panorama mode, the view area of the front or rear camera is expanded to 180°. Thanks to the extended angle of view, this mode ensures much greater safety, for example, when driving backwards in areas with restricted visibility, such as exit gates.

The multicamera system is now also available as a retrofit solution for agricultural machinery. It comprises four compact near-range cameras (including control unit), a universal wiring harness, a 10-inch touch display, and a set of camera mounts. The complete package thus includes everything needed for quick and simple installation, regardless of the vehicle make, model, or year of manufacture.

### **Further information:**

<https://www.bosch-engineering.com/branches/ohw-overview.html>

<https://www.bosch-mobility.com/en/solutions/assistance-systems/radar-systems-ohw/>

<https://www.bosch-mobility.com/en/solutions/assistance-systems/multi-camera-system-ohw/>

<https://www.bosch-mobility.com/en/solutions/assistance-systems/ultrasonic-sensor-systems-ohw/>

**Press photos:** #38c77a24, #2f3ae4e5, #83dc0a99, #d67ba4c7

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