Panasonic Security Solution for Railway Industry

May 23rd , 2018

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Connected solutions Company
Security Systems Business Division

Today's Agenda

- Security Business Division Introduction
- Case Study
- Customer Challenges and Solutions
- Panasonic Core Technologies

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Security Business Division Introduction

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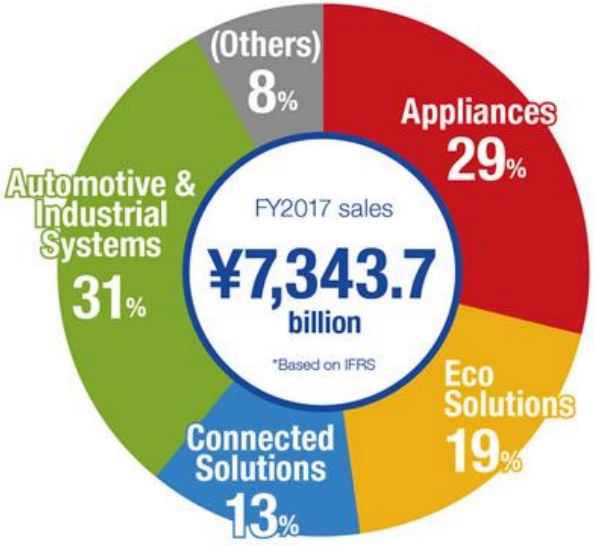
Connected Solutions Company

Connected Solutions Company was set up to provide IoT Solutions



* The segment breakdown is based on the sum of consolidated sales and "Eliminations and adjustments"
** Year ended March 2017

Appliances

Tetsuro Homma

Eco Solutions

Makoto Kitano

Connected Solutions (former AVC Networks Company)

Yasuyuki Higuchi

Automotive & Industrial Systems

Yoshio Ito

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History : 60 Years Experience in Security Solutions

1957 | 1970 1980 | 1990 | 2000 | 2010 | 2018

Camera

Super Dynamic

Intelligent Network Camera

i-PRO EXTREME

'57 — '97 — '05 — '10 — '17

Tube Camera

Analog

Digital

ArgosView

VIDEOINSIGHT A Panasonic Company

VMS

System

Disk Recorder Integrated Software

'00 — '06 — '15

Vertical System

'88 — '05 — '13 — '17

Road Monitoring

Police Vehicle System

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Case Study - Projects

DENVER RTD
(US)

SNCF (France)

NY Train (US)

Land Transport Authority
(Singapore)

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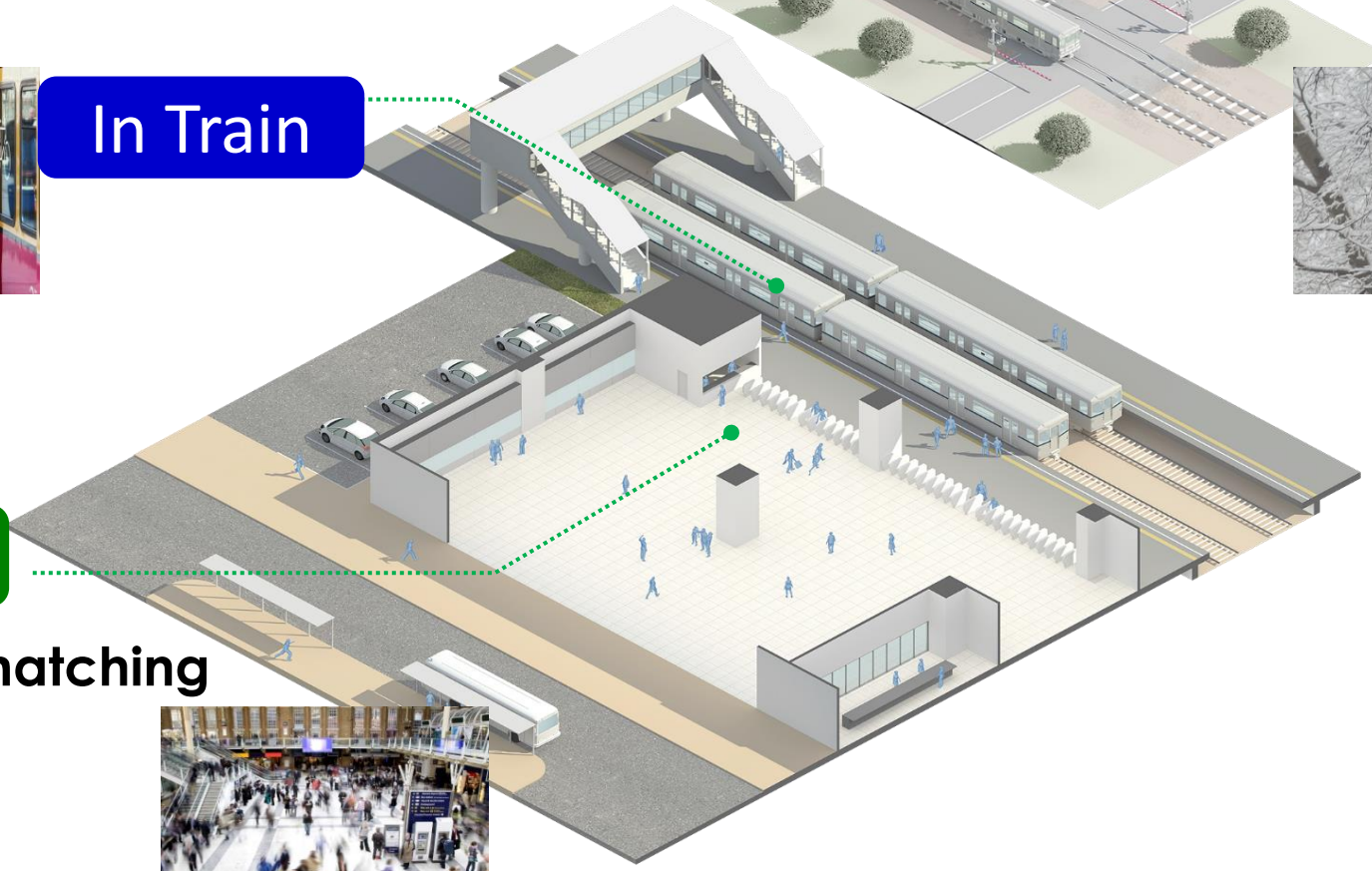
What are the customer challenges?

Railway

Monitoring in harsh environments

Clear evidence for Passenger trouble and Train accidents

In Train



Station

Black list matching

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Panasonic's Solutions

On board Surveillance Camera

In Train

■ **Issue**

Decrease-blind spots and capturing clear image for evidence

■ **Solution**

- **Provide outstanding image quality**
- High efficient and low cost solution

■ **Benefit**

Reduce the camera
HDx4 -> Ultra 360x1
Reduce storage cost
more than 70%

Outdoor Application

Railway

■ **Issue**

Durability required to handle various environments

■ **Solution**

- **Tough Body** under severe environment wind load durability (Max:60m/sec)
- **Hybrid Image stabilization**(EIS & PTIS)
- **Anti-salt** air corrosion protection

Aero PTZ

SUD638

■ **Benefit**

Reduce the installation cost : -$1,300/Cam
Reduce salt resistant coating : -$2,600/Cam

Facial Recognition Solutions

Station

■ **Issue**

Early detection and prevention of incidents, the efficiency of a particular work after the incident

■ **Solution**

Black List Real-time matching

■ **Benefit**

Reduce loss , labor and operation costs : $120K/year
*** In case of installation at 3 area**

Black list/
Real time face matching

Object detection

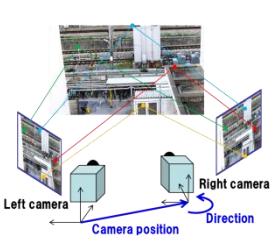
Level crossing

■ **Issue**

To detect cars, bicycles and pedestrians

■ **Solution**

- **Stereo image sensor for Intruder detection.**



■ **Benefit**

Improve the accuracy of detection even rainy or cloudy day.
Support to detect small object, even Kids, bicycles and motorcycles in addition cars.

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Extreme Sensing

In Train

High picture quality & Color reproduction

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Extreme Analytics

Station

Deep Learning Technology based Unusual Behavior Detection

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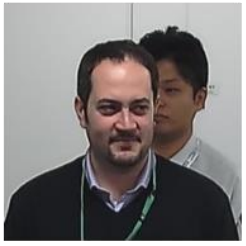
Extreme Analytics

Station

Deep Learning Technology based Face Recognition

	Difficult situation	Detection Case 1		Detection Case 2	
		Registered face	Detected Face	Registered face	Detected Face
1	Face angle				
2	Small Face				
3	Sunglasses				

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Other Core Technologies

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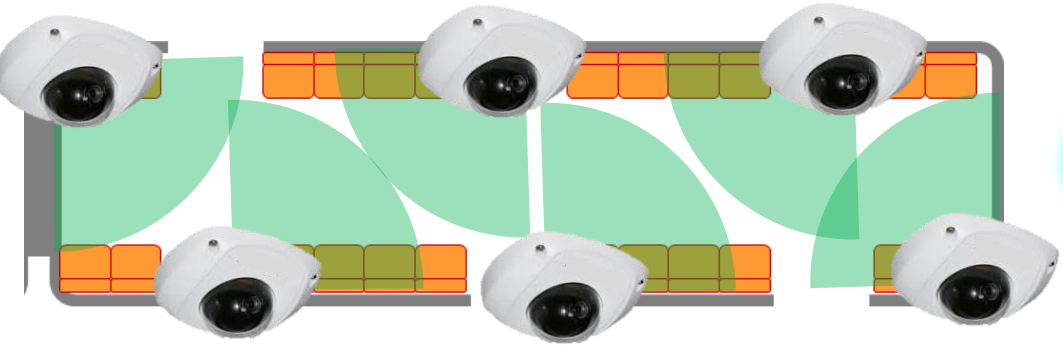
Extreme Sensing

In Train

Onboard Monitoring

Other Brands



Need 6 cameras

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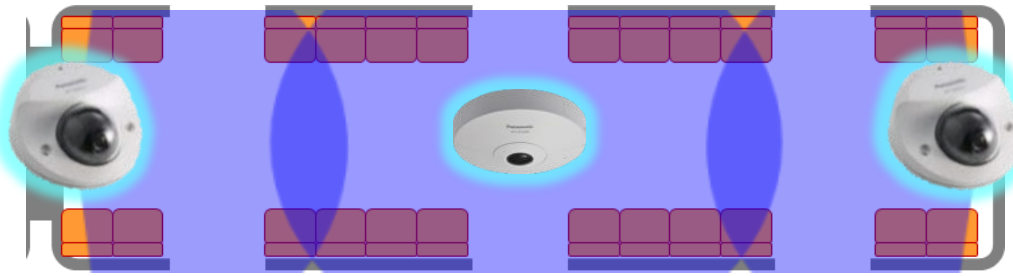

Need 3 Cameras

Aspheric Lens Technology

Wider Viewing

Monitoring Area

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Extreme Sensing

In Train

In-house developed Aspherical Lens & Video Data Deforming Technology

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Extreme Sensing

Railway

Image Enhancement

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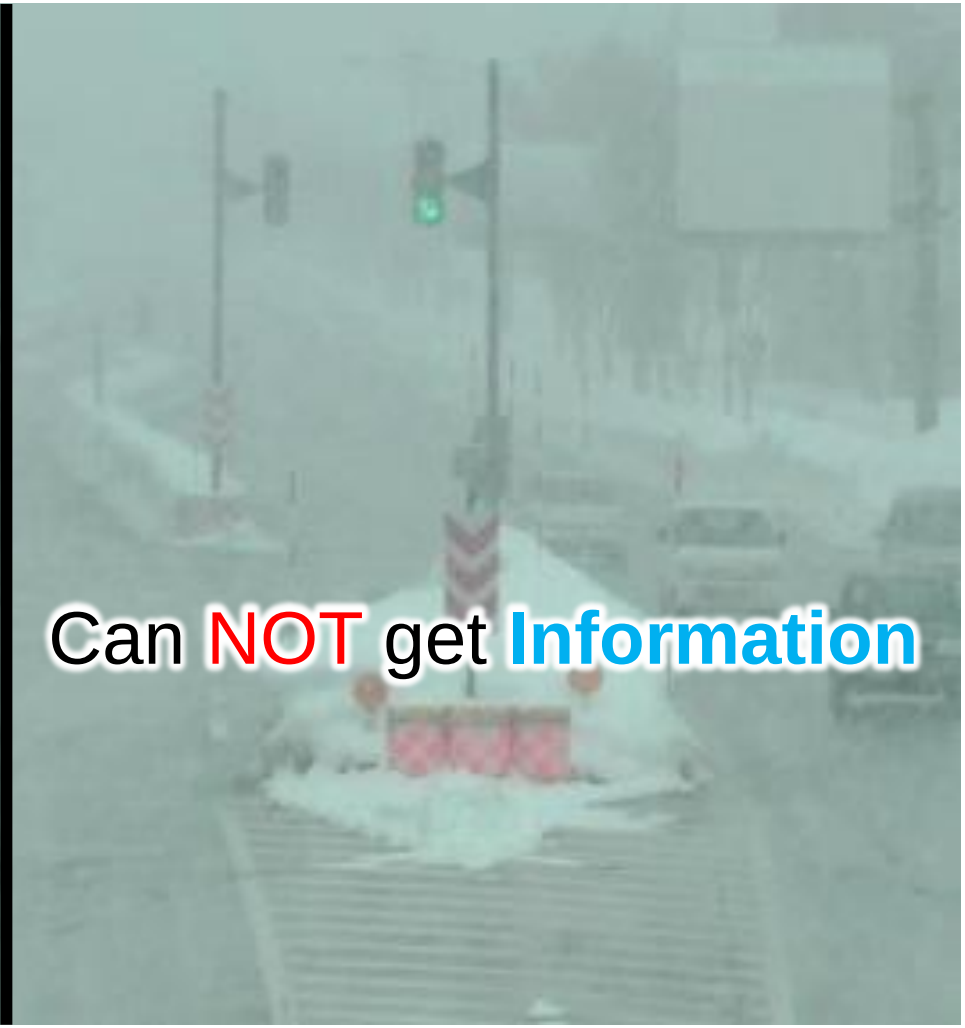
Other Brands



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Extreme Reliability

Unique Hybrid Image Stabilization Technology

Railway

Other Brands

Can NOT get Information

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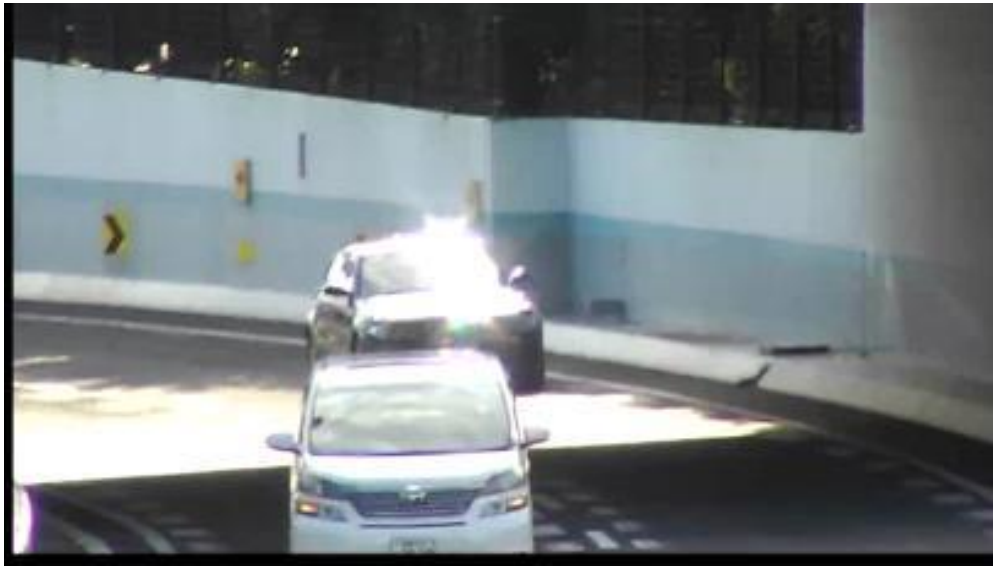

can get Information

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Extreme Reliability

Railway

Clear Sight Coating

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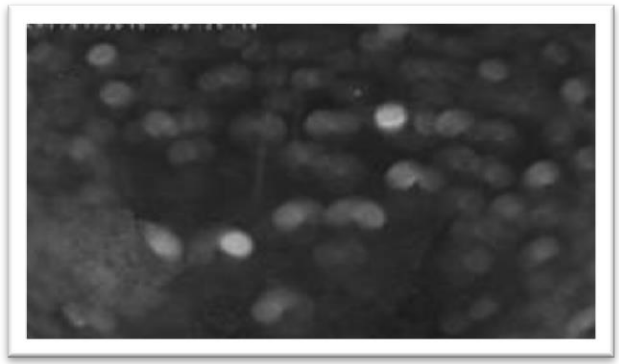

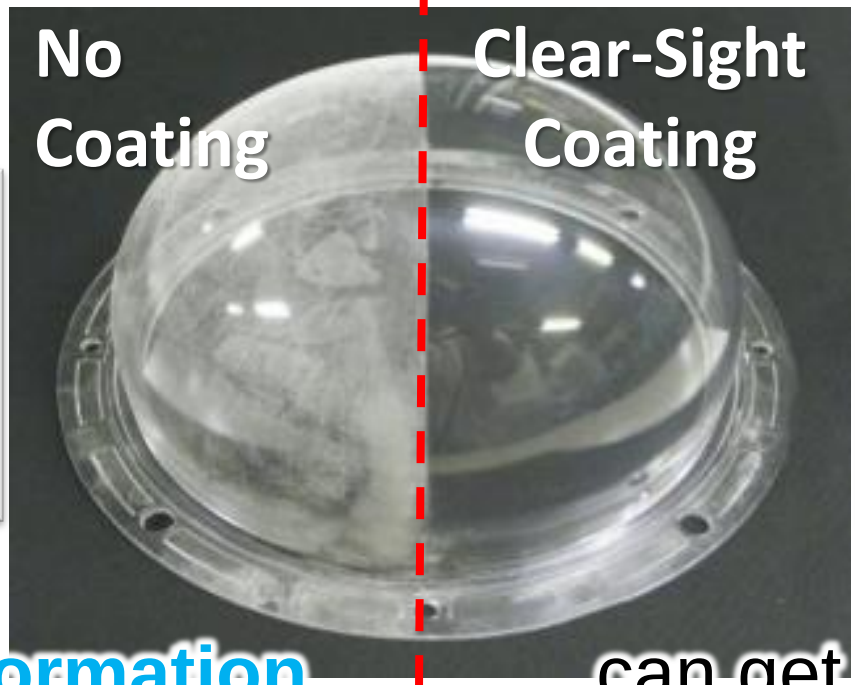

Can NOT get **Information**

can get **Information**

Reduce Maintenance/Cleaning Cost can be reduced too

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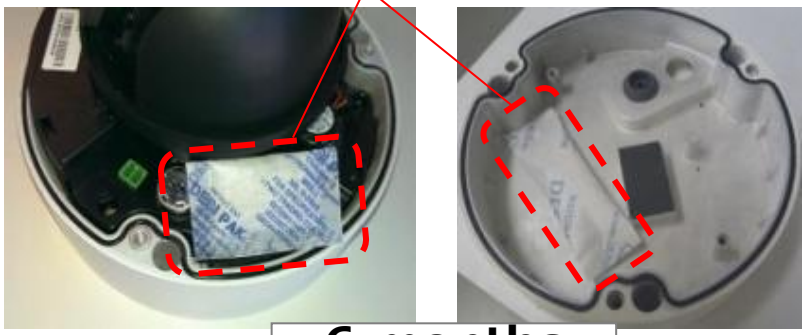
Extreme Reliability

Railway

Active Dehumidification

Other Brands
Desiccant only



6 months later

Condensation

Can NOT get Information

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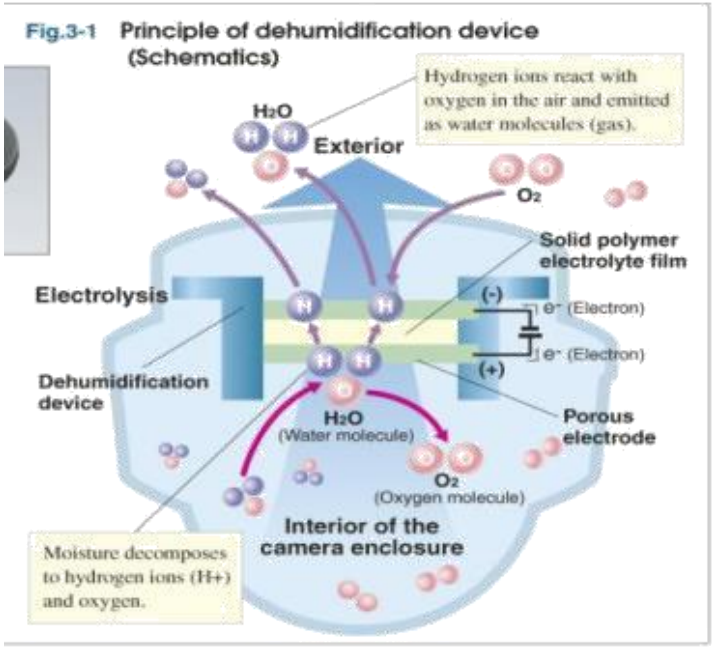
Active Dehumidification



can get Information

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Case Study
(Detailed Information)

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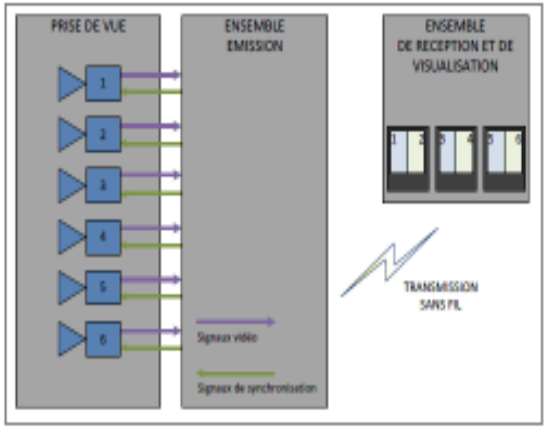
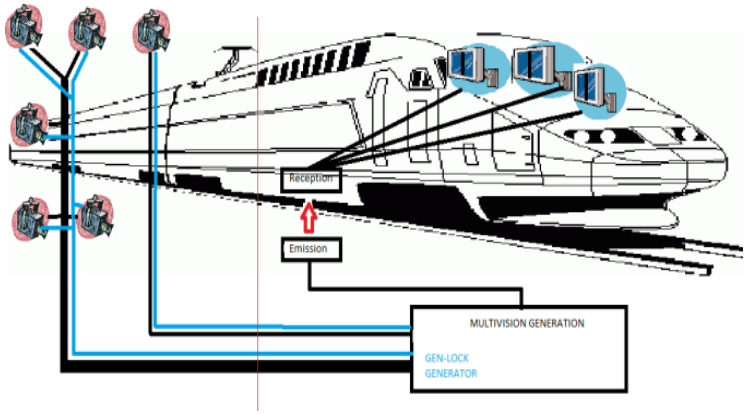
Case Study - SNCF (France)

Drivers need to check if there is anyone stuck between the doors before closing

Drivers can remotely monitor the situation at each door





Quick identification of situation

➔ Quick TAT to normal operation

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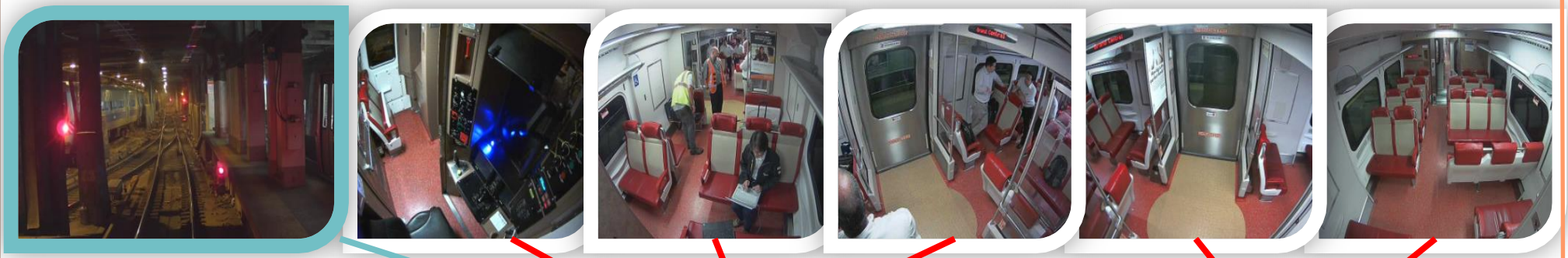
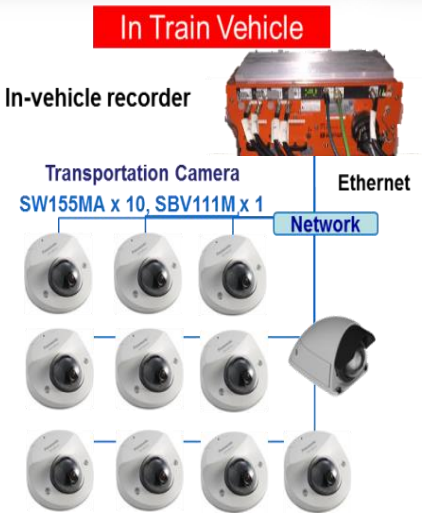
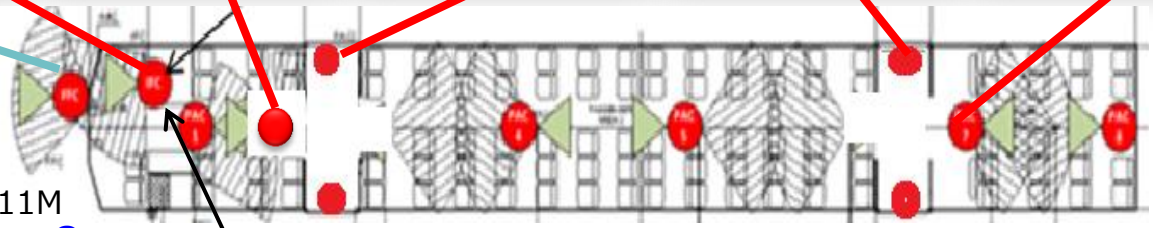
Case Study - NY Train (USA)

Record video for evidence of the crime

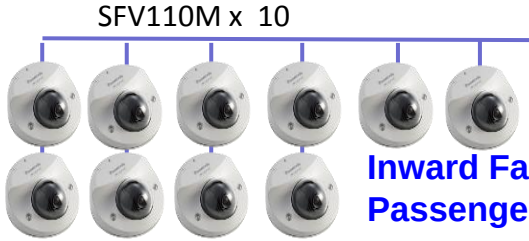




WV-SBV111M
Front Facing Camera



Driver monitoring WV-SW155MA



In-vehicle recorder

Inward Facing/ Passenger Camera

Train :1,000 cars (11,000 Cameras)

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Case Study - Land Transport Authority (Singapore)

Centralized incident monitoring at command center

Automatic upload of recording data at each platform.

Recorder

Reduce manpower to retrieve data manually
➔ save operating cost

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