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## NTU to have driverless bus shuttle service running campuswide by 2019

By LOW YOUJIN



Koh Mui Fong/TODAY

A demonstration of the fully automated Group Rapid Transit, which will operate a minibus service route connecting halls of residences with the main academic areas. It is targeted to serve 200 to 300 passengers daily.

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SINGAPORE — By the end of next year, the Nanyang Technological University (NTU) will have an autonomous shuttle service serving the entire campus.

The fully automated Group Rapid Transit (GRT) will operate a minibus service route that connects the halls of residences with the main academic areas, and it is targeted to serve 200 to 300 passengers daily.

The shuttle service, which is on trial for the moment, is expected to be tested further in phases from the last quarter of this year.

NTU made the announcement jointly with transport operator SMRT and Netherlands-based automated-vehicles company 2getthere on Monday (April 16), when they signed a Memorandum of Understanding (MoU).

The MoU paves the way for the GRT minibuses, developed by the Dutch company, to be “integrated into NTU’s transport network”, the three parties said in a statement. The buses will run alongside other autonomous vehicles that have already been undergoing tests on campus since 2012.

Each driver-less minibus on the bi-directional GRT route uses magnetic pellets embedded in the road for navigation, has a range of sensors onboard to prevent collision, and can ferry 24 passengers with seating space for eight.

During a demonstration to the press on Monday, the vehicle slowed to a crawl whenever it sensed that there was someone on the road near it, or came to a complete halt if there was an obstacle ahead.

For the test runs, as an added safety precaution, each of the fully electric minibus will have an engineer onboard to take control of the vehicles should the need arises.

While the minibus has a maximum cruising speed of 60km/h, it will travel at around 10km/h during the ongoing trial period.

The vehicles were introduced to NTU last September as part of a “mobility-as-a-service” testbed, which is a collaboration between NTU, SMRT and industrial property developer JTC. The project aims to integrate multiple modes of transport, including shuttle buses, bike-sharing systems, e-scooters and e-bikes, as well as the autonomous GRT into a single mobility platform called “Jalan-jalan”, developed by mobilityX, an SMRT seed-funded start-up.

The pilot run of the smartphone mobile application for Jalan-jalan already started last August, and it has been used to book more than 67,000 trips for e-scooters alone, by commuters getting around NTU and industrial property developer JTC’s CleanTech Park, which is located next to the university.

Plans are in the works to explore the possibility of extending the GRT’s network to include the CleanTech Park.

### THE IDEAL SPEED

Speaking to TODAY, NTU students said that they found the Jalan-jalan app useful in offering them different modes of transport around the campus, especially at odd hours when public transport services have stopped operating. However, they were lukewarm towards the prospect of travelling on autonomous vehicles.

First-year business student Wong Pin Jia, for example, said that they are “too slow”, and preferred the convenience and speed offered by e-scooters, particularly when he is in a rush.

An NTU spokesperson told TODAY that there are no plans to increase the speed of the GRT “for the safety considerations” of passengers and other drivers along the road.

“It’s still undergoing trials, and that’s the purpose of why we are testing it... to find that sweet point for a speed suitable for the roads,” the spokesperson added.

On the latest development, NTU’s president Subra Suresh said that the university is “no stranger” to research and development projects, and the “entire campus is a hotbed for research innovations with multiple ongoing projects being tested.”

Among the autonomous vehicle technologies that have been tested since 2012 is electric and autonomous minibuses from French company Navya Arma. NTU also partnered with electric vehicle car-sharing operator BlueSG in January to launch an ultra-fast charging electric shuttle bus service in January, and is collaborating with automobile maker Volvo to develop “one of the first” fully-electric and autonomous 40-seater buses.

Prof Suresh said: “Public transportation plays a critical role in Singapore’s economic growth...(and) we are proud to have a hand in shaping the future of Singapore’s public transportation.”