

## NTU partners SMRT and 2getthere to test autonomous vehicles on the NTU Smart Campus

Nanyang Technological University, Singapore (NTU Singapore), SMRT Services and 2getthere have joined forces to deploy fully automated **Group Rapid Transit (GRT)** autonomous vehicles (AV) on the NTU Smart Campus by 2019.

The silent roadster uses magnetic pellets on the road for autonomous navigation and can travel in both directions. It has a top speed of 40 kilometres per hour and can ferry 24 passengers with seating space for eight.

The three parties signed a Memorandum of Understanding (MoU) at a ceremony today, paving the way for the GRT to be integrated into NTU's transport network. The parties are also exploring the possibility of extending this to JTC's CleanTech Park.

The new GRTs will be tested on NTU's campus in a few phases, which will start around the last quarter this year. The vehicles are expected to operate a service route that connects NTU's halls of residences with the main academic areas, serving 200 to 300 passengers daily.

The collaboration will also involve conducting research to improve autonomous vehicle technologies such as increasing the use of artificial intelligence, developing advanced sensors and sensor fusion algorithms, and improving fleet management technologies.

The trial would be gradually expanded campus-wide, running alongside other autonomous vehicles that have already been undergoing tests since 2012. This latest testbedding of autonomous vehicles is part of the university's Smart Campus initiative to develop rapidly advancing transport technologies to benefit the NTU community and society.

**NTU President Professor Subra Suresh**, said, "NTU's campus is not only a living testbed for innovative technologies, but also the first to test driverless vehicles in Singapore. Autonomous vehicles are an integral part of the NTU Smart Campus vision, which leverages tech-enabled solutions to create better living and learning experiences. This new collaboration with SMRT and 2getthere highlights our goal of developing cutting-edge transport solutions that will benefit Singapore and beyond."

**Mr Desmond Kuek, President and Group CEO of SMRT**, said, "NTU is a leading research institution in AV technology. SMRT is proud to work with NTU and 2getthere to deploy the first operational AV service in Singapore. This MoU marks the commitment of the three parties in leveraging the latest AV technology for our public transport system and redefine the standard for a world-class transport service."

**Mr Sjoerd van der Zwaan, Chief Technology Officer of 2getthere**, stated, "It is exciting to be able to work together with NTU and SMRT while capitalising on the synergy of an actual AV implementation and investing in research simultaneously. NTU has ample experience with

autonomous vehicles and knows exactly what it wants and what it doesn't want - in terms of availability, reliability, quality, safety and AV features such as comfort and user experience. In combination with SMRT's operations expertise, all key ingredients are present to ensure a successful implementation of our AVs at NTU. We look forward to our continued cooperation."

The GRT had undergone preliminary tests along a 350-metre route between two NTU halls of residences since November last year. During the trials, close to 4,000 passengers were ferried between the two stops.

### **Part of the joint Mobility-as-a-Service testbed**

The GRT was introduced to NTU as part of the **Mobility-as-a-Service** testbed, a collaboration between NTU, JTC and SMRT last September.

The testbed seeks to integrate multiple modes of transport, including shuttle buses, bike sharing systems, e-scooters and e-bikes, and the autonomous GRT into a single mobility platform called jalan-jalan, developed by mobilityX to improve connectivity and travel within NTU's campus and JTC's CleanTech Park in Jurong Innovation District, which will be the largest living lab in Singapore. Jalan-jalan is a Malay term for 'going for a walk'.

The smartphone application jalan-jalan received strong support during its pilot run between NTU's campus and JTC's CleanTech Park from last August. Just for e-scooters alone, the app was used to book over 67,000 trips, clocking a total mileage of over 80,000 kilometres.

**Edward Lim Xun Qian, President of NTU's Students' Union**, said, "The app allows a seamless and convenient way to travel around NTU's large campus, right from our halls to our classes. Not only does it help us book Personal Mobility Devices such as e-scooters, the app is also integrated with public and shuttle buses around campus, providing an all-in-one transport solution for students."

**Colin Lim, mobilityX CEO** said, "The NTU and CTP community have a greater range of transport options, and have experienced improved connectivity through innovative first-and-last mile transport solutions like the AV and scooter and bicycle sharing. For example, the utilisation rate of each scooter at approximately 20 trips/day is one of the highest in Singapore."

**Glory Wee, Director, Aerospace, Marine and Urban Solutions, JTC** said, "We are delighted by the positive response from the CleanTech Park community on the trial. Urban solutions, such as Mobility-as-a-Service, help us improve the travel experience of the communities in JTC's estates and lay the foundation for next-generation connectivity and mobility infrastructure in our new estates.

Currently serving 16 stops on NTU's campus and the CleanTech Park area, the app will gradually include more stops and manage more mobility options based on users' feedback and test results.

Please see the [Annex](#) for more details on the 2getthere GRT autonomous vehicle.



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