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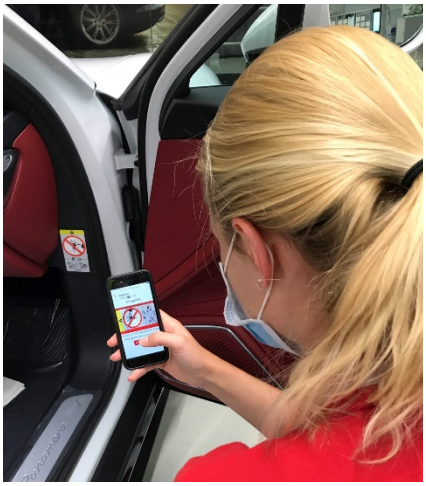
Computer Vision to make production within the Volkswagen Group even more efficient

- **Computer Vision: Volkswagen forges ahead with image recognition processes in combination with artificial intelligence**
- **Gerd Walker, Head of Volkswagen Group Production: "Key contribution to boosting efficiency in production. Expect cost reductions running into the double-digit million range by 2024."**
- **First cross-Group application to be linked to the Volkswagen Industrial Cloud in 2021**

Wolfsburg, July 2, 2020 – In production, the Volkswagen Group is continuously moving ahead with future-oriented technologies and digitalization. "Industrial Computer Vision" image recognition and processing technology is to help improve productivity in production by 30 percent from 2016 to 2025. "The use of this technology offers considerable potential for making our production plants even more efficient. By 2024, we already expect cost reductions running into the double digit million euro range throughout the group," says Gerd Walker, Head of Volkswagen Group Production. "The focus is on applications which we can develop at one location and then roll out throughout the Group." The first two Computer Vision solutions from Porsche and Audi are currently being prepared for Group-wide rollout and connection to the Volkswagen Industrial Cloud.



The first application of Computer Vision is to be rolled out across the Group via the Volkswagen Industrial Cloud as early as next year. It is currently running at Porsche in Leipzig.

The Volkswagen Group is already among the leading automakers working with Computer Vision. The process extracts information from optical data, such as the real environment at the plant, which it then evaluates using artificial intelligence (AI). The procedure is similar to the human capability of recognizing, processing and analyzing images. Volkswagen has been working with this technology for several years and is now intensifying its efforts.

The first application, which is to be rolled out via the new Volkswagen Industrial Cloud throughout the Group next year, is currently being tested by Porsche in Leipzig. The application functions as follows: several labels are attached to each vehicle produced, for example with vehicle information or notes on airbags. Many of these labels contain country-specific information and are written in the customer's language. The proper application of these labels is ensured by Computer Vision.

At the Porsche plant in Leipzig, an employee on the production line now scans the vehicle identification number to ensure clear identification of the vehicle. Photos are taken of each label attached to the car. The app checks the images to ensure that the labels have the correct content and are written in the appropriate language on a real-time basis and provides the production line employee with feedback on whether everything is correct. This saves several minutes per vehicle. The app was developed jointly by Porsche, the Volkswagen Software Development Center in Dresden and the Smart.Production:Lab Wolfsburg.

Another solution currently being prepared for use throughout the Group comes from Ingolstadt, where Audi uses it for quality testing at the press shop. Cameras combined with software based on machine learning detect the finest cracks and defects in components.

Volkswagen has set up a team of about 60 Computer Vision experts for the further development of the technology and the evaluation of new utilization possibilities. In addition to the use of the technology in production, Volkswagen plans applications along the entire value stream, for example in sales and after-sales. For development work on the optical procedure, Volkswagen is recruiting experts for this area in Berlin, Dresden, Munich and Wolfsburg. In addition, the Group continues to build up its skills in the fields of camera technology, machine learning and the operation of Computer Vision solutions.

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About the Volkswagen Group:

The Volkswagen Group, with its headquarters in Wolfsburg, is one of the world's leading automobile manufacturers and the largest carmaker in Europe. The Group comprises twelve brands from seven European countries: Volkswagen Passenger Cars, Audi, SEAT, ŠKODA, Bentley, Bugatti, Lamborghini, Porsche, Ducati, Volkswagen Commercial Vehicles, Scania and MAN. The passenger car portfolio ranges from small cars all the way to luxury-class vehicles. Ducati offers motorcycles. In the light and heavy commercial vehicles sector, the products range from pick-ups to buses and heavy trucks. Every weekday, 671.205 employees around the globe produce on average 44,567 vehicles, are involved in vehicle-related services or work in other areas of business. The Volkswagen Group sells its vehicles in 153 countries.

In 2019, the total number of vehicles delivered to customers by the Group globally was 10.97 million (2018: 10.83 million). The passenger car global market share was 12.9 percent. Group sales revenue in 2019 totaled EUR 252.6 billion (2018: EUR 235.8 billion). Earnings after tax in the fiscal year now ended amounted to EUR 14.0 billion (2018: EUR 12.2 billion).