A Hardware-in-the-loop Simulation System Duplicating the Actual Running Condition of the Train Consisting of Multiple Cars

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Bench tests for actual cars are effective for grasping their dynamic performance. However, they have not been able yet to duplicate the actual running conditions of the train consisting of multiple cars. We have developed a hardware-in-the-loop simulation (HILS) system composed of the actual car, a distributed real-time simulator, a real-time network and simulators that reproduces the dynamic behaviors of the end surfaces of the adjacent carbodies. In this report, we introduce the HILS system and show the results of the shaking test for the actual car which is assumed to be under the running condition of three-car train in the HILS system.