“Values” Created by IT-FRENS & TRACE Systems
Toshiki HANAOKA

Information systems support the overall operation of companies by accelerating business decision-making and creating new values. We must realize that the role of information systems in business has exceeded the general scope of operation improvement; as a matter of fact, information itself has become a service. This article examines the values created by JR Freight’s “IT-FRENS & TRACE systems” and looks at the new services of container rail freight.

Running Results of the “Hi-tram”, Contact-wire/battery Hybrid LRV
Masanichi OGASA

Contact-wire/battery hybrid rail EVs run on a hybrid power source that enables energy to be fed from contact wires and/or on-board batteries. This paper concerns the hybrid source technology and the running results with rechargeable lithium ion battery on our developed LRV “Hi-tram”. It ran on a commercial service on-street line, cutting the energy consumption by maximum 30% over that of existing inverter vehicles, and also achieved the running distance by one spell of charge of 49 km on an existing railway main line.

Feasibility Study on Utilization of Track State Data for Disaster Prevention
Hiroki HIRAO

Yasuhito WATANABE

The Tokaido Shinkansen has 6 sets of the Series N700 commercial trains equipped with a newly developed digital inertial measuring device. They are used to measure the track irregularity data of longitudinal level multiple times a day. Measuring the data by the devices is so frequent and precise that it could be said as if we were monitoring the Japanese islands with distortion gauges pasted on them. Based on the knowledge, we studied the use of the track irregularity data of longitudinal level for disaster prevention.

Outline of Type EF 510-500 AC/DC Electric Locomotives
Shinichi HASEGAWA

At present JR East has 62 electric locomotives in operation, and they are not in good condition. The Type EF 81 DC electric locomotives used for the Cassiopeia and Hokuto-sei (Big Dipper) limited-express sleeping-car trains, which run between Tokyo and Sapporo as the star trains of JR East, have been deteriorating due to their average age of 34 years. This time it was decided to manufacture Type EF 510-500 AC/DC electric locomotives for replacing the aged Type EF 81 DC electric locomotives. This article describes these Type EF 510-500 AC/DC electric locomotives.

Introduction of Series 15000 Wide-Door Cars to the Tokyo Metro Tozai Line
Yuichi NAKASATO

Tokyo Metro, a public transportation company with ridership of 6.33 million passengers a day, operates nine subway lines mostly in the Tokyo Metropolitan Area. In recent years heavy congestion during the morning rush hours of the Tozai line, one of these lines, has caused chronic train delays. The Series 15000 wide-door cars are put into service as a way to facilitate passenger boarding and alighting in order to reduce train stoppage time at stations. This article gives the background for the introduction of the wide-door cars and details of the cars.