Train Safe driving System / Management Information System

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1. Train Safe Driving System
Basic concept

To enhance safety for the railway worker
Train Safe Driving System

System operation concept

- Target: Train Driver, Track Field Worker
- Train and Working location information exchange
  - Driver Navi.: Working spot alarm
  - Worker: Train approaching Alarm

Warning Signal

Vision LED

Sound 110dB

Warning signal
location information
3sec interval Information

Distance At least 2KM

DB
Train Safe Driving System

Train location detection Algorithm

<table>
<thead>
<tr>
<th>Classify</th>
<th>contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Train location through GPS info (Train location with high accuracy)</td>
</tr>
<tr>
<td>GPS Shade</td>
<td>CTC Track circuit (1.5km boundary train location)</td>
</tr>
</tbody>
</table>

GPS + CTC Track circuit
Driver Navigation System

- GPS Time
- Current Speed
- Train Root
- Specific working location
- Current Train Position
- Menu Button
- Emergency Call
- Reporting unexpected event
- Driving route info
- Train Number
- Station Info (Stop)
- Scheduled time
- Remain distance
- System terminate
Track worker Information

Configuration
Operating distance

View through map

[Alarm message]
Approaching Train Information (Distance, estimated time)
2. Management Information System
System Overview

Main Purpose
“Untact” innovation to reduce paper documents and face-to-face reporting and increase work efficiency

Main Function
① “Memo Report” Minimizes unnecessary document creation, shortens approval time, and optimizes administrative processing time.

② “Real-time nationwide monitoring” Shows train operation information and maintenance work sites across the country. Rapid response to train delays or railroad accidents and obstacles to enhance safety/customer satisfaction.
   - In the form of a map, the status of train operation based on GPS is updated in real time. By clicking on each route, you can also check the status of facility maintenance work such as track and electricity.

③ “Voice of Customer” monitoring

④ Provide “key indicators” to support executive decision-making
Configuration for Main screen

1. Memo Report
2. Real time Nationwide Monitoring
3. Voice of Customer
4. Key indicator

Real time news Related to KORAIL
Main Function Introduction (Voice of Customer)
Main Function Introduction (Key Indicator)
Key indicator (Safety)

- Accident and disturbance
  Number of case and the trend

- Human Error

- Industrial Accident
  Number of case and trend, Categorize
Key indicator (Transport)

- Transportation Income
  Categorize by train and branch office

- Traffic Volume

- Loading rate
  Categorize by train and branch office
Key indicator (Manage)

- Operating profit and loss
- Financial Liability

Key indicator (Accident and disturbance)

- Train accident
- Infrastructure disturbance
Thank you

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