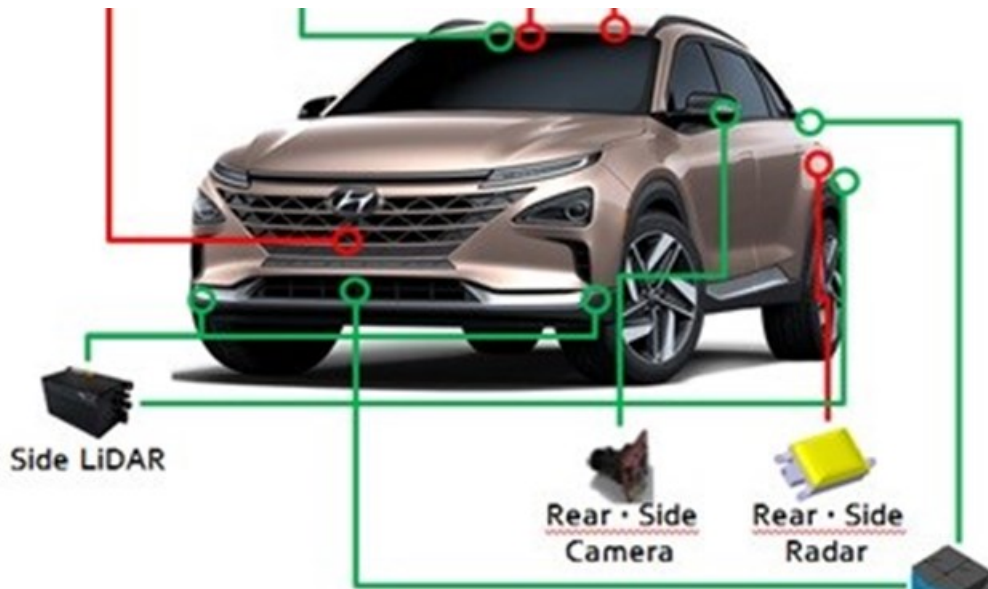


Hyundai demonstrates self-driving fuel cell electric vehicles

A fleet of Hyundai Motor Company's next-generation fuel cell electric vehicles has completed a self-driven 190km journey from Seoul to Pyeongchang.



Until now, autonomous driving has been demonstrated only on selected sections of Korean domestic roads and at a limited speed, this is reportedly the first time autonomous vehicles have operated on public highways at 110km/h, the maximum speed allowed by law on Korean highways.

Three Hyundai vehicles completed the journey, all based on NEXO, Hyundai's next-generation fuel cell electric vehicle which is scheduled to be released in Korea next month. All vehicles were equipped with level four self-driving technology, as defined by the SAE international standards and equipped with 5G network technology.



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Jim Sallis 12 Jan 2018



The demonstration took place in Seoul on 2 February 2018, with the 'cruise' and 'set' buttons being pressed on the autonomous-driving steering wheel of each vehicle, at which point the cars immediately switched to self-driving mode and began the journey. Entering the highway, the vehicles moved in response to the natural flow of traffic, executed lane changes, overtaking manoeuvres and navigated toll gates using Hi-pass, South-Korea's wireless expressway payment system.

The cars feature a number of advanced technologies that enable them to recognise surrounding vehicles more accurately and make better judgements at junctions and navigate through toll gates by accurately calculating the toll gate's width and position. The vehicles are also able to pinpoint their position on a map by using external sensors fitted for situations when the GPS signal was interrupted, such as going through underground tunnels.



Hyundai has conducted numerous highway test drives, which has enabled the accumulation of data to enhance the performance of its self-driving vehicles.

The self-driving vehicles are installed with additional cameras and LIDARs. Adding a small number of sensors to mass-produced vehicles has enabled the realisation of fully autonomous driving technology.



During autonomous driving, a high volume of data is processed by the vehicles' onboard systems, necessitating large power consumption. A fuel cell electric vehicle is able to produce electricity to meet this power consumption, as well as powering the vehicles drive systems, through a reaction between hydrogen and oxygen in the fuel cell stack, with the only tailpipe emission being water vapour, making it the optimal vehicle model choice for this test.



Toyota to present next-generation automated driving research vehicle

9 Jan 2018



The vehicle chosen for this test was NEXO, Hyundai's next-generation fuel cell electric vehicle, which has a target range of +-804km (NEDC) on a single charge of hydrogen and takes only five minutes to refuel. NEXO boasts world-class system efficiency of 60%, durability equivalent to internal combustion engine-driven vehicles and a load space of 839 litres.

Connectivity enhanced infotainment system

Utilising the 5G network of KT Corp., a Korean mobile service provider, the test vehicles deliver five new advanced information technologies, all accessed through a user interface (UI) that provides an intuitive user experience.

Passengers in the rear seats can use "home connect," a car-to-home technology which enables the user to access and control IoT devices installed in their smart home.

"Assistant chat" is a technology that allows users to ask questions to a chatbot with simple voice commands and receive answers in the form of text or images.

"Wellness care" can monitor health information of passengers seated in the rear of the vehicle, such as their stress level, heart rate, and mood state. They can also access relaxing therapeutic services and connect with a health consultant through a real-time video call.

The vehicle also provides "noise-away" cabin noise reduction technology and "mood care" which provides rear door mood lighting when the music player or wellness care is active.

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