Tackling the Challenge of Driverless Operation

Objectives

In recent years, remarkable progress has been made in developing driverless operation technology for automobiles. This technology has great potential with regard to addressing various social problems facing Japan as a whole, such as the declining birthrate and aging population and population decline in regional areas.

What’s more, rolling stock and signalling system control technology have a close affinity with driverless operation technology, and our Group is able to leverage the safe, stable transportation technology that we have developed to date. As part of our growth strategy for a new era, we are tackling the challenge of qualitatively reforming transportation services by enabling driverless operation, while also pursuing safety.

Trial of Driverless Train Operation System with Yamanote Line E235 Series

In addition to general automated operations that support operation by drivers, we are working on implementing driverless operation with personnel on board in case there is a need to deal with an emergency situation or the like.

The automatic train operation (ATO) system that we are developing on the Yamanote Line is a cutting-edge system which, in addition to the typical ATO functions already being implemented by other companies, optimizes operations in response to the operating conditions at a given time (e.g., train delays, unforeseen slowdowns).

Trials for the ATO system were conducted from December 2018 to April 2019, using Yamanote Line E235 railcars. The trials confirmed that the system was generally able to perform at the required level with regard to verification of various operations between arrival at and departure from stations, stopping accuracy, and travel time between stations.

Looking to the Future

We are aiming to pursue qualitative reform of our transportation services by conducting multiple trials, with ensuring safety a prerequisite. Furthermore, by pursuing the mechanization and systematization of tasks for which it is possible to replace human labor by applying cutting-edge technologies, we intend to shift our limited human resources toward creative work that can only be done by people and offer our customers a safe, comfortable transportation environment that will give them greater satisfaction.