NTU campus to test smart mobility

It will serve as a lab to develop technologies to make road traffic safer and more efficient

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Universities do a lot of research and development, but it is not often that an entire university campus—all 200 hectares of it—becomes a laboratory for a single project.

But this is so for 12 companies which yesterday joined Nanyang Technological University (NTU) and its existing partner NXP Semiconductors, an international automotive semiconductor supplier, in a new consortium to develop technologies to make road traffic safer and more efficient.

The companies, which include major corporations such as Panasonic, Singapore Technologies Kinetics and American software multinational Red Hat, will combine their areas of expertise to create a system that enables vehicles to interact seamlessly with different parts of the traffic infrastructure, such as traffic lights and congestion charging.

Mr Wang Hai, NXP’s senior vice-president of Global Technology Innovation, said the tie-up is an important step towards Singapore’s vision of a sustainable transport system that includes driverless vehicles.

He added: “Singapore represents a very typical modern city—well-controlled but (with) lots of the chaos of crowded cities. We’re really hoping that whatever we learn will be applicable to the world... not only to increase efficiency and save costs but also to save lives.”

The backbone of the campus-wide test bed at NTU is a secure communications system set up in April 2015 by NXP as part of a four-year S$22 million project.

The system is based on an international wireless standard known as vehicle-to-everything (V2X), which is similar to Wi-Fi but has a stronger signal and is processed differently by the computer to enable vehicles to quickly acquire the signal and be able to remain connected when they are moving at a high speed.

The project involves 50 vehicles equipped with data modems that communicate with 38 units on lamp posts throughout the campus. There are also 82 cameras around campus, feeding real-time data on traffic conditions and vehicle movements to a command centre.

Among the innovations that are already being tested are smart traffic lights that turn green in the car’s favour if there is no conflicting traffic in the area, which researchers said could be useful for ambulances.

The system also gives advance visual and audio notifications of road signs, road works and nearby vehicles which may be out of the line of sight or hard to see in bad weather.

In the future, it could even detect vehicles flouting traffic rules, such as speed limits, and automatically report them to the authorities.

Mr Pee Beng Kong, director of electronics at the Economic Development Board, which provided part of the funding, said smarter and safer vehicles connected to a smart transport network is an example of electronics powering a more intelligent and connected future.

“Singapore’s rich ecosystem of industry players and test beds positions us well for companies such as NXP to develop, test and commercialise smart mobility solutions before scaling them up for the world,” he added.

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