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EU develops new driverless car parking system

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There are only a few minutes before your flight check-in closes, or before your train departs, but you now have to spend precious time hunting for a free space at the airport or station car park. Imagine leaving your vehicle at the main entrance and letting the car do the rest on its own. Researchers from Germany, Italy, the UK and Switzerland are working on this, and successful tests took place at Stuttgart airport earlier this year. €5.6 million of EU funding is invested in the system which will be available in the coming years.



In the future, more and more people will drive electric cars and will switch from one mode of transport to another – creating the need for more and varied parking options at transport hubs. To prepare for this mobility shift, the [V-CHARGE consortium](#) is working on a fully automated parking and charging system for electric cars at public car parks.

"The idea is that we can actually use technology to give people a better mix of public and private transport", explains Dr Paul Furgale, scientific project manager for V-CHARGE and deputy director of the autonomous systems lab at the Swiss Federal Institute of Technology in Zurich.

Watch a video showing how it works [here](#).

A smartphone app to leave and get back the car

Drivers will be able to leave their car in front of the car park and use a smartphone app to trigger the parking process. The vehicle will connect with the car park's server and drive itself to the designated space. While in the garage, the car can also be programmed to go to a charging station. Upon returning, the driver uses the same app to summon the car – fully charged and ready to go.

Since GPS satellite signals don't always work inside garages, the scientists have developed a camera-based system based on their expertise in robotics and environment sensing. Safety is at the centre of the project: the car is designed to avoid unexpected obstacles.

Dr Furgale believes the same technology could be used to develop autonomous parking systems for electric cars on city streets. "That will be more of a challenge", he says. "But once you have the maps in place, the rest of the technology will come together."

A system to be integrated into production

In April, the team presented the latest version of the system at Stuttgart airport. This was a success and the researchers are now fine-tuning the technology to tackle more precise manoeuvres and ensure reliability, even in difficult weather conditions.

The project is set to conclude in 2015, and its results available to be progressively commercialised in the coming years. The functions developed should be cost-effective enough to be integrated into production of electric vehicles. Engineers are working with equipment that is already available today such as ultrasonic sensors and stereo cameras that are used in parking assistance and emergency braking systems.

European Commission Vice President Neelie Kroes says: "We need to think ahead and find smarter ways to move, to save time, money and our environment. Who wouldn't want to save time parking their car?"

"We need research on new technologies – and how to combine them – to get practical solutions. The V-CHARGE system goes in the right direction and I look forward to using it."

Read more about the [V-CHARGE project](#).

Background

V-CHARGE is part of the EU investment programme in robotics. To maintain EU leadership in this strategic field, the European Commission launched a €2.8 billion public-private partnership in June (press release), called SPARC, which will receive funding under the new EU research and innovation programme [Horizon 2020](#), #H2020.

Find out more about [EU support to robotics](#) and [examples of projects](#). Stay tuned via [@RoboticsEU](#).



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