

## Technology

# Volvo unveils world's first full-size autonomous electric bus

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Volvo Buses and Nanyang Technological University (NTU) in Singapore have demonstrated the world's first 40-foot autonomous electric bus. Photo: Volvo

Volvo Buses and [Nanyang Technological University](#) (NTU) in Singapore have demonstrated the world's first 40-foot autonomous electric bus. The Volvo bus will soon begin trials on the NTU campus.

The bus is equipped with four Lidar sensors, which enables it to detect and stop for objects coming in its way.

The 85-passenger Volvo 7900 Electric bus is equipped with

sensors and navigation controls that are managed by a comprehensive artificial intelligence (AI) system. Ensuring maximum safety and reliability, the AI system is also protected with cyber-security measures to prevent unwanted intrusions.

The Volvo bus has undergone preliminary rounds of rigorous testing at the Centre of Excellence for Testing and Research of [Autonomous vehicles](#) (CETRAN).



Plans are in place to test the bus on NTU campus and to extend the route beyond the university.

The fully autonomous electric bus provides a quiet operation with zero emissions. It requires 80% less energy than an equivalent sized diesel bus, according to the company.

This is Volvo's first autonomous fully electric bus in public transportation.

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The bus comes with a Volvo autonomous research software that is connected to key controls and multiple sensors. NTU researchers have enhanced it with an AI system that communicates with sensors, enabling the bus to operate autonomously.

This includes light detection and ranging sensors (LIDARS), 360-degree cameras and an advanced global navigation satellite system that uses real-time kinematics. This is like any global positioning system, but uses multiple data sources to give pin-point location accuracy up to one centimetre.

The system is hooked-up to an "inertial management unit", measuring the bus's lateral and angular rate. This will improve the bus's navigation when going over uneven terrain, ensuring a smooth ride.

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