



**Advances in Transportation through Technology:**

～ JR West's Technological Vision ～

**West Japan Railway Company**

March 22, 2018



## ～ Establishment of JR West's Technological Vision～

With 30 years in business, JR West is celebrating an important anniversary.

As a company whose primary business is railways, the JR West Group is carrying out a wide range of initiatives based on the knowledge that our passengers' lives are in our hands.

The business world around us is changing at a faster and faster pace, with the population declining, low birthrates and an aging population, intensifying natural disasters and rapid globalization.

Meanwhile, the industrial world is experiencing the arrival of what has been called the "fourth industrial revolution", with incredible technological advances such as IoT, AI and robots.

We aim to pursue new possibilities and change our systems to solve the issues in society that are becoming more complex, more wide-ranging and more advanced. We also aim to refine our initiatives with safety as our first priority, and to fulfill our mission of providing railway and other transportation services in a manner that is sustainable and coexists harmoniously with communities, so that we can continue to meet our passengers' expectations in future.

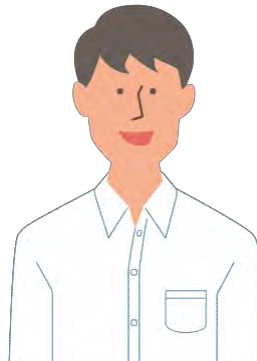
With this in mind, we established our Technological Vision, which provides a road map for the company we want to be 20 years from a technological perspective. We plan to work with our various partners to create innovations and provide new value that has never been seen before, guided by our Three Aims in this vision.

This vision is the starting point for the JR West Group's new initiatives to bring about advances in transportation.

# 1

### **Safer and more reliable transportation**

In addition to visualizing the risks of our technology, we aim to pursue new possibilities in technology to enable our workers to apply their strengths in their work, improving the safety and quality of our transportation. We will also work together with our passengers and society at large to improve safety together.



# 2

### **Providing railway and other transportation services that play a role in creating appealing areas**

We aim to connect with each and every passenger, as well as various businesses and members of the community, using our technology to provide seamless, finely-tuned service for a diverse range of customers. We will also provide passengers with the best possible travel options and contribute to community vitalization.



# 3

### **Building a sustainable system for our railway and other transportation**

We aim to use new technology such as IoT and AI to improve the way we work and increase productivity, to build a system for our railway and other transportation that will be environmentally friendly and sustainable in the era of Japan's decreasing population.



# Technological Vision

## How JR West wants to be 20 years from now

1

### Safer and more reliable transportation

Reduce level crossing accidents by working with ITS, etc.

Optimal combination of people and technology

Visualization of risks through technology

Use of social media, etc. for rapid gathering of information to improve safety and quality of transportation

GIS

the way we work through use of ICT technology

Working with diverse modes of transportation

Simplification of ground facilities

building of environmentally friendly systems for railway and other transportation

Advances in Transportation through Technology

2

### Providing railway and other transportation services that play a role in creating appealing areas

Simple, seamless railway and other transportation services

One to One

Service tailored to each passenger

New travel methods to meet a wide range of needs

Improvement of productivity through new technology such as IoT and AI

Building of a sustainable system for railway and other transportation

3



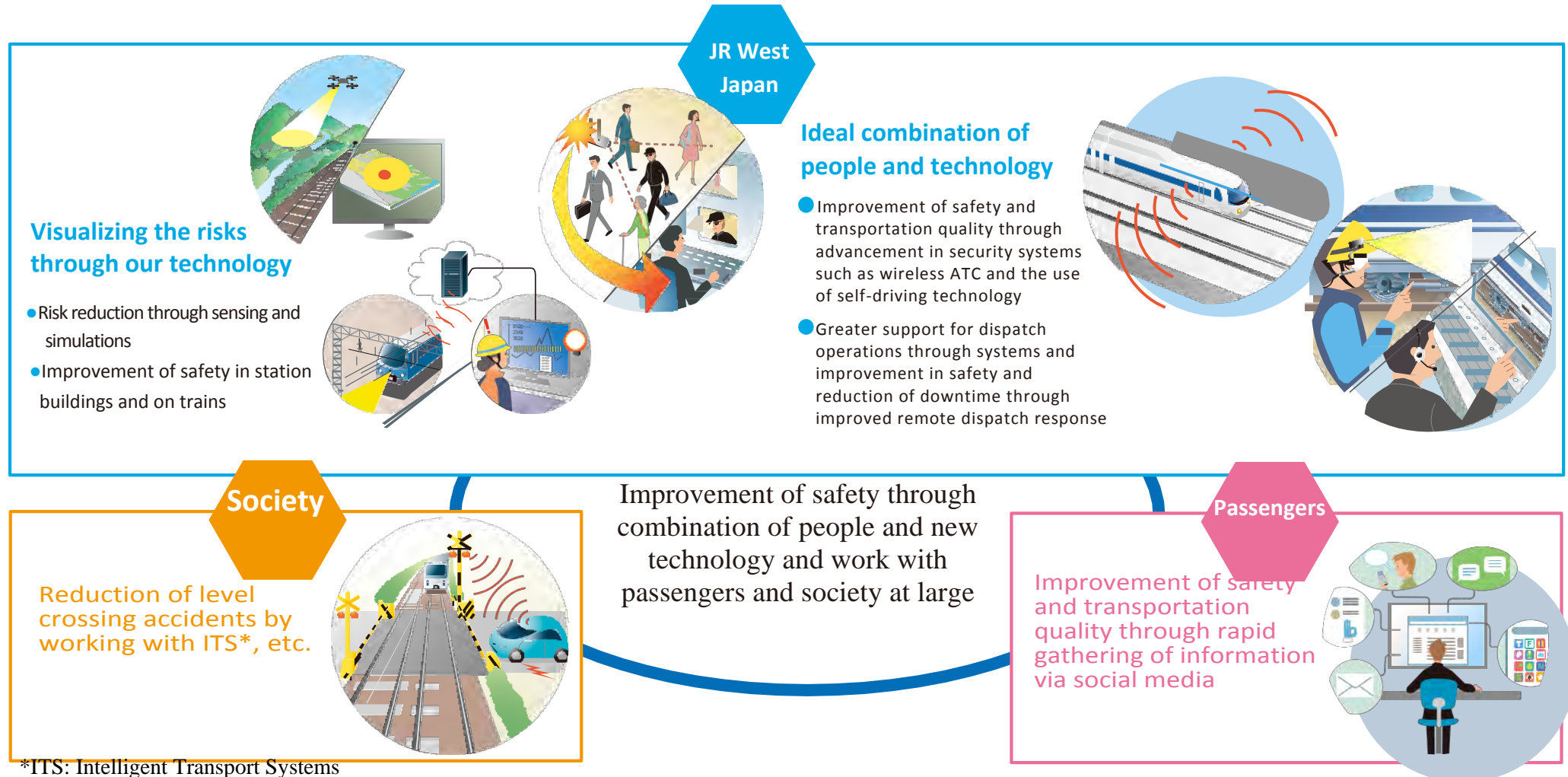
# Our Three Aims

## Safer and more reliable transportation



With current issues in mind, we are aiming for further improvement in safety and transportation quality in future.

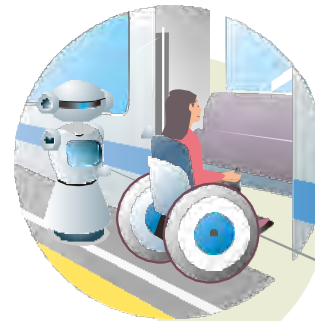
In addition to further improving the quality of the risk assessments we have conducted thus far and visualizing the risks through our new technology, we aim to draw on the human factor to create the ideal combination of people and technology, enabling our workers to better apply their strengths to achieve the safety and quality of our transportation. We will also work together with passengers and society at large through our technology.



## We aim to make traveling with us a simple and friendly experience for each and every passenger

We aim to connect with each and every passenger, as well as various businesses and members of the community, using our technology to provide simple, seamless, door-to-door service for a diverse range of customers. We will also contribute to community vitalization through initiatives to provide services that are like the air that people breathe but solve passengers' issues in a friendly way.

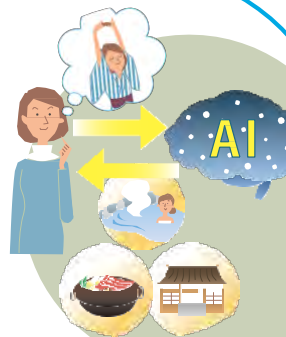
### Providing simple, seamless railway and other transportation services



- Greater convenience through simplification of procedures such as a shift to ticketless processing
- Collaborations with other transportation companies such as personal mobility companies
- Technology for smoother transportation

### New travel methods to meet a wide range of needs

- Use of data marketing to provide optimal travel methods and travel support that is connected to the community



### Technology-based support for friendly, one-to-one service by workers



### Service tailored to each passenger

- Distribution of easy-to-understand information to suit each passenger's needs



# Our Three Aims

## Building a sustainable system for our railway and other transportation

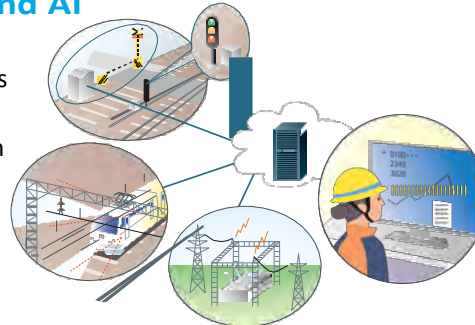


### We aim to create systems for our railway and other transportation that will be sustainable in future

We aim to use new technology such as IoT and AI to improve the way we work and increase productivity, to build a system for our railway and other transportation that will be environmentally friendly and sustainable in the era of Japan's decreasing population.

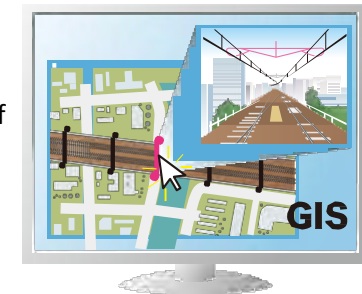
#### Improvement of productivity through new technology such as IoT and AI

- Mechanization of inspection process by gathering information on the status of ground equipment through running trains and a sensor network
- Shift to new maintenance method using CBM\*<sup>1</sup>

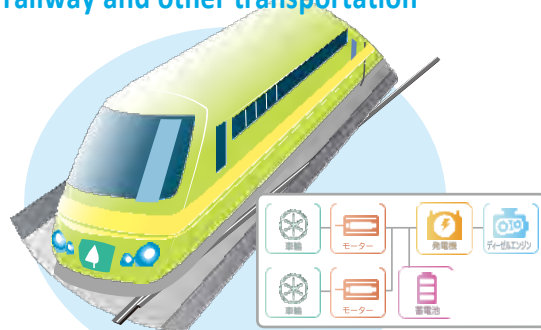


#### Improving the way we work through use of ICT technology

- Support for changes in the way we work through use of interdepartmental data and technology such as internal cloud services and GIS\*<sup>2</sup>



#### Creation of environmentally friendly systems for our railway and other transportation



- Improvement of energy efficiency through implementation of new technology

#### Collaboration with a wide range of other modes of transportation



- Collaboration with a wide range of other modes of transportation to provide seamless railway and other transportation services

#### Simplification of ground equipment



- Simplification of ground equipment such as aggregation of functions for trains

\*1 Condition Based Maintenance: A preventive maintenance principle in which the status of the equipment is ascertained through round-the-clock monitoring so that maintenance is only performed when needed, balancing quality with efficiency

\*2 GIS: Geographic Information System





The latest information on our technological vision  
and a PDF version can be downloaded here.

<http://www.westjr.co.jp/company/action/technology/vision/>

