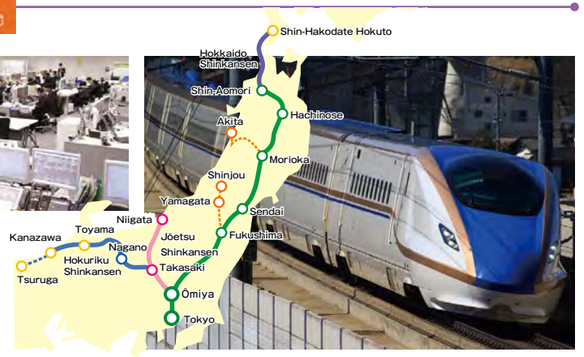
SIGNAL & TELECOMMUNICATION SYSTEM

Signal and telecommunication system for safe and reliable railway transportation

Train control / Telecommunication

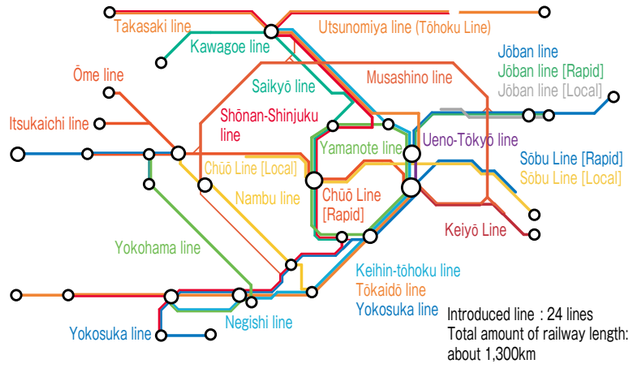
Reinforcement of Shinkansen Systems

COSMOS (Computerized Safety Maintenance and Operation Systems of Shinkansen) stores timetable information and provides optimal traffic management under various operational situations. To provide the safe and stable transportation of Shinkansen, we are working to improve services and reliability, such as providing multiple language for guidance announcement and enhancing network and security function.



ATOS Renewal

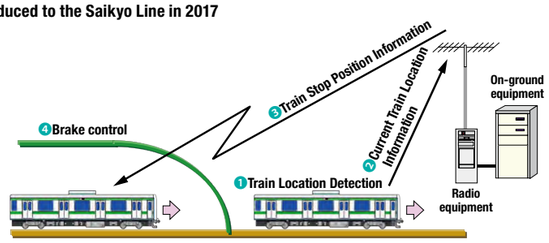
ATOS enables automatic train control. We are currently introducing a new predictive timetable as well as systemizing the arrangement of conductors in order to improve quick recovery of lost time.



Introduced line : 24 lines
Total amount of railway length: about 1,300km

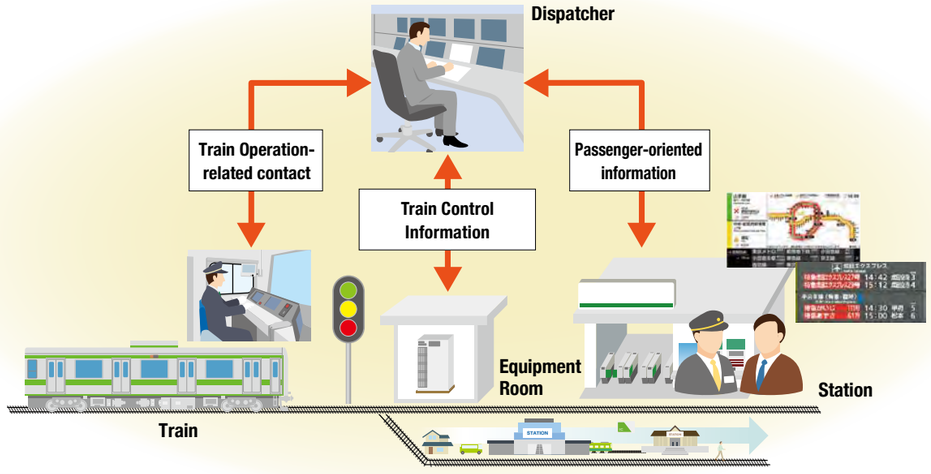
Development of radio-based train control system

Introduced to the Saikyo Line in 2017

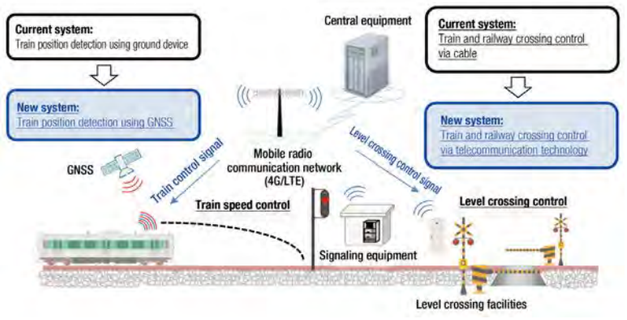


In Tokyo metropolitan area, we carry out installing ATACS (Advanced Train Administration and Communication System) which is the radio-based train control system for transformation of railway facilities and transportation services. We will promote the planning of installation work for the Keihin Tohoku line, and functional studies for driverless train operations such as ATO.

Signal / Telecommunication system



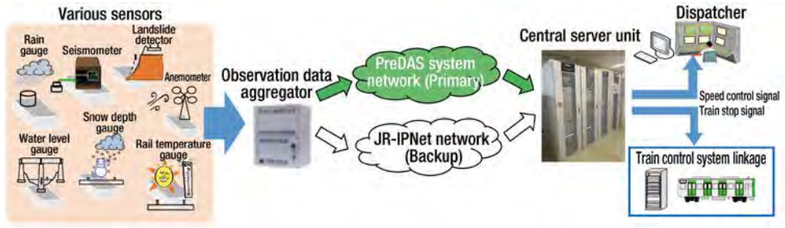
Signaling system with GNSS and mobile telecommunication technology Development



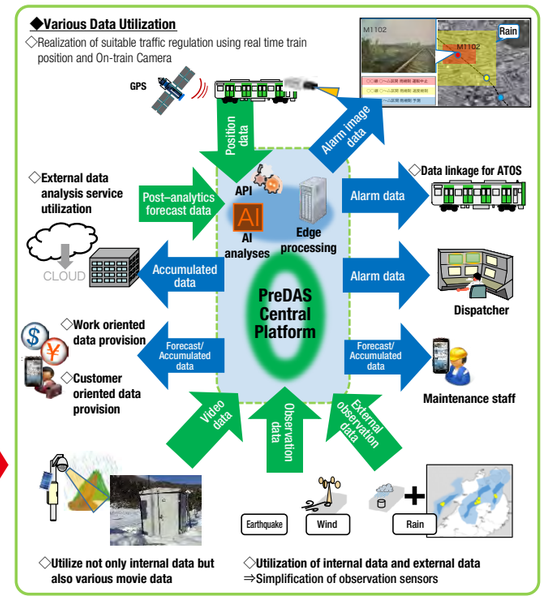
In order to reduce the amount of train control devices and to improve the reliability of railway in low density line, new level crossing and train control system is developed. It is the first system that acquires the train positioning information utilizing Global Navigation Satellite Systems (GNSS) technology, and also communicates with each devices (on-board and on-ground) using mobile telecommunication technology. Currently, the system is within testing phase on Hachiko-Line with the target of practical implementation in several years.

Updating of disaster prevention information system(PreDAS: Prevention of Disaster Alarm System)

The disaster prevention information system (PreDAS) is a system for detecting the occurrence of natural disasters. When natural disasters is detected, PreDAS will take action to quickly and safely stop the train operations. In order to respond to the environmental changes (example : intensifying weather conditions) and support the development of autonomous driving, PreDAS system will be developed further by improving safety and reducing the maintenance load.



In addition to our own observation data, we plan to utilize more technology and methods to improve PreDAS such as follows
1. External Data Analysis Services
2. External Observation Data
3. Video Data beyond the railway lines area (Example : Snow condition)
With the accumulation of observation data, we are considering the creation of business-oriented data We aim and consider PreDAS to be the central platform that contributes to safe and stable transportation which adds new value.



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