



Corporate Communications

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With virtual reality into the electric era: Audi makes technicians worldwide fit for the e-tron

- **Innovative training methods for working with complex battery technology**
- **Digital modular solution allows efficient use of VR and AR training**
- **Markus Siebrecht, Head of After Sales: “Transformation towards digitalization and electric mobility requires new media and qualifications also in the area of service”**

Ingolstadt, May 17, 2019 – Know-how in high-voltage technology, electrics and electrical engineering: Audi is currently preparing technical trainers and service technicians worldwide for the Audi e-tron*. Virtual-reality training is also being used for the first time. The virtual technology allows realistic, safe learning of highly sensitive technologies such as the high-voltage battery. The company uses an efficient digital modular solution that is already in use for VR training in logistics.

With the launch of the first all-electric series model from the Four Rings, new challenges are also facing AUDI AG’s sales and service organization. “We want to provide our service partners with the best possible support during the transformation towards electric mobility, while digitally aligning our training offering,” says Markus Siebrecht, Head of After Sales at AUDI AG. “This is why we have been working intensively on innovative training concepts for the required qualification profiles. The targeted use of virtual reality is an important building block in this process.”

For example, service technicians practice in virtual space especially on the heart of the new e-tron: the high-voltage battery. In so-called process training courses, they learn step by step how to open the battery, change a switch box or change a battery module. The advantages of virtual-reality training are that thanks to digital technology, Audi was able to roll out the training courses efficiently, quickly and at a high level in the markets worldwide. The technicians there are thus optimally prepared for the new model. In addition, the employees can get to know the new, highly sensitive technology in virtual space without any risk, and can determine the training speed themselves. At the same time, playful elements increase the learners’ motivation. In addition to German and English, the tutorials are also available in Spanish and French.

The VR training for service technology is based on a modular solution that utilizes synergies with other parts of the company. Standard interactions such as gripping components are already pre-programmed, and design data such as for the battery can be imported into existing environment templates. This reduces production and development costs and makes the use of virtual reality in series production affordable.



New training concepts are already being worked on today. A multi-user approach is conceivable, for example, in which teachers and students meet together in a virtual space – even if they are physically at completely different locations. Augmented reality, the fusion of the real and virtual worlds, is also in preparation. Audi is currently developing an application for car body experts in car dealerships that allows them to experience the Audi e-tron as a 3D model in real size via a tablet. Animations then show the service technicians the individual repair steps in detail.

All Audi's training content is available to service partners worldwide in a cloud-based knowledge database and can be accessed flexibly as required.

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***Fuel consumption of Audi e-tron:**

Electricity consumption combined in kWh/100 km: 26.2 – 22.6 (WLTP); 24.6 – 23.7 (NEDC);
CO₂ emissions combined in g/km: 0

(Information on fuel/electricity consumption and CO₂ emissions in ranges depending on the equipment and accessories of the car.)

The indicated consumption and emissions values were determined according to the legally proscribed measuring methods. Since September 1, 2017, the type approval for certain new vehicles has already been performed in accordance with the Worldwide Harmonized Light Vehicles Test Procedure (WLTP), a more realistic test procedure for measuring fuel consumption and CO₂ emissions. Beginning September 1, 2018, the WLTP will gradually replace the New European Driving Cycle (NEDC). Due to the realistic test conditions, the fuel consumption and CO₂ emission values measured are in many cases higher than the values measured according to the NEDC. Additional information about the differences between WLTP and NEDC is available at www.audi.de/wltp.

At the moment, it is still mandatory to communicate the NEDC values. In the case of new vehicles for which the type approval was performed using WLTP, the NEDC values are derived from the WLTP values. WLTP values can be provided voluntarily until their use becomes mandatory. If NEDC values are indicated as a range, they do not refer to one, specific vehicle and are not an integral element of the offer. They are provided only for the purpose of comparison between the various vehicle types. Additional equipment and accessories (attachment parts, tire size, etc.) can change relevant vehicle parameters, such as weight, rolling resistance and aerodynamics and, like weather and traffic conditions as well as individual driving style, influence a vehicle's electrical consumption, CO₂ emissions and performance figures.

Further information on official fuel consumption figures and the official specific CO₂ emissions of new passenger cars can be found in the "Guide on the fuel economy, CO₂ emissions and power consumption of all new passenger car models," which is available free of charge at all sales dealerships and from DAT Deutsche Automobil Treuhand GmbH, Hellmuth-Hirth-Str. 1, 73760 Ostfildern-Scharnhausen, Germany (www.dat.de).

The Audi Group, with its brands Audi, Ducati and Lamborghini, is one of the most successful manufacturers of automobiles and motorcycles in the premium segment. It is present in more than 100 markets worldwide and produces at 18 locations in 13 countries. 100 percent subsidiaries of AUDI AG include Audi Sport GmbH (Neckarsulm), Automobili Lamborghini S.p.A. (Sant'Agata Bolognese, Italy) and Ducati Motor Holding S.p.A. (Bologna, Italy).

In 2018, the Audi Group delivered to customers about 1.812 million automobiles of the Audi brand, 5,750 sports cars of the Lamborghini brand and 53,004 motorcycles of the Ducati brand. In the 2018 fiscal year, AUDI AG achieved total revenue of €59.2 billion and an operating profit before special items of €4.7 billion. At present, approximately 90,000 people work for the company all over the world, more than 60,000 of them in Germany. Audi focuses on sustainable products and technologies for the future of mobility.
