

Siemens Mobility to set up Singapore's Downtown Line signalling simulation center

- **Digital twin of Downtown Line's signalling system**
- **Supports troubleshooting, testing and training**
- **Intelligent infrastructure will minimize service disruptions**

Siemens Mobility has been awarded a contract by the Singapore Land Transport Authority (LTA) to design and establish a simulation center for the Downtown Line's (DTL) signalling system. The center will enable in-depth and faster technical analysis surrounding signalling-related incidents, enhance testing of new signalling features and system functionalities before deployment as well as increase capabilities for training LTA and the operator's technical staff.

The DTL is one of Singapore's longest mass transit lines – with nearly 42 kilometers of track and 34 stations from Bukit Panjang in the north-west to Expo in the east, with a daily ridership of more than 500,000. When its expansion is completed in 2024, it will be 44 kilometers long with an additional three stations. The test center, which will be ready by end of 2020, will enable testing and integration of the DTL's signalling system before these three new stations commence operations. The test center will be located in Gali Batu Depot, where the DTL's operation control center is housed.

DTL currently uses Siemens Mobility's signalling system and automatic train operations. The test center will be a digital twin of DTL's signalling system, with capabilities to test key hardware interfaces. It will digitally simulate these operations to eliminate any risks of service disruptions during system enhancements, troubleshooting, vulnerability checks, system patching, as well as allow testing of new software releases prior to deployment. It will also allow hands-on trainings and thus boost operations and maintenance competency.

Siemens Mobility GmbH
Communications
Head: Frederick Jeske-Schoenhoven

Otto-Hahn-Ring 6
81739 Munich
Germany

“Singapore is at the forefront of mass transit technology. By utilizing digitalization, LTA’s operations will see greater availability and reliability. Data analytics and preventive failure prediction that was previously done on the lines will now be done remotely and digitally, without impacting operations or passenger service”, said Michael Peter, CEO of Siemens Mobility.

The test center will include hardware similar to the rest of the system, including:

- WESTRACE MKII interlocking, Trackside TRAIINGUARD Communications-Based Train Control (CBTC) System and radio network equipment;
- Trainborne TRAIINGUARD CBTC System;
- RAIL9000 Automatic Train Supervision (ATS) System in Depots and Operation Centres

The test center will be established in two stages and completed by end-2020. The first will include ATS simulation environment and the second will include the full test environment: CBTC, interlocking, communications and trackside elements.

Siemens Mobility is playing an important role in transforming Singapore’s transportation infrastructure. In addition to the signalling and test center for DTL, it will also provide electrification for two other mass transit projects: Circle Line Stage 6 and North East Line extension. The company also operates one of its digital labs in Singapore, transforming the future of road traffic and is conducting extensive autonomous driving research with its partner CETRAN.

Contact for journalists

Kara Evanko

Phone: +1 202 285 3072; E-mail: kara.evanko@siemens.com

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