



Communication: Culture and Trends

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Audi networks with traffic lights in the USA

- **Traffic Light Information is the first true Vehicle-to-Infrastructure (V2I) service by an automobile brand**
- **The service starts up with variations on the Audi A4 and Q7 in Las Vegas**
- **Networking is essential for autonomous driving in cities**

Ingolstadt/Las Vegas, 7 December 2016 – If you know in advance when a traffic light will switch from red to green, your driving is more relaxed and efficient. Audi is the first automobile brand to connect the car to the city infrastructure – an important step towards autonomous driving. In Las Vegas, starting immediately, the Audi A4 and Q7 models can display traffic-light phases directly in the car. Further U.S. cities will follow, and introduction of the system is planned in Europe. Traffic Light Information optimizes traffic flow, saves valuable time and reduces environmental impact.

Audi of America is cooperating with several cities in North America to upgrade the infrastructure for V2I technology. “For the first time, our cars are exchanging data with traffic infrastructure in real time. Drivers can adapt their behavior to the situation and move through city traffic in a much more relaxed and controlled way,” says Andreas Reich, head of Electronics Pre-Development at AUDI AG. “We increase energy efficiency when we connect our Audi models to smart cities. Further V2I services will follow, making the car into an interactive mobile device. We see autonomous driving as the end of this development.”

As a first step, all Audi A4 and Q7 models produced for the U.S. market since June 2016 and equipped with Audi connect will have this function on board. In the USA, municipal traffic management centers will communicate the traffic-light data to Audi’s project partner Traffic Technology Services TTS. Here the data are prepared and sent to the on-board computer in the Audi via a fast Internet connection, for example 4G/LTE, in real time.

The first function of the Traffic Light Information V2I component is called Time-to-Green. In the Audi virtual cockpit or head-up display, drivers see whether they will reach the next light on green while traveling within the permitted speed limit. If not, a countdown is provided of the time remaining until the next green phase – and drivers can take their foot off the gas pedal in good time. Pilot projects in Europe have shown that drivers exercise more foresight thanks to this information about traffic lights. This has a beneficial overall effect on traffic flow. “In our tests the the number of cars that had to brake to a standstill in traffic fell by around 20 percent. This saved time for the driver and also made fuel savings of about 15 percent in the pilot



project,” says Michael Zweck, project manager for Audi Traffic Light Information.

First of all, Audi customers will use this service. The development work that Audi is investing in traffic-light systems will also benefit customers of other brands in future. The increasing spread of the technology will help city traffic planners to understand the causes of hold-ups and optimize the phasing of traffic lights.

In future Traffic Light Information could be linked up to smart navigation and used for new powering concepts. For example, “green waves” in traffic-light sequences could be incorporated in route planning. It is also conceivable that Audi e-tron models could make greater use of braking energy by charging the battery as they decelerate at a red light.

Audi also intends to introduce the technology in Europe. In Berlin, Ingolstadt, Garmisch-Partenkirchen and Verona there have already been extensive pilot projects. In Berlin alone, some 700 traffic lights in the inner city have been connected to the service. Across Europe, however, unified data standards and digital infrastructure do not exist: “In Europe highly diverse traffic technology is in use, as the infrastructure has developed locally and decentrally. We are working on harmonization of the data that have been prepared. After that has been done, we can provide Traffic Light Information in Europe too,” Michael Zweck announced.

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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 twelve countries. In the second half of 2016, the production of the Audi Q5 will start in San José Chiapa (Mexico). 100-percent subsidiaries of AUDIAG include quattro GmbH (Neckarsulm), Automobili Lamborghini S.p.A. (Sant’Agata Bolognese, Italy) and Ducati Motor Holding S.p.A. (Bologna, Italy).

In 2015, the Audi Group delivered to customers approximately 1.8 million automobiles of the Audi brand, 3,245 sports cars of the Lamborghini brand and about 54,800 motorcycles of the Ducati brand. In the 2015 financial year, the Audi Group achieved total revenue of €58.4 billion and an operating profit of €4.8 billion. At present, approximately 85,000 people work for the company all over the world, about 60,000 of them in Germany. Audi focuses on new products and sustainable technologies for the future of mobility.