

New SMRT-NTU lab out to improve rail reliability, safety

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Finance Minister Heng Swee Keat (right, in glasses) attending the official opening of the SMRT-NTU Smart Urban Rail Corporate Laboratory on 29 August, 2018. (PHOTO: NTU)

Rail operator SMRT and Nanyang Technology University (NTU) are teaming up to develop and trial multiple innovations aimed at improving rail reliability and safety.

For instance, new sensor systems that can detect train door faults and alert engineers in advance are just one of 13 ongoing projects in development at the SMRT-NTU Smart Urban Rail Corporate Laboratory.

The \$60 million facility, located on the Nanyang Technological University campus, was officially opened on Wednesday (29 August) by Finance Minister Heng Swee Keat.

Heng is also the chairman of the National Research Foundation (NRF), which began supporting the SMRT-NTU partnership two years ago.

“We have been putting in a lot of effort to improve rail reliability and sustain the progress made,” said SMRT Group chief executive officer Neo Kian Hong, who attended the launch.

“At the same time, we will tap on top-notch engineering resources in Singapore to solve problems that affect our train services, such as train door, track or power supply issues.”

The new sensors are currently undergoing trials on a train that has been serving the North-South and East-West Lines since June. They will be progressively implemented across the train network, said the NRF, SMRT, and NTU in a joint press release.

Three other innovations developed at the laboratory will also begin network trials starting next year.

Among them is a train-mounted, real-time condition monitoring system that will go on trial from the first quarter of next year. The system uses radio frequency technology to monitor the electrical contact between the trains and the track, and can pick up defects on the power rails and running rails along the network in advance.

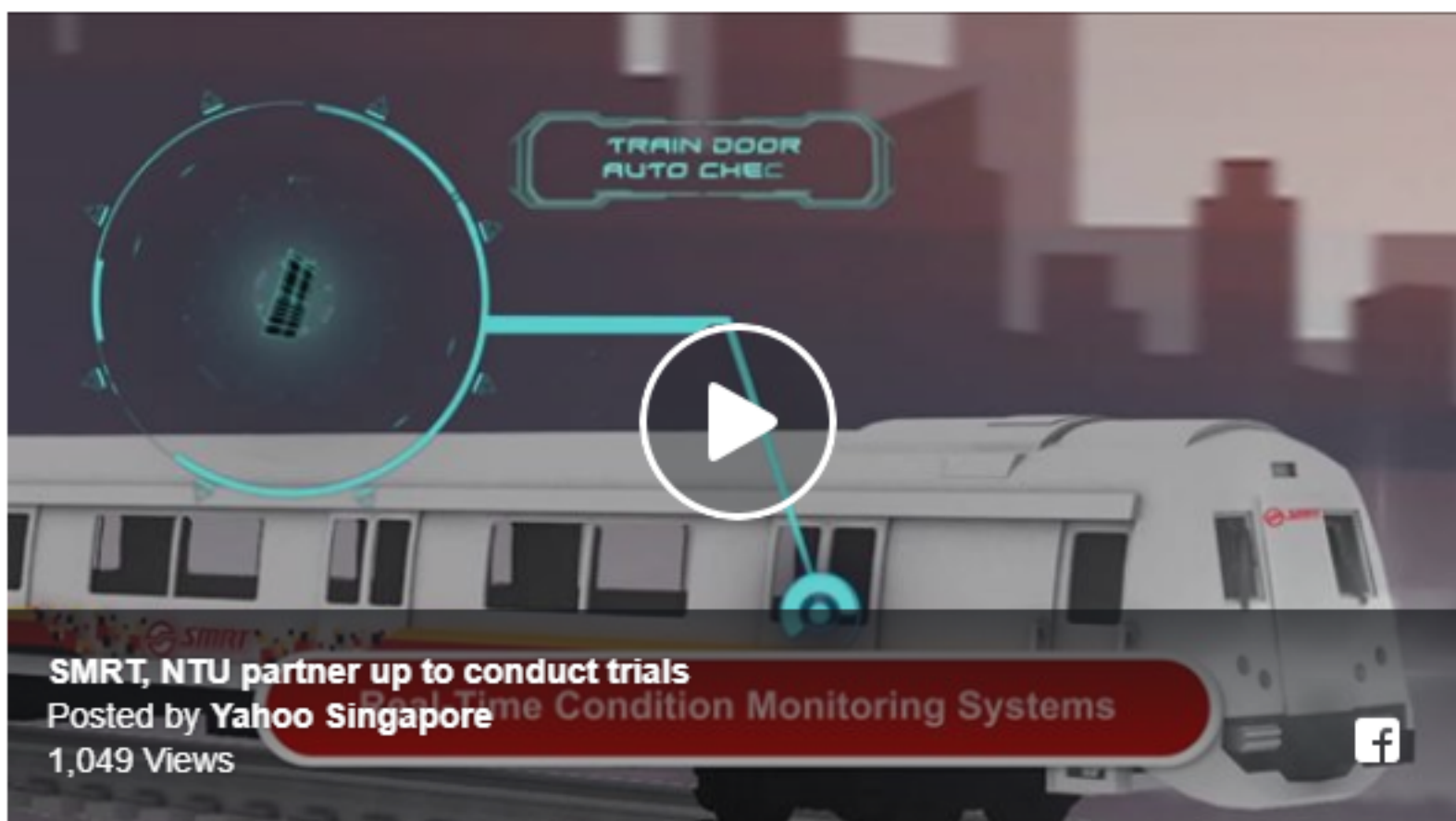
This will allow speedier intervention by engineering teams, minimising the chance of service delays due to track faults, added the joint release.

Other innovations include a portable robot with a track-mounted sensor that can inspect train axles and a high-precision mobile laser cladding repair system.

The former – to be trialed in the second quarter of next year – is expected to improve train safety and increase the frequency of inspections by allowing checks to be conducted without having to detach the train wheels and axles.

The mobile laser-cladding repair system, ready for trials by 2020, can repair worn-out rails overnight, cutting down the current three-night timeframe.

“We will work closely with the Land Transport Authority to test these new technologies on our network, and eventually implement them islandwide to improve the MRT services we provide to the public,” said Neo.



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