The road sweeper and a self-driving minivan travelled the same track with vans, jamming their navigation systems with a screen of artificial — or ‘regulatory’ — data. Welcome to Singapore’s new self-driving test centre complete with traffic lights and real skyscrapers, which is all the heat of the city’s test track is lacking in — becoming a hub for autonomous technology.

This is a 4.6km loop that has cars, in silver, turn, traffic lights, a slope, and a road to simulate real driving conditions. Shipping containers are also stacked up to simulate how high-rise could potentially look in real life signals to self-driving machines.

The C-TAMAN centre, run by Nanyang Technological University (NTU), even has self-testing machines that can simulate the frequent tropical downpours in the Southeast Asian city-state of 7.3m people. “Before you are ready to go to the public roads, we test them here to see if they are actually ready,” said Neil De Bree, programme director at the centre. Negotiating turns, dodging pedestrians

All companies push their auto-man through the city’s testing and certification procedures before they are allowed to hit the public roads. The sweeper is being tested as part of a government plan that could eventually see them deployed in the city, according to local media, while cars and buses are also being tested, and trials of delivery robots will soon take place.

The government has let the drive towards autonomous tech, so it needs to attract more foreign firms and because it sees the technology as useful for public transport and delivery services.

In 2016, the software firm nuTonomy launched self-driving taxis in public in Singapore, becoming the first company in the world to do so.

Authorities aim to deploy autonomous public transport in three areas by 2022. Self-driving vehicles will involve the use in the public transport network for tasks such as shuttling people to stations and stops from their homes or workplaces, said

It’s a journey that may take ten to 20 years, but I think it’s inevitable,”

Salvado Khooiakar, an NTU professor involved in the autonomous vehicle programme, De Bree from the C-TRAN centre said authorities were working on ensuring the correct regulations, such as traffic laws, are put in place for self-driving vehicles.

Bumpy path to success

There are still many roadblocks ahead, however. Safety remains a major concern for the industry worldwide — in 2018, a self-driving Uber was involved in a crash that killed a woman in Arizona. All roads in Singapore still require curbside drive and most vehicles are not yet ready to cope with the regular tropical downpours.

“It would be very difficult to test in the whole island simply because the rainfall is intense,” said Jean-Christophe Durand, a research professor at Singapore Management University. The key challenge is not making people hide away from driving vehicles, and ensuring that the technology will have to be introduced in stages.

“It’s a journey that may take ten to 20 years, but I think it’s inevitable,” NTU’s Khooiakar said.

Mock skyscrapers, simulated rain at Singapore self-driving test centre as nation sees future in autonomous transport