

JEIS Services

JEIS stands ready to support the system integration of any type of railway at any time to help you achieve efficient, safe and reliable railway operation.



Railway Operation Management



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JEIS stands ready to help you systematize your transport operations. JEIS has worked constantly to remain a leader in the creation of various transport operation systems that make it possible to achieve the efficiency, safety and reliability required for railway management. These transport operation systems offer merits not just to high-speed railways such as the Shinkansen, but to all railways regardless of scale or format. JEIS analyzes your business control processes and proposes the systems needed for today's management environment with the aim of creating a comprehensive transport system including transport and facility control.

*JEIS: JR East Japan Information Systems Company

Approaches Toward Systemization

Railway operators must pursue efficiency, safety and reliability regardless of railway scale or format. It is from this perspective that JEIS promotes systemization.

Efficiency

- 1) Station personnel and district office staff can be reduced by centralizing train operation authority.
- 2) Train operators can be reduced by automating route control.
- 3) Drivers can set maintenance car routes by wireless, making it possible to reduce handling personnel.
- 4) Facility control personnel can be reduced by measuring rail, catenary, signal level and other conditions at regular intervals by running special inspection trains.
- 5) Car inspection and repair histories, parts data and other control data are compiled into adatabase, making it possible to share control data between scattered rolling stock depots and reduce costs.



Reliability

- 1) Train schedules based on a regularly revised basic operation schedule are prepared through system dialogin accordance with fluctuations in the number of passengers due to seasons, ??weekdays?? or holidays, etc. Traincontrol, rolling stock control, train crew duties, maintenance work and other work are planned using these prepared operation schedules.
- 2) Future train operation is forecast to perform accurate operation control.
- 3) Train locations, types and coupling conditions are displayed visually.
- 4) Routes are controlled automatically based on the forecast operation schedule.
- 5) Passenger information and announcements are controlled in accordance with train operation.
- 6) Changes and revisions to operation schedules are transmitted instantly and accurately to related sites, and reception can be confirmed.

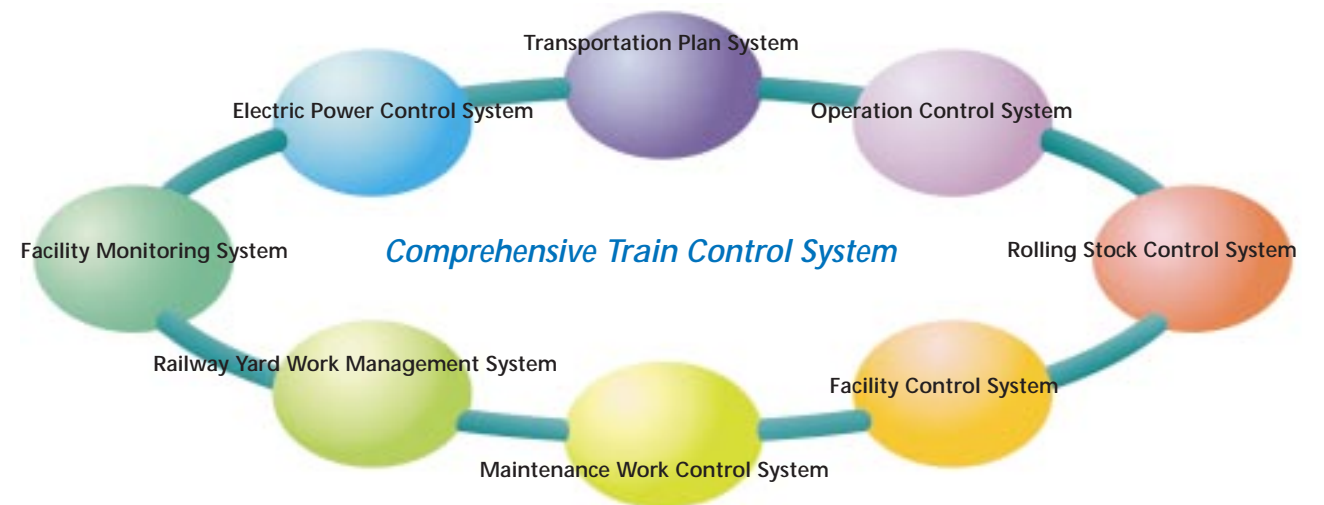
Safety

- 1) **Train operation:** Meteorological information (rainfall, wind speed, snow accumulation, rail temperature, etc.) and disaster information (earthquake information, etc.) is collected from along the lines to assist in the formulation of appropriate measures (speed limits, stopping) to ensure safe train operation.
- 2) **Maintenance work:** Conflicts between different maintenance work or with the operation schedule are investigated using a database containing information input directly from terminals at the actual maintenance work sites, and work periods and train operation periods are automatically proposed.

Overview of Functions

Example of introduction to the Shinkansen

This example shows the introduction of systems developed by JEIS to the Shinkansen.



Transportation Plan System

This system prepares both basic and temporary train, rolling stock and train crew duty plans. It also prepares rolling stock inspection plans and assigns rolling stock for train operation during inspection periods. The plans for the following two days are sent to the Operation Control System, and all plans from the current day onward are sent to train operation sites such as stations and train crew offices, and to the Maintenance Work Control System as the planned operation schedule.

Operation Control System

This system displays the forecast operation schedule for future train running, and allows the operation schedule to be revised by entering changes directly into the line-type diagram. Routes can be displayed and operated on the same screen. Also, operation schedules are stored in the station PRC, allowing automatic route configuration. Passenger information and announcements are provided on the basis of the tracking information in the station PRC. This system also lets maintenance workers request maintenance car routes during work periods from work terminals.

Rolling Stock Control System

This system controls rolling stock and fittings from manufacture to scrapping, and prepares data that shows various equipment conditions and reliability. Malfunction information is input in real time at the work site and controlled as history information. This system also controls rolling stock inspections, wear and ??replacement?? periods, etc.

Facility Control System

This system analyzes, statistically processes, retrieves and transmits inspection train data. It facilitates the retrieval of data required for maintenance work, and supports the preparation of maintenance work plans.

Maintenance Work Control System

This system makes it possible to submit work plans from work office terminals, automate acceptance processing, report the commencement and conclusion of maintenance work from mobile terminals, and retrieve and confirm maintenance work progress.

Railway Yard Work Management System

This system supports the preparation of yard work plans and yard shunting schedules on the basis of planned and final operation schedules, and makes it possible to track rolling stock locations and control routes within the yard.

Facility Monitoring System

This system monitors the conditions of "Shinkansen ground facility" and "machine room facility" equipment, and issues an alarm or otherwise alerts the controllers when a malfunction occurs. It also centrally controls the "wind, snow, rain and rail temperature" information gathered from the various measurement devices.

Electric Power Control System

This system controls and monitors the ??on-time stop-go?? electric power system, and monitors the substation, catenary, switchboard and other equipment conditions.

JEIS* and East Japan Railway Company

* JEIS: JR East Japan Information Systems Company

East Japan Railway Company is one of the foremost railway companies in the world, operating the Tokohu, Joetsu and Nagano Shinkansen as well as numerous conventional lines. JR East handles passenger transport within the National Capital region centering on Tokyo as well as for interurban transport within eastern Japan. JEIS was solely responsible for creating the systems necessary for these operations.

JEIS Business Outline

Number of employees: 1,050
Annual sales: 47.3 billion yen

East Japan Railway Company - Railway business scale

Operating kilometerage: 7,497.6 km (Shinkansen: 838.9 km, conventional lines: 6,658.7 km)
Number of stations: 1,709