2 Intelligent Facility Management

Maintenance strategy on the basis of inspection data to ensure a safe environment for passengers and trains in stations
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To ensure a safe environment in various types of stations, various types of inspection is conducted.
Various types of inspection

- Inspection using iPad
- Inspection using vehicle for high lift work
- IR Ray inspection of wall
- Inspection using fiber scope

- Regular inspection
- Inspection before peak season
- Legal inspection
- Detailed inspection using special machines

- Large numbers of inspection data (BIG DATA!!)
- Various types and methods for inspection
“Sharing inspection data with group company” is important.
System for maintenance of stations

Facility Management System (FMS)

At office (PC)

- Building specifications
- Inspection data
- Plan inspections
- Plan repair works

At station (iPad)

- Check the data
- Make a report

✓ “Maintenance strategy based on inspection data” is important.
Example of inspection using FMS

Office

Plan inspection
- Cycle
- Date
- Type

Check the data
- Maintenance plan
- Repair history
- Drawing

Station

Inspection

Make a report
- Save photos
- Make charts
- Save results of inspection
- Make a repair plan

Office

Inspection flow

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Example of inspection using FMS

Visual inspection

- Find parts to be repaired
- Take photos
- Make charts
- Store all data in FMS
Example of inspection using FMS
- Utilization of smart devices -

Camera images can be displayed on iPad through Wi-Fi connection

Scaffolding became unnecessary

✓ FMS also enables effective use of smart devices.
FMS overview: making a report

Make a report

- Save results of inspection
- Make a repair plan

A) Number of parts for repair
B) Urgency ratings (e.g. within X years)
C) Construction condition requirements (e.g. only night work is applicable)
D) Categories of construction work (e.g. civil, mechanics, electric)
E) Photos
   Overview of deterioration
Repair work, if necessary, is planned based on inspection data.

FMS database is stored for future maintenance planning, and is shared among JR East and group company.
Ongoing works

Visual inspection

- Inspect by human

Automated inspection

- Monitoring by sensors and cameras
- Using special machines

✓ Get rid of labor-intensive approach.
✓ More efficiency and accuracy.

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