

CONTENTS & SUMMARY

Image Analysis Technologies Supporting Safe, Secure and Comfortable Railway Transport

Nobuo NUKAGA, Daisuke MATSUBARA

We are making efforts on collaboration with railway operators to solve social issues. We will, in this report, introduce our efforts on realizing compatibility between visualization of congestion and privacy protection by using Hitachi's strength of human flow analysis technologies and design capabilities. In addition, safety and security in public transportation is an important issue for railway operators. We will, therefore, also report a person tracking solution that enables efficient guard at large-scale facilities, etc.

Development of Station Ticket Counter Support Application.

— Mitigating Station Counter Congestion Using Tablet Devices and Robots —

Kazuya URAZATO, Isamu MATSUDA, Kazuhiro NAKAMURA

We present an overview of the Ticket Counter Support Application developed to mitigate congestion at staffed ticket counters and its expected effects.

Evaluation of Soundness for Concrete Poles Supporting Overhead Contact Lines

Mizuki TSUNEMOTO, Masatoshi SHIMIZU, Yuichi KONDO, Toru IJIMA

The criterion whether or not a concrete catenary pole needs to be replaced is not clear so far. Therefore, criteria and procedure that can be used to plan their replacement are required. This paper outlines a new evaluation method of soundness for concrete poles suspending overhead contact lines by "strength evaluation" and "material evaluation," as well as the "visual inspection."

Maintenance of the Tokaido Shinkansen Tunnels

Kazumasa KATSUMI, Yasushi SAKAMOTO

Tunnels as civil structures play a key role on the Tokaido Shinkansen line in offering safe and undisturbed transport as they account for about 13% of the entire length of the line. At the same time, tunnels are civil structures that are extremely difficult to replace. Therefore, it is necessary to maintain their structural integrity through appropriate inspection and repair to maximize their service life. This paper presents some of the maintenance and repair efforts being made on the Tokaido Shinkansen tunnels.

Outline of Battery-mounted Diesel Electric Hybrid Vehicle "YC1 Series"

Koki UMESHIITA, Keitaro YASUMORI

While the number of vehicles available in conventional lines of the Kyushu Railway Company is about 1,500, vehicles transferred from the Japanese National Railways account for about 20% of that. Since vehicles that deteriorate due to service over 40 years have to be replaced, we have developed two types of vehicles: next generation suburban trains (821 series) and battery-mounted diesel electric hybrid vehicles "YC1 series" based on the concept for development, "Comfortable and Powerful Vehicle." This report introduces the outline of the YC1 series.

Image-based Education Using Gaze Movements of Conductors via Eye-tracking System

Takashi HIGUCHI, Daiju GOTO, Norie KOBAYASHI, Asuka HAYASHI

Conductors on conventional-line trains (hereinafter, "conductors") must be trained specifically about points to be checked, as well as methods and criteria for checking, in order to ensure the safest operation possible. In reality, though, conductors have so far been trained only in abstract and intuitive ways because it was difficult until now to quantify the important points known by highly experienced conductors. We therefore introduced an eye-tracking system that can visualize, measure, and record gaze movements; acquired and analyzed gaze data from well-experienced conductors during safety checks; and started providing specific education based on analysis results.

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Tetsuo UZUKA

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