

SMRT, NTU develop system to detect train door faults

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More than half of MRT delays that last less than five minutes are due to train door faults, causing trains to stay longer at stations before moving off.

But a solution is in the works. A prototype advanced train door sensor system is being tested on a train to detect issues early for maintenance work to be done before the faults occur.

This monitoring system collects data on air pressure, movement speed and the power supply of the pneumatic train doors. The information helps engineers to troubleshoot faults and better predict when failures will occur.

Jointly developed by rail operator SMRT and the Nanyang Technological University (NTU), it has been fitted, since June, on a set of doors of a train deployed on the North-South and East-West lines.

The advanced system is among 13 research projects the SMRT and NTU are collaborating on at the SMRT-NTU Smart Urban Rail Corporate Laboratory, which is developing monitoring and sensor systems to improve rail reliability.

The lab was officially opened yesterday by Finance Minister Heng Swee Keat, who is also chairman of the National Research Foundation (NRF).

The setting up of the \$60-million facility was announced two years ago, with SMRT, NTU and the NRF providing equal funding. There are 70 NTU researchers and 30 SMRT staff working at the lab, one of 12 corporate labs supported by the NRF. Other research areas include advanced robotics, food tech-



Associate Professor Ling Keck Voon from NTU's School of Electrical & Electronic Engineering showing the door sensor system. PHOTO: LIANHE ZAOBAO

nology and sustainable urban solutions.

Mr Heng said the SMRT-NTU lab “aims to drive the effective translation of research into solutions that have direct relevance not just to SMRT, but also to the global transport industry in anticipation of future needs”.

Its opening is timely, he noted. Part of the reason is that Singapore's rail network will double to 360km by 2030.

Also, a strong public transport system is needed to sustain people's support for the Government's push for a car-lite society, he said.

To meet people's needs, Singapore has to invest in “rail engineering capabilities that are tailored to our needs and conditions”, he added.

Next year, trials for two other projects will kick off. One is a monitoring system mounted on a train that can pick up defects on the power rail and running rails. The second is a portable robot that can inspect train axles at the depot.

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