nextstation
MOSCOW 2013

AIMING TO SMART STATION VISION

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1B Innovations

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- R&D Center of JR East Group Overview
- Smart Station Concept
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Outline of Frontier Service Developing Laboratory (FS Lab)

* R & D Center of JRE was established at Dec. 1st 2001
* Location: Nisshin, Saitama City(30km north from Tokyo Station)
* R & D Center has 6 Research divisions
* Mission of FS Lab : Create future customer service not only with railway technology but also with ICT

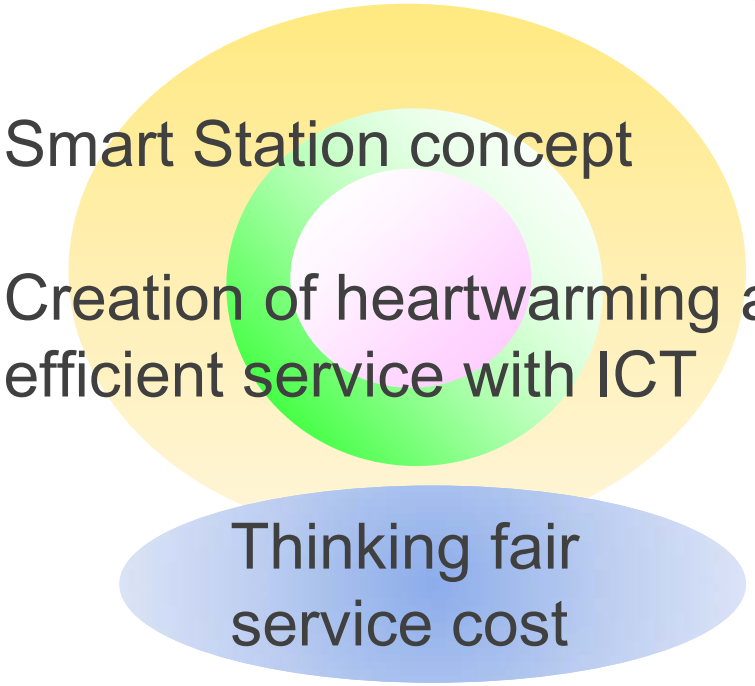
R & D Center

- FS Lab.
- Advanced Railway System Development Center
- Safety Research Lab.
- Disaster Prevention Research Lab.
- Technical Center
- Environmental Engineering Reteach Center

Smart Station Concept

Keyword for station design at 202X

Premise : Safety and Security
A. Barrier-free and stress-free for every passenger
B. Personal information and service for each passenger
C. Eco-friendly and energy saving operation
D. Foster interaction with the community
E. Improvement of operational efficiency



Exceed passenger's expectation → 1.Passing pleasant time without staff support for every passenger

Sustainability → 2.Carbon-free and living together regional community

Management → 3.Balance service level and operation efficiency

Train Information System in Traffic accident

Ikebukuro

Akihabara

Feature Use train-route-Map

You can be seen driving situation intuitively by using the map

Contents and Features

Accident Information
(Visualized Rail Map)

Bypass Route Information
(Customize for each station)

※ Field trial ver.

Large displays (about 50 inch) are being implemented about 100 stations in Tokyo area.

Route finder for foreign traveler

Train network in Tokyo is very complicated for foreign traveler.
We developed route finder with multi lingual interface (Japanese, English, Chinese, Korea)

Easy to install at various station space

Experiment at Akihabara station

Multi lingual interface

Top screen

Train schedule

Print out result

Travel guide

Station map

Experiment result (500 users/day)

Installed in Tokyo x2 Narita 1st x2 Narita 2nd x2

Interaction Information System with Paper Brochure “KAMISHIRUBE”

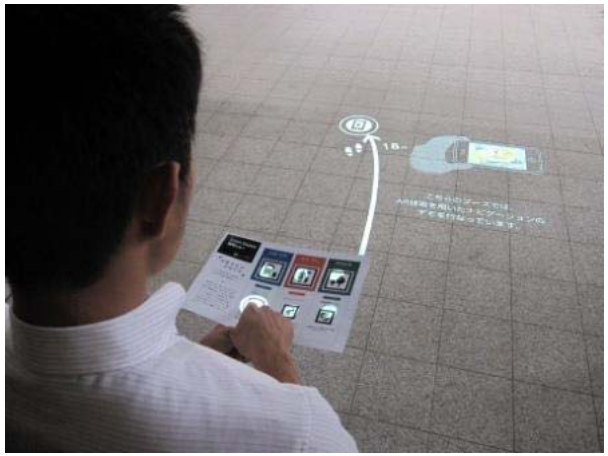
Expand the possibility of “PAPER MEDIA”

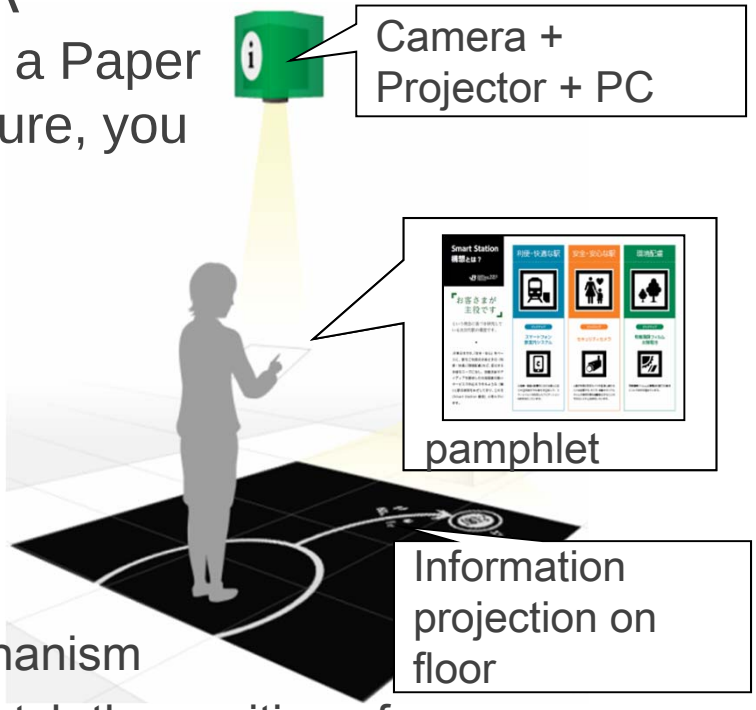
We developed information providing system with a Paper Brochure. Just by tapping a marker on the brochure, you can get the information about it on the floor .

User can easily find out additional information just put their finger on the picture on paper map.

“KAMISHIRUBE” is a coined word

: KAMI(paper) + SHIRUBE(signpost)





Basic mechanism

Upper part camera catch the position of fingertip an pamphlet. Additional information according the position is projected to floor.

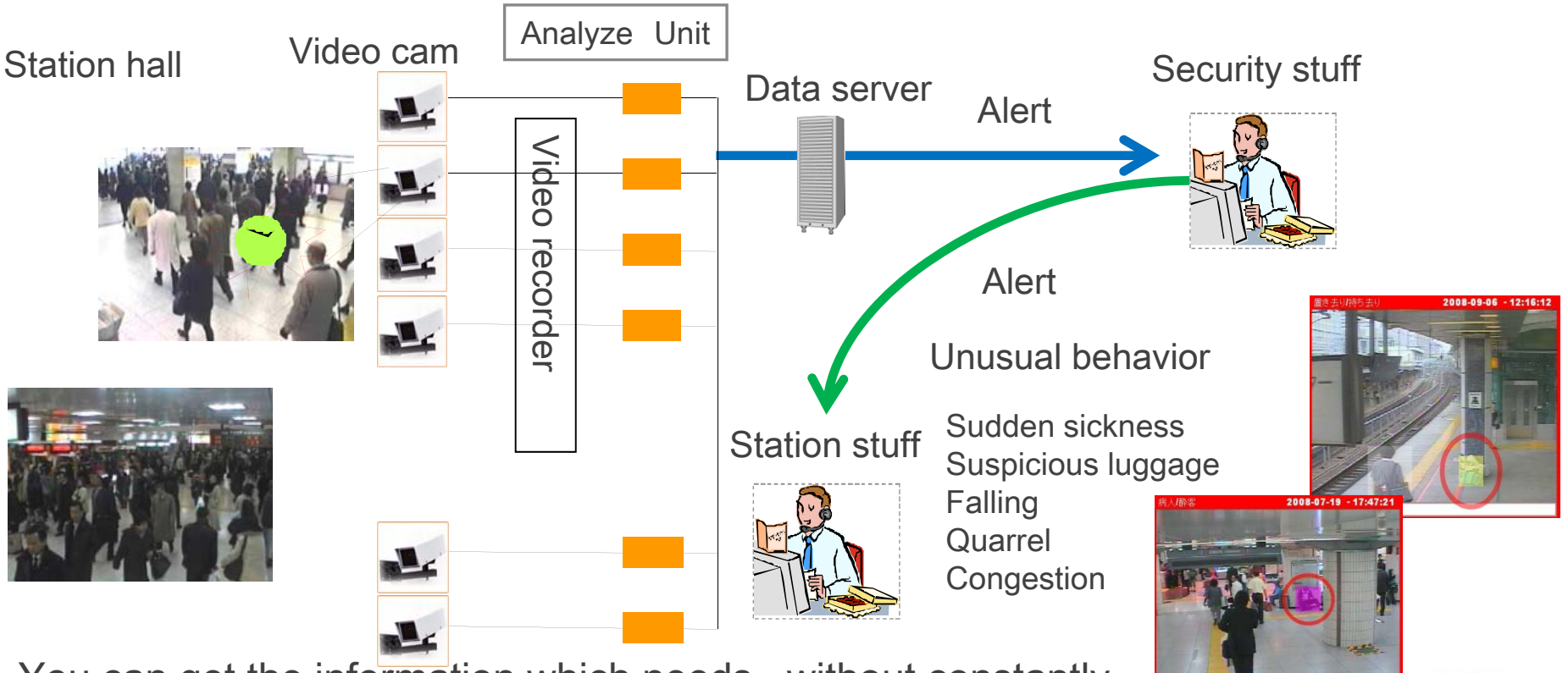
“Trainnet” Realtime Information Providing System

Trainnet supports customers to smoothly decide on their next action and relieve customers from stress from lack of traffic information. Customers can get the information such as train status, station facilities, congestion, news, and coupons by using their smart-phone from on-board-server via Wi-Fi network.

Service image on the train

Security camera system

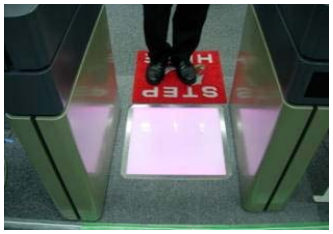
This system send alert automatically to station stuff when unusual behavior happened by analyzing video picture automatically.



You can get the information which needs , without constantly looking the monitor!

Touch less gate system

We are studying touch less gate system to improve usability of Suica (touch & go gate system). There are many wireless device (RFID, Bluetooth, so on) for radio communication. But we chose human body communication tool because of communication stability and speed are best for gate system.



Basic test (2009)

Built sensor to Gate system(2010)

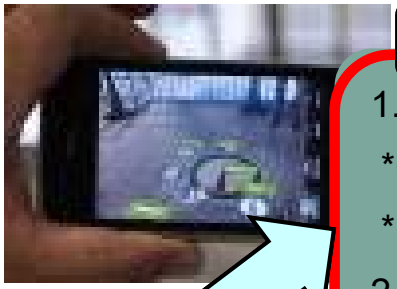
Experiment at Smart Station (2012)

R & D Road Map for Smart Station

Goal image at 202X

■ Personal and friendly place for every passenger

*All passenger include aged people, foreign travellers can use station comfortably and with easy mind.
*Artificial station master who can catch all traffic and station situation guide each traveller.



Target at 5-10 years later

1.Personal information based on big data and train traffic forecast
*Cloud computing/big data analysis/artificial Intelligent
*Personal navigation without signboard in station
2.Comfotable station design for every traveller
*Navigated personal mover/Fully barrier-free station yard

Present project

1.Enhance personal Information
*Using smartphone/Digital signage
2.Assist for moving in station
*Robotics/Simulation for walker flow in station

...Thank you

for your kind attention

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