Digital Process Monitoring in the Paint Shop

A new software system helps to produce a perfect paint finish. Specialists from a variety of departments at Audi's plant in Neckarsulm in southern Germany have collaborated to develop the Paintshop Cockpit. This allows problems during painting to be picked up at an early stage and to be resolved by making adjustments to the process.

Audi's site in Neckarsulm in southern Germany offers customers a wide variety of colour options for their new cars. As well as the brand's standard colours, customers can choose their own individual shades. When combined with the broad range of different models produced at the plant, this makes the painting process highly complex and requires an extremely efficient process monitoring system.

Employees now have a new software package to support them during this crucial phase of production. The Paintshop Cockpit (PSC) combines, sorts and verifies data from the painting process and monitors the painting phase to identify potential problems quickly. Abnormalities such as tiny particles of dirt or air bubbles in the paint are recorded directly on the production line in an existing IT sys-

tem known as the electronic vehicle job card. The data stored in the card is evaluated in the PSC, together with the time of the shift, the paint colour and the vehicle model.

Accurate data analysis allows for targeted interventions

All the information is kept permanently updated by the system and regularly monitored by specialists, which means that it can be accurately analysed. In a subsequent step, the employees can make targeted adjustments to the painting process, such as reprogramming the painting robots.

The software is constantly being improved and will in future be used in the paint shop in Ingolstadt and in other departments. The Paintshop Cockpit was developed as a collaborative project involving a number of departments at Audi. These included process control, maintenance and IT and the TechHub Data Driven Production team in Heilbronn, which has been running projects in the field of data analytics in production since 2017. //

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The employees in the paint shop can record problems with the paint application process directly on the production line. All the data is subsequently combined and evaluated.

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