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Intelligent assistant for electric driving: the Audi e-tron route planner

- Assistant facilitates route planning on fully electric models as standard feature
- Focus on customer value: calculation of optimal driving and charging time
- Integration into Audi's ecosystem: advance route planning via myAudi app

Ingolstadt, October 23, 2020 – The e-tron route planner is installed on all of Audi's fully electric e-tron models. As standard equipment and part of the Audi connect services, it offers customers elementary route planning, which can be done before starting a trip, either using the myAudi app or the in-car navigation system. Once on the road, drivers can rely on always traveling the fastest of all possible routes, supported by the system ideally planning the required charging stops – whenever the destination is located outside of the car's range. Using new algorithms, the extended e-tron route planner is geared to more effectively taking the unique characteristics of electric driving into account. Daily data updates and individual routes enhance everyday usability.

What are the capabilities of the Audi e-tron route planner?

On the battery-electric models, the Audi e-tron route planner extends the previously known navigation functions of the Audi MMI (Multi Media Interface) by the specific needs of e-car drivers. In addition, it assists them in optimally handling the requirements of electric mobility especially when traveling medium and longer distances. The e-tron route planner calculates the fastest route, considers traffic and road data, includes the driver's driving style, calculates the duration of the charging stops and incorporates them in planning the total travel time. Users receive important information such as the charging capacity or charging connections and plug types for the relevant charging stations. Moreover, the system indicates dynamic availability, for instance, whether or not charging stations are vacant or occupied, always with a bias for moving forward quickly. For example, two short charging processes with high charging capacity may yield time-related advantages over one long stop with low charging capacity. Alternative routes with better charging infrastructure are considered in the calculation of the optimal total travel time as well. The Audi e-tron route planner gives preference to the powerful HPC charging stations (HPC = High Power Charging). They are able to charge the high-voltage battery, for instance in the Audi e-tron Sportback 55 quattro*, with up to 150 kW direct current (DC). Under ideal conditions, charging from 5 to 80 percent of the battery's capacity takes only around half

* The collective fuel consumption values of all models named and available on the German market can be found in the list provided at the end of this MediaInfo.

an hour. A push notification on the myAudi app indicates to the driver when the desired state of charge (SoC) has been achieved and the trip can be continued.

What makes the Audi e-tron route planner so valuable?

Audi has been installing in its e-tron models the e-tron route planner as standard equipment from day one. It provides the four rings with a competitive advantage because this important assistant is unrivaled in this form. The service is fully integrated in the brand's ecosystem. The route planner can be used in the car and for pre-planning purposes by means of the myAudi App. In this way, planning a trip with the Audi e-tron can conveniently start on a mobile device at home and be sent to the car by wireless transmission. Daily charging station data updates are available in both the myAudi app and the in-car Audi MMI. The combination of the Audi e-tron route planner, the individual search for the most suitable charging stations, display of their locations and charted range indication covering an area surrounding the driver's own location makes this total package so practical and valuable.

What technology does the Audi e-tron route planner use?

The Audi e-tron route planner is a new software development that was initially integrated in the Modular Infotainment Matrix of the MIB 2+ generation. Since 2020, the third generation of the Modular Infotainment Matrix (MIB 3) with ten times higher computing power has been offering e-tron route planner functions that have been enhanced once again. A new algorithm improves everyday usability of the extended route planner: daily data updates of potential charging stations and a portfolio of alternative routes that have been optimized for the requirements of e-cars assist drivers even more effectively. Among other things, the daily data updates include detailed information such as payment and authentication opportunities, accurate station operator data and potential access restrictions.

How does the driver affect the e-tron route planner?

While calculating the route, the system considers the battery's state of charge. Before starting a trip, the driver can set a different SoC in the app in order to use the SoC anticipated at the time of departure for predicting the route. The Audi e-tron route planner includes the personal driving style based on previous trips. If the driving style changes, the system will adjust its calculation accordingly. The choice of charging opportunities affects the route planner as well: if the driver uses the e-tron Charging Service, the system can give preference to relevant charging stations. The list of charging stations is constantly updated online and indicates the latest update. At the end of a trip, the Last Mile Navigation of the myAudi App will calculate the remaining distance before the final destination is reached. All previously known features and functions of the navigation system have been fully retained: alternative routes, avoidance of road types such as freeways or backroads, input of additional destinations and consideration of toll roads in relevant countries.

In which markets can the Audi e-tron route planner be used?

The Audi e-tron route planner is available in all of Audi's sales regions. In Europe, the e-tron

route planner benefits from a well-established network of Audi's proprietary e-tron Charging Service currently comprising about 180,000 public charging stations. A particularly convenient aspect of the service makes it possible for customers to travel in 26 European countries using just one charging card and paying the same country-wide prices.

What future prospects does the Audi e-tron route planner open up?

With the e-tron route planner, Audi is already providing a package today that eliminates many uncertainties about electric driving and particularly the aspect of charging.

Going forward, the company is planning to tailor the service even more closely to individual user needs and preferences. Due to the integration of the route planner in Audi's ecosystem, users benefit from a constant evolution of the services relating to electric driving on various levels.

Consumption of the models named above

(Information on fuel consumption and CO₂ emissions as well as efficiency classes in ranges depending on the tires and alloy wheel rims used)

Audi e-tron Sportback 55 quattro:

Combined electric power consumption in kWh/100 km: 23.8–21.6;
combined CO₂ emissions in g/km: 0

The indicated consumption and emissions values were determined according to the legally specified measuring methods. Since September 1, 2017, type approval for certain new vehicles has 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. Vehicle taxation could change accordingly as of September 1, 2018. 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 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. Fuel consumption and CO₂ emissions figures given in ranges depend on the tires/wheels used and chosen equipment level.

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 16 locations in 11 countries. 100 percent subsidiaries of AUDI AG include Audi Sport GmbH (Neckarsulm, Germany), Automobili Lamborghini S.p.A. (Sant'Agata Bolognese, Italy) and Ducati Motor Holding S.p.A. (Bologna, Italy).

In 2019, the Audi Group delivered to customers about 1.845 million automobiles of the Audi brand, 8,205 sports cars of the Lamborghini brand and 53,183 motorcycles of the Ducati brand. In the 2019 fiscal year, AUDI AG achieved total revenue of € 55.7 billion and an operating profit of € 4.5 billion. At present, 90,000 people work for the company all over the world, 60,000 of them in Germany. With new models, innovative mobility offerings and other attractive services, Audi is becoming a provider of sustainable, individual premium mobility.
