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Press release

Well under way: Berlin's new S-Bahn is making its rounds at the world's largest test center for rolling stock

The new S-Bahn trains for Berlin must complete 160,000 kilometers of extensive tests and measurements – next milestone reached

(Berlin, April 11, 2019) The new trains of the Berlin S-Bahn have become something like a teenager: fully grown, fit, ready for anything, yet still a bit inexperienced. To reach the maturity needed for carrying passengers, they must currently pass extensive tests.

The first five trains have been making their rounds at the Test and Validation Center (PCW) of Siemens Mobility in Wegberg-Wildenrath (North Rhine-Westphalia) since last fall. Before being allowed to undertake their first test runs on the Berlin S-Bahn network, the trains are being thoroughly tested at the world's largest test center for rail vehicles.

These tests include:

- so-called "developer tests" to check the interaction of traction drives and brake systems
- Weighing and distortion tests to protect against derailment
- Electromagnetic compatibility tests (EMV)
- Brake tests for measuring braking distances
- Testing and fine adjustment of wheel slide protection and skid control under various load conditions and speeds

The type tests of the traction drive are used to verify the train's acceleration rates and travel times. Tests are also conducted on the functioning and interaction of the current collectors with the Berlin S-Bahn power rail, the accurate detection of power rail gaps, and the capability to maintain electrical system operation while crossing section interfaces in the Berlin infrastructure.

Peter Buchner, CEO of S-Bahn Berlin: "Beginning in 2021, we want to provide our passengers a train that brings them reliably, quickly and comfortably to their destination. To ensure this, the new trains will be tested intensively over a period of two years. As DB AG, we will closely support the manufacturer consortium in their work."

"The Berlin public expects S-Bahn trains that operate smoothly from day one. With our state-of-the-art infrastructure, our highly qualified experts and the innovative testing services provided in our Testing and Validation Center, we are making a decisive contribution toward ensuring such service. The PCW makes it possible to carry out tests 24 hours a day, 365 days a year," says Sabrina Soussan, CEO of Siemens Mobility.

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“The rounds on the test ring are another important milestone after each system has been activated step-by-step. This ensures that all these systems – from the traction drive and brakes to the air conditioning system, windscreen wipers and door system – function flawlessly before the trains are permitted to begin their subsequent test rounds in the Berlin S-Bahn network,” explains Jure Mikolčić, CEO of Stadler Deutschland.

So far, the trains have completed around 2,000 test kilometers out of a planned total of roughly 160,000. After completing the developer tests, it is expected that the proof and driving technology type tests can begin on special sections of the Berlin S-Bahn network in the late summer of 2019. The test program for the Berlin train stop or tripper (a metal rail for automatically triggering an emergency braking), required for the train’s certification, can also be started then. Parallel to these proof tests of individual trains in the Berlin network, the S-Bahn trains will continue making their test rounds at the PCW to confirm that all specified functions and requirements for certification have been fulfilled.

The new trains will be used on the Berlin Ring/Southeast subnetwork as of 2021. The pilot series production consists of five half- and five quarter trains which will be delivered in 2020 and begin service on Line S 47 (Spindlersfeld-Südkreuz) in January 2021. The remaining 96 trains will enter service on the Ringbahn (S41, S42) and on the S46 and S8 lines by the end of 2023.

The Siemens Test and Validation Center

Virtually all types of trains and rail vehicles operating on standard-gauge and meter-gauge tracks as well as systems and components can be subjected to typical railway tests at the PCW. With facilities such as a high-voltage test system, an acoustic measuring rig, turn-tilt table, tipping equipment to determine rolling characteristics, and a vehicle weighing system, the PCW provides a full range of testing options. Trains, rolling stock and systems are tested under real-life conditions or simulated extreme conditions, with static or dynamic tests. Since the Test and Validation Center is certified and accredited by independent bodies for its testing procedures, the results of the tests can be used for regulatory approval.

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