Structure Gauge Measuring Equipment using Laser Range Scanners and Structure Gauge Management System

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Ensuring the safety of train operation, it is important to measure the structure gauge periodically. The measurement requires much labor and time because the number of wayside facilities is enormous. Hence, we have been developing an inexpensive and efficient measuring equipment using laser range scanners. Also we are developing a management system, which maps the measured three-dimensional point cloud data to the facilities data. In this report, we describe the problems and solutions for applying the laser range scanners to structure gauging, along with the experimental results. Moreover, we report the development of the management system and the further developments of measurement and management of the structure gauge in the future.