



Vodafone Germany and HERE: Partnership for autonomous driving and smart cities

▼ *Strategic collaboration on new digital services for the Autonomous World, with initial focus on cars and smart cities*

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Las Vegas, CES – Vodafone Germany, a leading integrated telecommunications company and Germany’s largest cable television operator, and HERE Technologies (HERE), a global leader in mapping and location services, today announced a strategic partnership focused on services for autonomous vehicles and smart cities.

In their preliminary agreement signed today at CES 2018 in Las Vegas, the companies outlined several collaborative initiatives that take advantage of increased vehicle connectivity, low latency cellular networks and real-time, highly-accurate location services.

Testing maps for autonomous vehicles with 5G network technology

A key area of focus will be on the network infrastructure needed for autonomous vehicles to operate safely and efficiently. The companies intend to test HD Live Map, HERE’s machine readable map for autonomous cars, at the Aldenhoven Testing Center in Germany. Vodafone Germany operates a 5G Mobility Lab at the facility, which is one of the most advanced development and testing environments for autonomous vehicles and will be among the first places in Europe where people can see 5G network technology in action.

Vehicle connectivity will be a critical component of autonomous driving. HD Live Map is being developed to ‘self-heal’, meaning it can reflect dynamic changes in the road environment and update itself automatically in near real-time. Such a map enables vehicles to proactively adjust to changing road conditions – for example, switching lanes and adjusting speed ahead of time in the case of an upcoming lane closure. For this to happen effectively, the data vehicles send and receive over networks will need to flow quickly and seamlessly.

Services for today’s connected cars

HD Live Map is among several services being built on the HERE Open Location Platform, a new development environment for location-centric products and services. Vodafone Germany, which currently utilizes map data from HERE, is now exploring how other



services powered by the Open Location Platform could be integrated into Vodafone Germany's automotive offering. This could include HERE Real-Time Traffic and HERE Safety Services, which utilize data emitting from a vehicle's on-board sensors, such as hazard lights, fog lights, camera, emergency brakes and electronic stability control to build a picture of the road network in near real-time. By end-2019, these services will be aggregating data from tens of millions of cars worldwide, returning to drivers and passengers valuable information about potential road hazards, accidents and bad weather.

Smart waste management and more

Finally, Vodafone Germany and HERE plan to extend their collaboration to services for smart cities. The companies are already identifying potential opportunities to integrate HERE location services within Vodafone Germany's IoT offering. One is in the area of on-demand and automated waste management. This would take into account factors including traffic, fuel consumption and every city's unique infrastructure. The two companies have been demonstrating the possibilities at the HERE Technologies booth at CES 2018 this week.

The companies also see opportunities to offer integrated solutions in a range of other areas, including connected parking, lighting and mobility.

"Together with HERE we develop the 5G atlas for autonomous driving. High-precision maps and real time connectivity come together here," said Hannes Ametsreiter, Vodafone Germany CEO. "Cutting-edge networks, like 5G or our machine network, are the foundation for the transport of the future as well as for smart cities."

"Location intelligence and enterprise-grade connectivity are at the heart of the digital era," said Stefan Hansen, SVP and General Manager for EMEA at HERE Technologies. "Both HERE and Vodafone Germany are excited to harness the vast quantities of data generated by our cities, cars and transportation systems in powerful new services that improve people's quality of life."

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About Vodafone

Vodafone Germany is a leading integrated telecommunications company and Germany's largest cable television operator, offering fixed broadband, mobile communications, internet and TV services. As a gigabit company, Vodafone is a key contributor to the development of Germany's 5G infrastructure. The Düsseldorf-based company's continuous investments in faster fixed and mobile networks are taking Germany forward into the gigabit society.

Vodafone Germany offers a comprehensive ICT portfolio for enterprise customers, networking people and machines, facilitating secure corporate networks and storing



enterprise data in the German cloud. Around 90% of all DAX-listed companies and 15 of Germany's 16 federal states are already Vodafone customers. Vodafone Germany has 14,000 employees and generates annual revenue of € 11 billion with 45.7 million SIM cards, 6.5 million fixed broadband customers and numerous digital solutions.

Vodafone Germany is the largest operating company of the Vodafone Group, one of the world's largest telecommunications companies with mobile operations in 26 countries and partners with mobile networks in 49 more. It also has fixed broadband operations in 19 countries. Vodafone has around 522.8 million mobile customers and 18.8 million fixed broadband customers around the world.

Visit the website at www.vodafone-deutschland.de for further information.

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About HERE Technologies

HERE, the Open Location Platform company, enables people, enterprises and cities to harness the power of location. By making sense of the world through the lens of location we empower our customers to achieve better outcomes – from helping a city manage its infrastructure or an enterprise optimize its assets to guiding drivers to their destination safely. To learn more about HERE, including our new generation of cloud-based location platform services, visit <http://360.here.com> and www.here.com