World's first full-sized, driverless electric bus launched by NTU and Volvo

SINGAPORE — The Nanyang Technological University (NTU) and Volvo Buses have launched a full-sized, driverless electric bus — in what is said to be a world-first for autonomous vehicles.

The single-deck, 30-seater bus is 12 metres long and has a full capacity of close to 60 passengers. Existing autonomous electric buses, such as one designed by French transport company Navya-Raiibus and currently used at the university, can accommodate only 25 passengers.

The driverless bus utilizes an artificial intelligence system developed by NTU researchers and includes five types of sensors — such as light detection and ranging sensors — and a specialized global positioning system (GPS) that is able to provide location accuracy up to one centimetre.

NTU professor Shipu Zhou said at the launch of the Centre of Excellence for Testing & Research of Autonomous Vehicles (CENTRAS) on Tuesday that the fully electric bus “operates quietly and smoothly with zero emissions, requiring 10 per cent less energy than an equivalent sized diesel bus”.

![Image of the autonomous bus developed by NTU and Volvo Buses.](https://example.com/autonomous-bus.jpg)

The electric bus will be tested at a maximum speed of 40 kilometres per hour within the NTU campus, although it has the ability to travel autonomously up to a speed of 60 kilometres per hour, said Dr Zhou.

The electric bus has been electrically powered and tested at the Singapore Centre of Excellence for Testing & Research of Autonomous Vehicles (CENTRAS) at the National University of Singapore.

The bus will also be tested on a real-world road network in a city environment, said Dr Zhou. The tests will be conducted in collaboration with the Land Transport Authority (LTA) and the Smart Mobility Testbed Singapore.

The fully autonomous bus, with a capacity of 30 seats, will be used to test various aspects of autonomous driving technology, such as collision avoidance, lane changing and merging, and autonomous emergency braking.

In April last year, the university announced the launch of the fully autonomous bus at the Smart Mobility Testbed Singapore, which is a collection of various autonomous vehicles and connected and automated vehicles.

The fully autonomous bus is expected to be available for public use in the near future, with initial testing and validation planned to begin in the coming months. The bus is expected to be rolled out on public roads in the next few years, with the aim of significantly reducing carbon emissions and improving road safety.