

**JR KYUSHU IR DAY 2023**

# **Progress on the JR Kyushu Group DX Strategy 2022–2024**

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**KYUSHU RAILWAY COMPANY**

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# **I Background to Formulation of the Strategy**

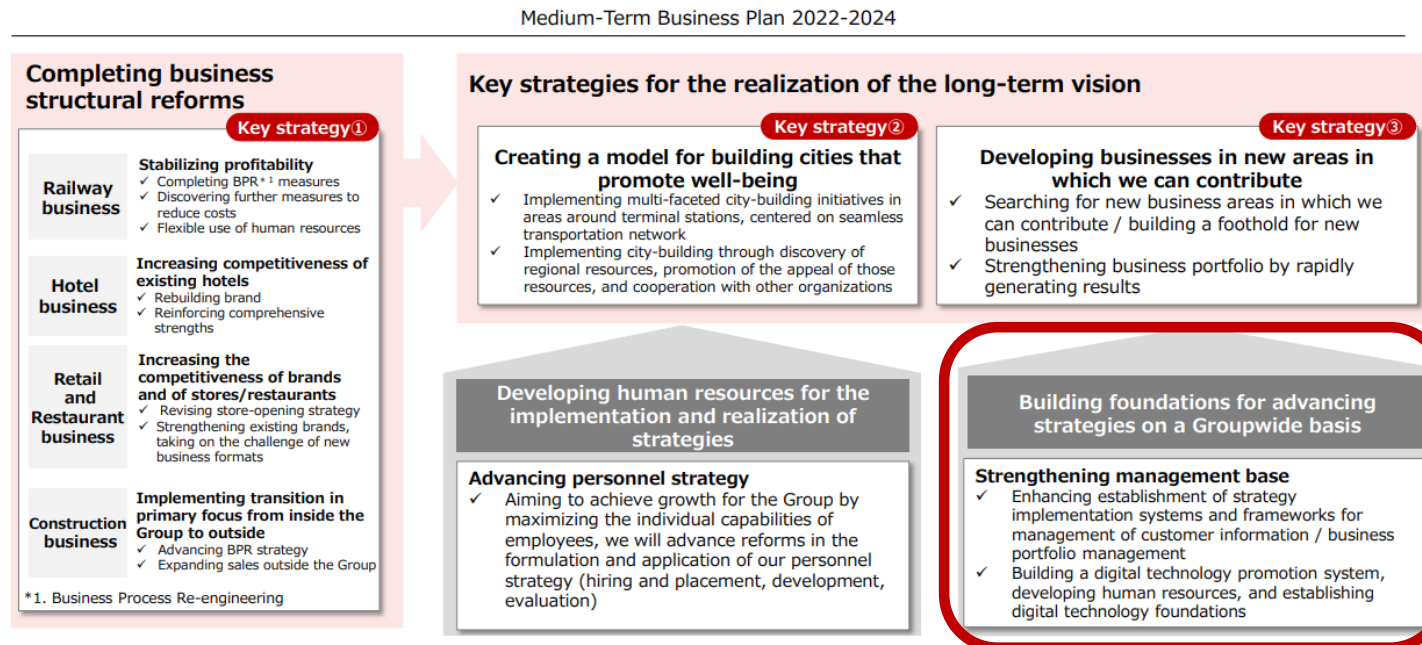
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# Background to Formulation of the Strategy

## 3. Medium-Term Business Plan

### 1. Key strategies of the medium-term business plan

- As key strategies in the Medium-Term Business Plan 2022-2024, we will complete the business structural reforms that are currently underway, and in addition, as the first steps toward the realization of the long-term vision, we will work to create a model for building cities that promote well-being and to develop businesses in new areas in which we can contribute.



## Building foundations for advancing strategies on a Groupwide basis Strengthening the management base

- ✓ Enhancing establishment of strategy implementation systems and frameworks for management of customer information / business portfolio management
- ✓ Building a digital technology promotion system, developing human resources, and establishing digital technology foundations

Formulation of a strategy for steady implementation (JR Kyushu Group DX Strategy 2022-2024)

## **II Overview of the Strategy**

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# Overview of the Strategy (JR Kyushu Group DX Strategy 2022–2024)

## Basic policies

We will promote “optimization” and “transformation” by utilizing digital technology to realize our vision of “increasing customer experience value,” “operations / maintenance reform,” etc. In addition, we will focus on developing the “infrastructure” and “human resource development and promotion system” that will provide the environment to support these efforts.

### Our aims

#### [Increasing customer experience value]

We will provide experience value in line with customer needs by implementing collaborative initiatives and making effective use of data, including the entire Group as well as a variety of external organizations, centered on JR KYUPO.



#### [Operations / maintenance reform]

We will pursue safety and efficiency in railway operations and maintenance through the use of digital technologies.



#### [Working style reforms / productivity improvement]

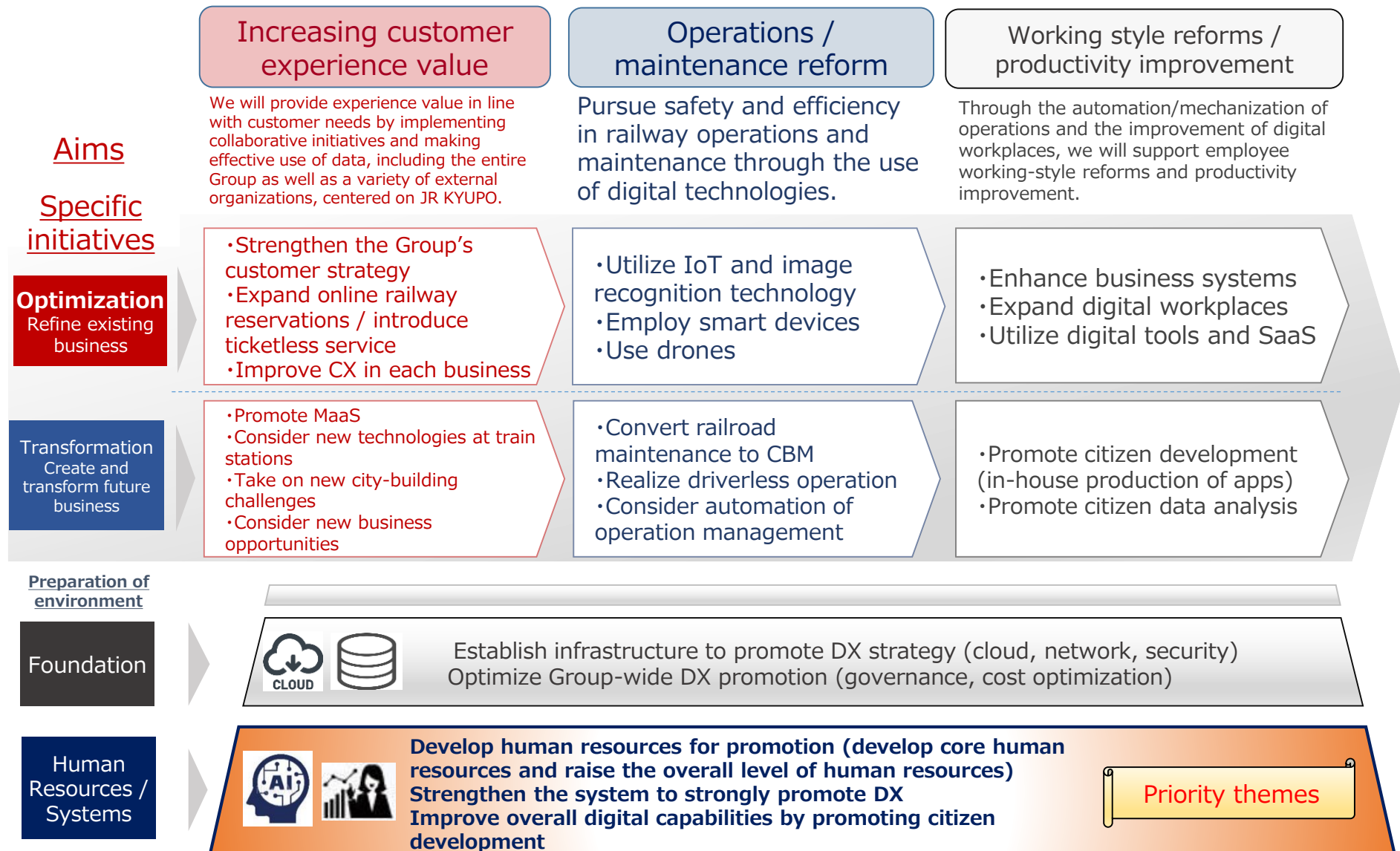
Through the automation / mechanization of operations and the improvement of digital workplaces, we will support employee working-style reforms and productivity improvement.



# Overview of the Strategy (DX Strategy)

## JR Kyushu Group DX Strategy (2022-2024)

We aim to be a company that maximizes the use of digital technology to create efficient, high-quality value.



# Overview of the Strategy (Human Resources / Structure)

## Human resources / structure

Priority themes

**Develop human resources to promote DX for the entire Group and strengthen the promotion system to accelerate DX**

**Develop human resources for promotion (develop core human resources and raise the overall level of human resources)**

Provide digital education to the management level

Promote educational programs for data utilization / analysis and application development

...human resource development target: 500 people

Develop digital literacy education

Consider acquisition of external digital human resources (mid-career hires, new graduates)

**Strengthen the system to strongly promote DX**

Establish CoEs (in-house production of apps, data analysis)

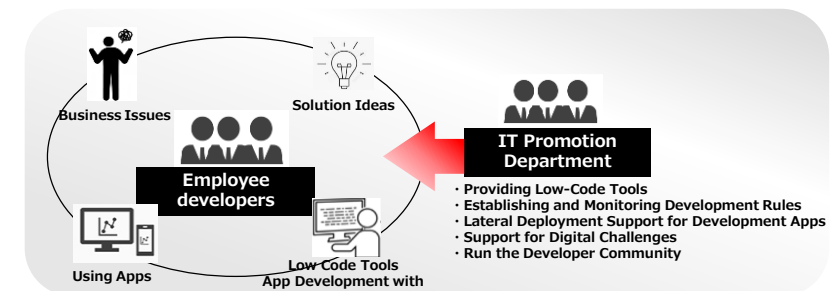
Assign digital promotion staff in each business unit

**Improve overall digital capabilities by promoting citizen development (Digital Challenges)**

Review business processes in line with development

Maintain development and operation rules and developer community

Promote horizontal development

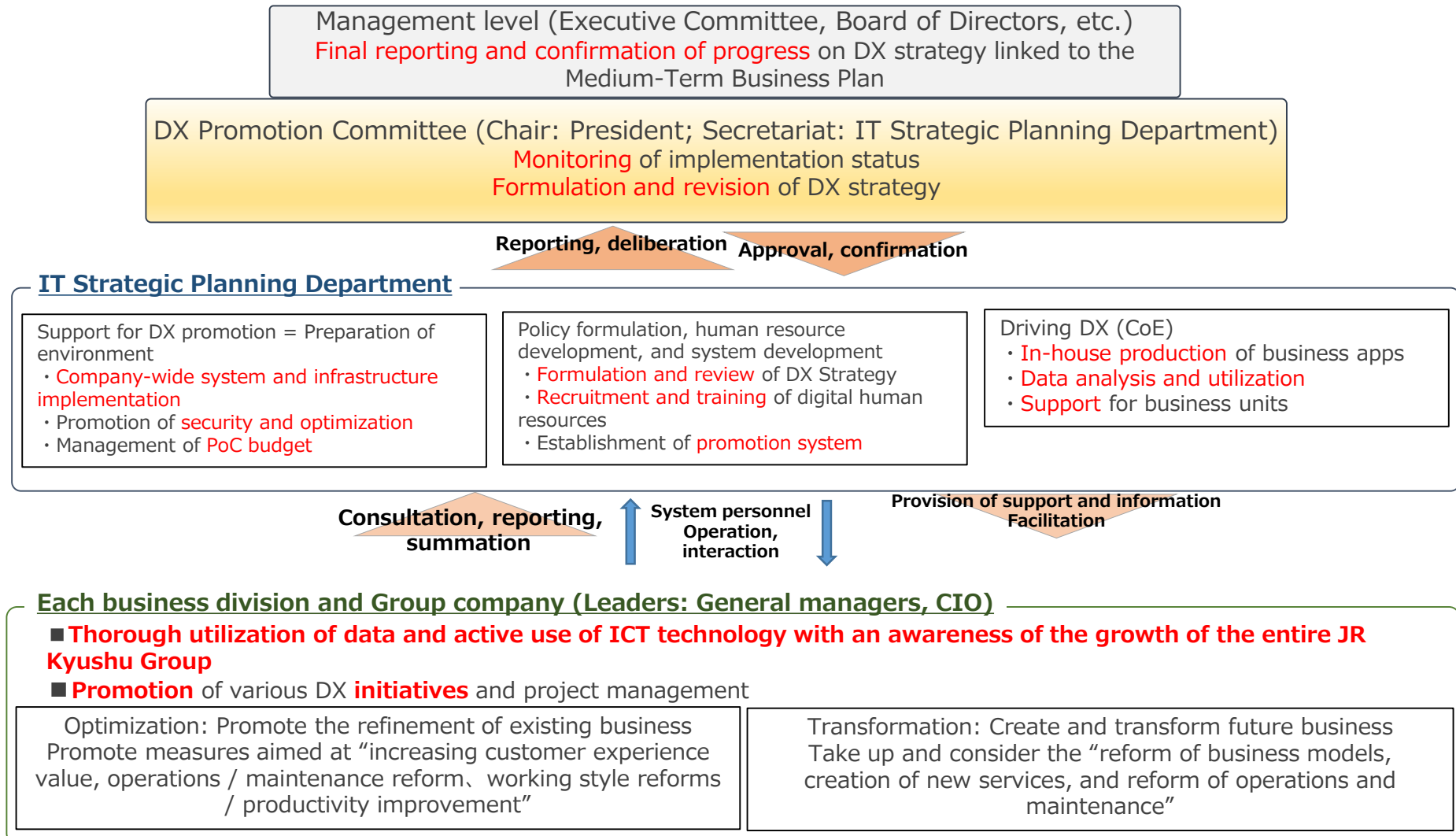




# Overview of the Strategy (Promotion Structure and Roles of Each Level)

## DX Strategy promotion structure: Roles of each level

We will clarify the roles of each level in promoting the DX Strategy and promote a unified effort throughout the JR Kyushu Group.



# **III Case Studies**

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# Case Studies of Initiatives

**Safe, secure, and  
seamless transportation  
services**

MaaS, ticketless, utilization of apps

**Self-driving**

Realization of  
GOA2.5

**Implementation  
of CBM**

Revolutionization of  
maintenance operations  
with IoT×AI

**Mechanization, labor saving**

Improved productivity of inspection and  
testing

Improved safety of in-track work

**JR KYUPO**

Customer communication, data  
marketing

**Digital challenges  
Digital heroes**

(Development by employees who  
are not IT specialists)  
Further acceleration



# Case Studies (Increasing Customer Experience Value: JR KYUPO)

- We connect with customers through JR KYUPO, the Group's point service, and use the data to propose Group's services tailored to individual customers' needs.

## JR Kyushu points, "JR KYUPO"

- Points can be stored by using various JR Kyushu services such as Internet train reservation, JQ CARD, SUGOCA, and the JR KYUPO app.
- Points can be used for such things as recharging SUGOCA, making payments at JR KYUPO app participating stores, and they can be exchanged for reward items.
- JR Kyushu web member IDs will be used as a common ID for the entire JR Kyushu Group, and the ID will be linked to railroad and merchandise purchase data, point usage data, etc., for management and marketing purposes.



## JR KYUPO app

- We launched this point app service with the aim of acquiring a wide range of purchase data irrespective of payment method. Users show the app at participating stores to accumulate JR KYUPO, and the accumulated points can be used at the rate of 1 point = 1 yen.
- Coupons are issued to encourage customers to visit participating stores.



# Case Studies (Increasing Customer Experience Value: JR KYUPO)

- The JR KYUPO service (stored and used) started in October 2023 with the station building group.
- We will continue to improve point convenience in other businesses within the Group, including the railway business.
- We will promote the use of purchasing behavior data to provide services that match customers' tastes and preferences.

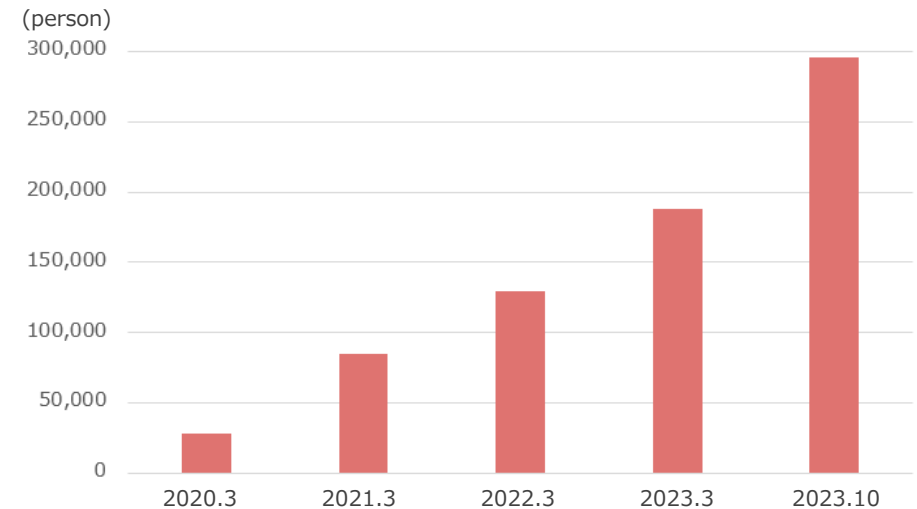
## Creation of a Group ecosystem centered on JR KYUPO

- November 15, 2023: Start of Kyushu Furusato Tax Payment (Stored)
- We are considering ways to increase the convenience of railroad travel.



## Changes in the number of JR KYUPO App members

- The number of JR KYUPO App members grew significantly due to the introduction in station buildings.



## Annual amount spent by point users

(Online reservations)



(JQ CARD: Use within the JR Kyushu Group)



# Case Studies (Operations / Maintenance Reform: Self-Driving)

- In December 2020, we commenced verification testing of self-driving train operational equipment (with a driver on board) between Kashii and Saitozaki stations, and in March 2022 we extended this to the entire Kashii Line.

## Initiatives in FY2023

- Expansion of target trains (from March 2024)> Expand to all trains, move to a 12-train structure
- ATS-DK-based GOA2.5 Self-Driving Implementation Study Committee (Summary completed on August 3, 2023)  
>Held in response to “Self-Driving Technology Study Committee for Railways” (compiled in March 2022 → published in September 2022)
- Implemented additional functions to realize GOA2.5 (completed in February 2023)
- Toward GOA2.0 demonstration operation on the Kagoshima Main Line planned from the end of FY2023, driving tests underway  
>Toward the evolution and utilization of self-driving technology








## Future plans

**By the end of FY2024,** we aim to realize self-driving (GOA 2.5), in which attendants other than the driver are in the front of the train.



Classification by Crew Type (Level of Automation)



Level of Automation (The level of automation is defined* by IEC (JIS).)	Crew Type, Conceptually (Text in brackets describes crew's main role.)	State of Deployment in Japan
GOA0 (Grade of Automation) 0 TOS (On Sight Train Operation)	 Driver (and conductor)	Streetcars
GOA1 NTO (Non-automated Train Operation)		General routes with railroad crossings, etc.
GOA2 STO (Semi-automated Train Operation)	 Driver [starts train, operates doors, operates emergency stop, guides evacuation, etc.]	Some subways, etc.
GOA2.5 (Autonomous operations with attendant who do not have a driver's license for emergency braking, etc.) ⇒ Not defined by IEC and JIS	 Attendant riding in the cab of the lead car [operates emergency stop, guides evacuation, etc.]	None
GOA3 DTO (Driverless Train Operation)	 Attendant riding in the car [guides evacuation, etc.]	Some monorails
GOA4 UTO (Unattended Train Operation)	 No crew member	Some new transportation, etc.

Note: Definitions for automated urban guided transport systems are in accordance with IEC 62267 (JIS E 3802).

Note: From Ministry of Land, Infrastructure, Transport and Tourism data

# Case Studies (Working Style Reforms / Productivity Improvement)

- We aim to achieve “working style reforms / productivity improvement” through employees’ own efforts, improving overall digital capabilities through human resource development.

## Digital Challenge Initiatives

- Digital Challenge refers to the development of apps, etc., by employees who are not IT specialists.
- We have designed the PowerPlatform (app development tool) and others as important digital tools, and development is encouraged at each workplace.
- We are fostering a more comfortable workplace where employees can “resolve workplace issues inexpensively, quickly, and autonomously.”
- Through the development of human resources, we are working to improve overall digital capabilities.

## Results (app development)

- We saved 16,509 hours in operating time between Q1 2022 and Q2 2023.

### <Train patrol report app >

#### (Details)

- The app uses GPS information to instantly calculate and register locations where abnormalities were found during train travel.
- The application can navigate traffic routes to locations where abnormalities were found.




#### (Opportunity)

- In the past, when conducting equipment inspections on Shinkansen trains, it was difficult to accurately identify the location of abnormalities because of the high travel speeds, and large margins of error were a problem.



# Case Studies (Working Style / Productivity Reforms)

- Established of the Digital Hero Certification System to accelerate the Digital Challenge (April 2023)

	Digital challenger (Level 1)	Digital leader (Level 2)	Digital hero (Level 3)
Open badge			
Status sought	Experience in improving workplace development level operations using digital tools	Understand the characteristics of digital tools and can efficiently proceed through a series of development cycles, such as user request consolidation / development / trial / launch / operation.	<ul style="list-style-type: none"> <li>In addition to reaching level 2, achieved significant results in improving business operations using digital tools</li> <li>Teaches workshops on digital tools</li> </ul>
Criteria for accreditation	<u>At least one</u> business improvement action using digital tools for use throughout the workplace	<u>At least three</u> business improvement actions using digital tools for use throughout the workplace	<ul style="list-style-type: none"> <li><u>At least five</u> business improvement actions using digital tools for use throughout the workplace</li> <li>Also, cumulative effect of business improvement using digital tools <u>exceeds 1,000 hours</u></li> </ul>
Expected roles	<ul style="list-style-type: none"> <li>As a DX promotion member, promote business improvement in the workplace using digital tools</li> <li>Follow people who have level 2 or level 3 certification</li> </ul>	As a DX promotion leader, propose, develop, and implement business improvements in the workplace using digital tools	As a DX promotion leader, propose, develop, and implement business improvement in the workplace, group, and area using digital tools

**In 1H FY2023, we certified 20 challengers, 13 leaders, and one hero**



# **IV DX: Current Status and Outlook**

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# DX: Current Status and Outlook

- As we move toward FY2024, the final year of the DX Strategy, we will steadily promote each policy and focus on human resource development, which is one of our priority themes.
- We will continue to promote and accelerate DX to contribute toward the realization of the 2030 Long-Term Vision.

FY2020–2021

COVID-19 and the introduction of Office365 prompted companywide acceleration  
Progress in the use of digital technologies

- Digitization of analog and physical data
- Paperless
- Utilization of web conferencing

FY2022–2024  
(Current Medium-Term Business Plan, DX Strategy)

AI utilization to improve business efficiency and automation  
Horizontal deployment of apps  
Human resource development

## Contributing toward a return to a growth trajectory

- Digitalization of individual operations
- Introduction and rollout of systems and applications

## Contributing to the realization of sustainable growth

- Digitalization of cross-organizational/all-business operations (Realization of CBM, expansion of self-driving, etc.)
- Transformation of businesses and business models for customer-driven value creation (Expansion of JR KYUPO, MaaS, etc.)

Through acceleration of DX, realization of the 2030 Long-Term Vision

## DX not yet begun

- DX-related inputs

# Forward-Looking Statements

These materials contain forward-looking statements concerning business forecasts, targets, etc. of the JR Kyushu Group.

These statements are judgments made by the Company based on information, projections, and assumptions available at the time of the materials' creation. Accordingly, please be advised that actual operating results could greatly differ from the contents of the materials due to the influence of COVID-19; changes in people's values and lifestyles; the economic situation inside and outside Japan and the economic situation in Kyushu; real estate market conditions; the progress of respective projects; changes in laws and regulations; and a wide range of other risk factors.

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