



TCMS & WMDS

Remote monitoring and diagnosis for stable train operation

Mitsubishi Electric's TCMS (Train Control and Management System) and WMDS (Wayside Monitoring and Diagnostic System) provide integrated solution for reliable and efficient train operation

TCMS (Train Control and Management System)

- Ethernet (100BASE-TX) communication based on IEC61375
- Total control over onboard equipment operation
- Reduction of in-car hard-wires

WMDS (Wayside Monitoring and Diagnostic System)

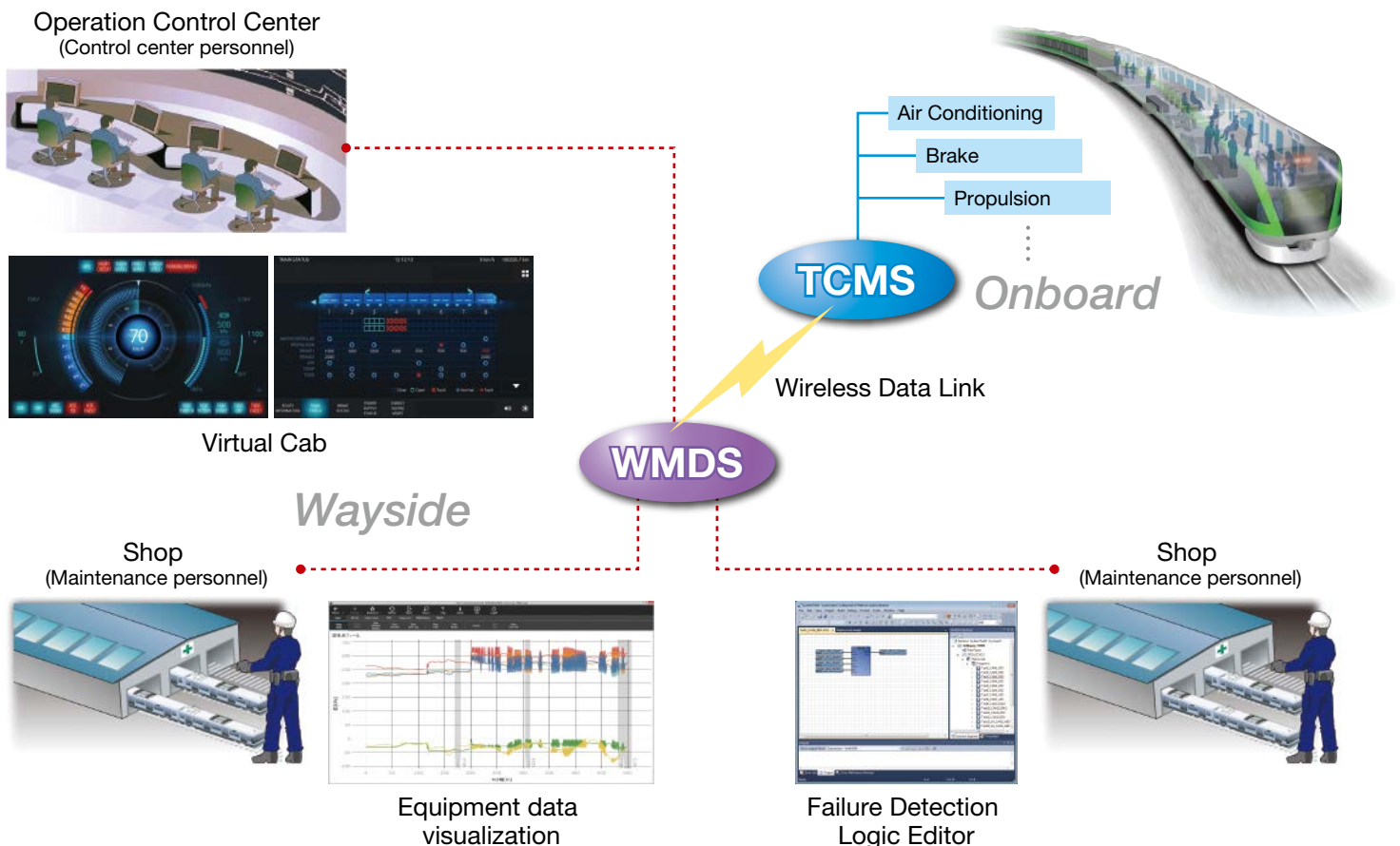
- Remote monitoring and Virtual Cab screen
- Fault analysis and diagnosis
- Remote parameter setting of onboard

Communication between onboard and wayside

- Wireless communication based on IEEE802 standard
- Priority control and bandwidth utilization
- Redundant communication

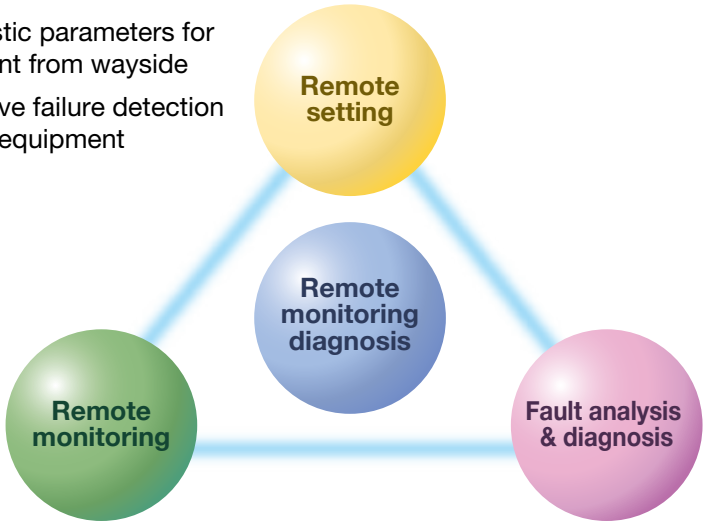
CBM via TCMS and WMDS (Condition Based Maintenance)

- Statistical data collection and visualization
- Predictive failure detection of equipment
- Train-set optimal control with TCMS



WMDS Function Overview

- Setting of diagnostic parameters for onboard equipment from wayside
- Setting of predictive failure detection logic for onboard equipment



- Remote monitoring of train and car status
- Monitoring of Virtual Cab for the selected car
- Map view for the target train location

- Automatic detection of fault information and notification
- Acquisition of associated log collection and visualization
- Operation guidance support

Benefit for users

- Shortening of restoration time in case of failure
- Minimization of train operation downtime
- Reduction of workload on control center personnel and maintenance personnel

Functional Advantages

- Virtual Cab: Display simultaneously of the cab screen
- Diagnostic parameters and operation parameters of onboard equipment cab be set from wayside

Screen Sample of WMDS

Monitoring of train and car status screen

Monitoring the status of trains of the entire fleet, Train and Car levels respectively.

Virtual Cab screen

Virtual Cab screen allows the remote display of the cab screen of the selected car.

Failure detection logic editor screen

Editing of onboard event detection logic using third party software standard package.

Graph view screen

Graph display of the collected event device status (analog and digital).

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