

Strategic Innovation Program (SIP) /3rd Phase: To Build a Smart Mobility Platform

“Implement a smart mobility society by making use of The Japan Mobility Dataspace, which connects people and information”

Report on achievements

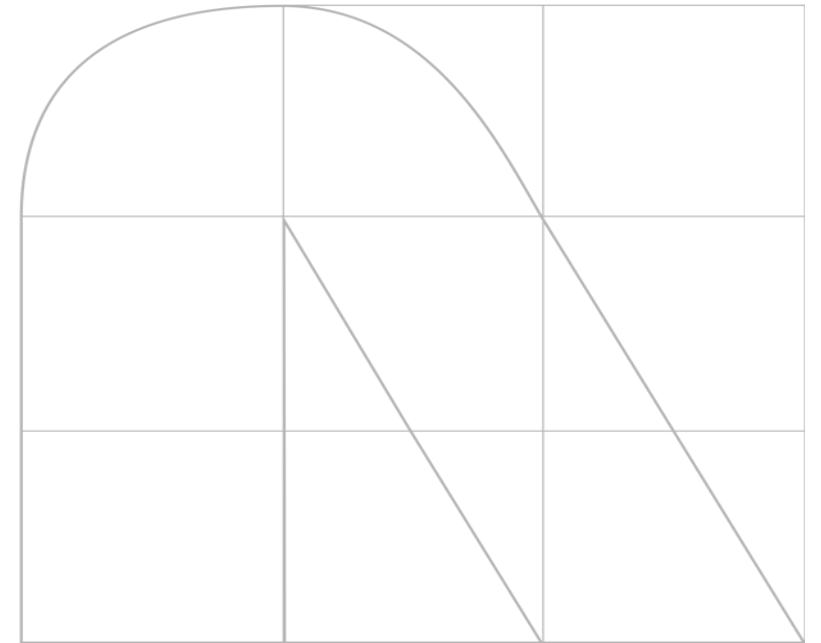
April 2025

NTT DATA Japan Corporation

Table of Contents

1. Project Outline (pp. 3-11)
2. Content of Implementation (pp. 12-)
 - 2.1 R&D subject 9:Construction and demonstration of a platform to make a wide variety of mobility platforms and related data integrated and interoperable (pp. 13-21)
 - 2.2 R&D subject 10:Construction of a cyber-physical road space digital system platform (digital sandbox) to realize safe, comfortable, and rich mobility (pp. 22-30)
 - 2.2.1 Construction of a digital sandbox (pp. 22-27)
 - 2.2.2 Linkage between urban data and mobility data (pp. 28-30)
 - 2.3 R&D subject 11:Development of mobility-compatible services on City OS (pp. 31-38)
 - 2.4 R&D subject 16:Construction of Shared Service for Mobility (SSM), which serves as a platform on which mobility data share/common ownership between startups and other businesses is enabled (pp. 39-51)
3. List of the deliverables in FY2024 (pp. 52-54)

1. Project Outline



(1) Aim of the project

- In order to realize a well-being society through comfortable mobility, we are working to solve regional/areal mobility issues by making use of mobility-related data on Japan Mobility Data Space (JMDS).

Realization of a well-being society with Smart Mobility 2.0

1. Safety

- Establish systems that allow pedestrians to walk safely and motorcyclists to run safely
- Achieve zero traffic accidents through road-vehicle coordination

2. Health

- Develop walkable cities, roads, and mobility
- Maintain local transportation to prevent loss of mobility

3. Comfort

- Allow comfortable city mobility to make cities prosper
- Allow comfortable mobility without congestion



4. Economy

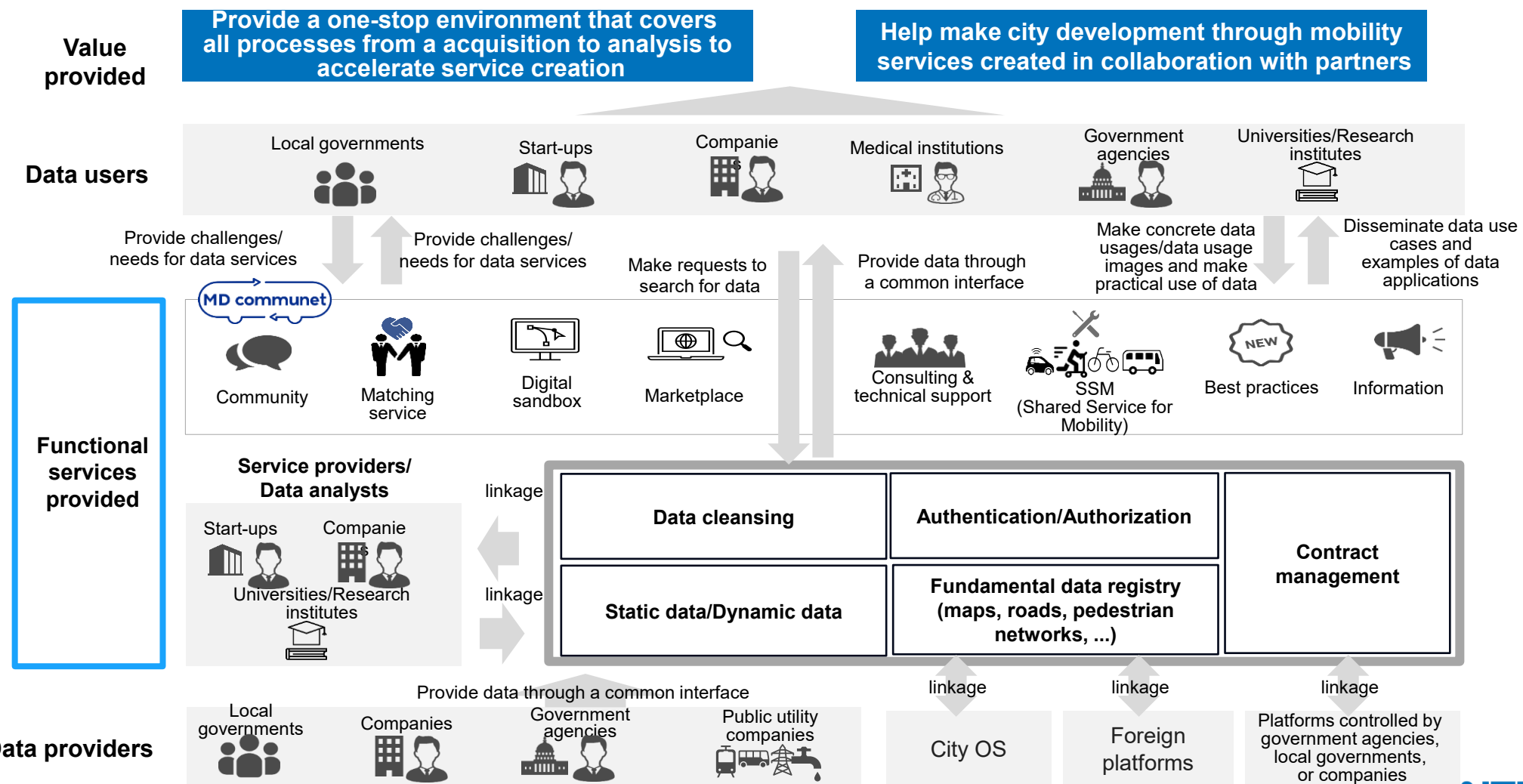
- Revitalize local economy by promoting the mobility of residents
- Improve the mobility of tourists through the development of secondary transportation

5. Environment

- Promote modal shift to public transportation and make electric mobility used more to reduce emissions

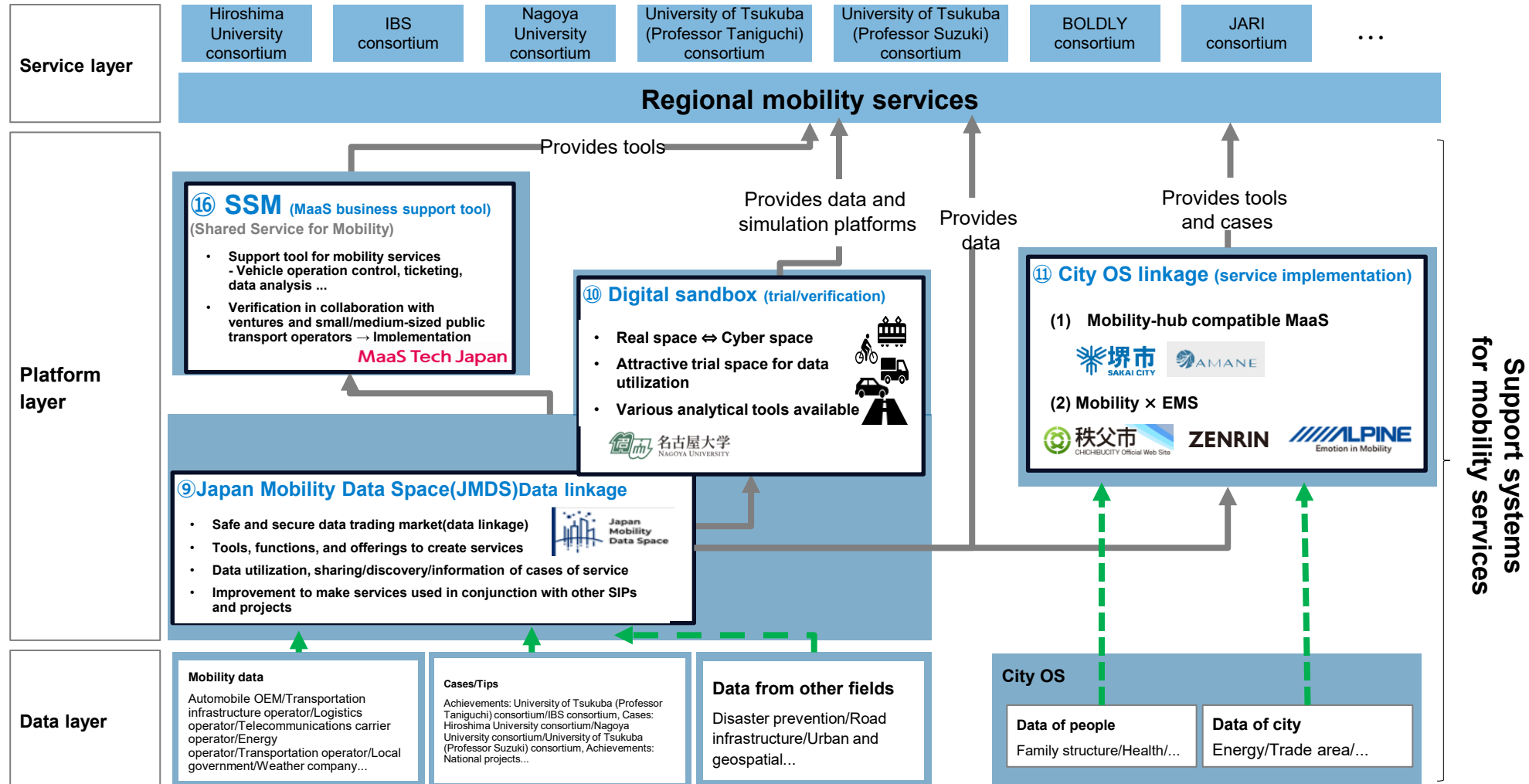
(1) Aim of the project

- The project aims to **build and implement “Japan Mobility Data Space”**, which is a **core distributed federal data linking platform system** for **connecting services and people** who make use of data **through linkage of data distributed and managed by region, by area, and by platform**, to realize a **society without a mobility divide** where people, goods, and services can move freely and independently, safely, comfortably, environment-friendly, people-friendly, and city-friendly.



(2) Overview and structure of the project

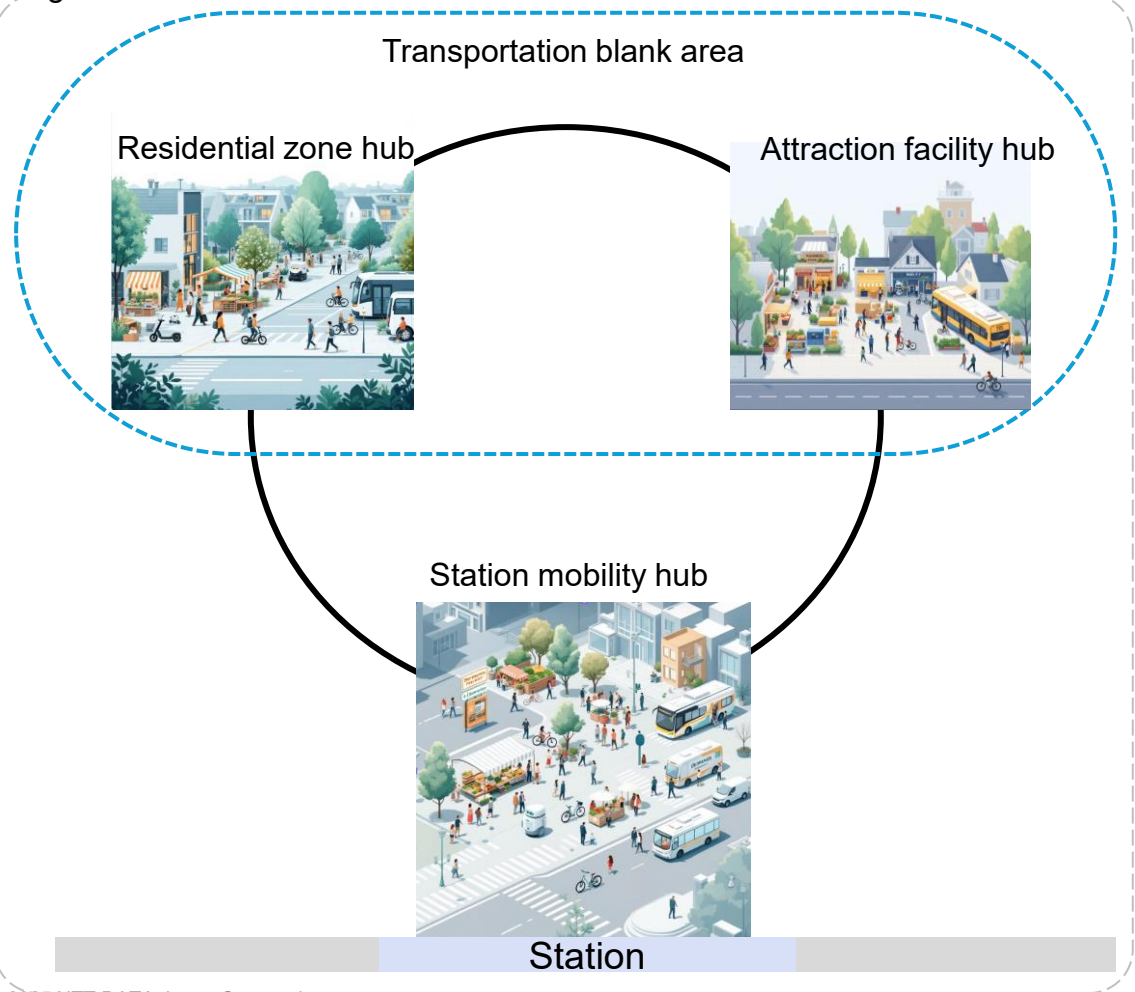
- The project is designed to promote the creation of diverse mobility services through (R&D subject ⑩) Simulations by making use of a data platform, (R&D subject ⑪) Various sorts of services linked with City OS, and (R&D subject ⑫) SSM construction/implementation, setting (R&D subject ⑨) “Japan Mobility Data Space” as the focal point.



(3) Comprehensive worldview we aim at (Example: Eliminate transportation blank areas)

- We aim to make local mobility introduced and continuously operated by organically combining the four R&D subjects centered on JMDS to **build structures that help solve problems in all stages from the formulation of transportation plans to the introduction and operation of mobility, and promote a horizontal application model in which social implementation is included in collaboration with multiple businesses and local governments.**
- In this project, **we will focus particularly on the planning phase of public transportation** to carry out initiatives for it.

Target area



Planning

01

Visualize transportation blank areas

Visualize transportation blank areas with **JMDS × Statistical data × City OS × Digital sandbox**

02

Formulate plans

Select necessary mobility types, propose plans for measures, and formulate vehicle operation plans

Introduction

03

Comprehensive introduction of mobility hubs/mobility

Introduce mobility services based on SSM

Analysis/
Evaluation/Improvement

04

Analysis/Evaluation of operation

Understand the effect of the measures with **Acquired data × City OS data × Statistical data**

05

Improvement/Implementation of the measures

Improve the measures, taking account of the actual circumstances, and implement behavioral change measures

Horizontal application

06

Horizontal application

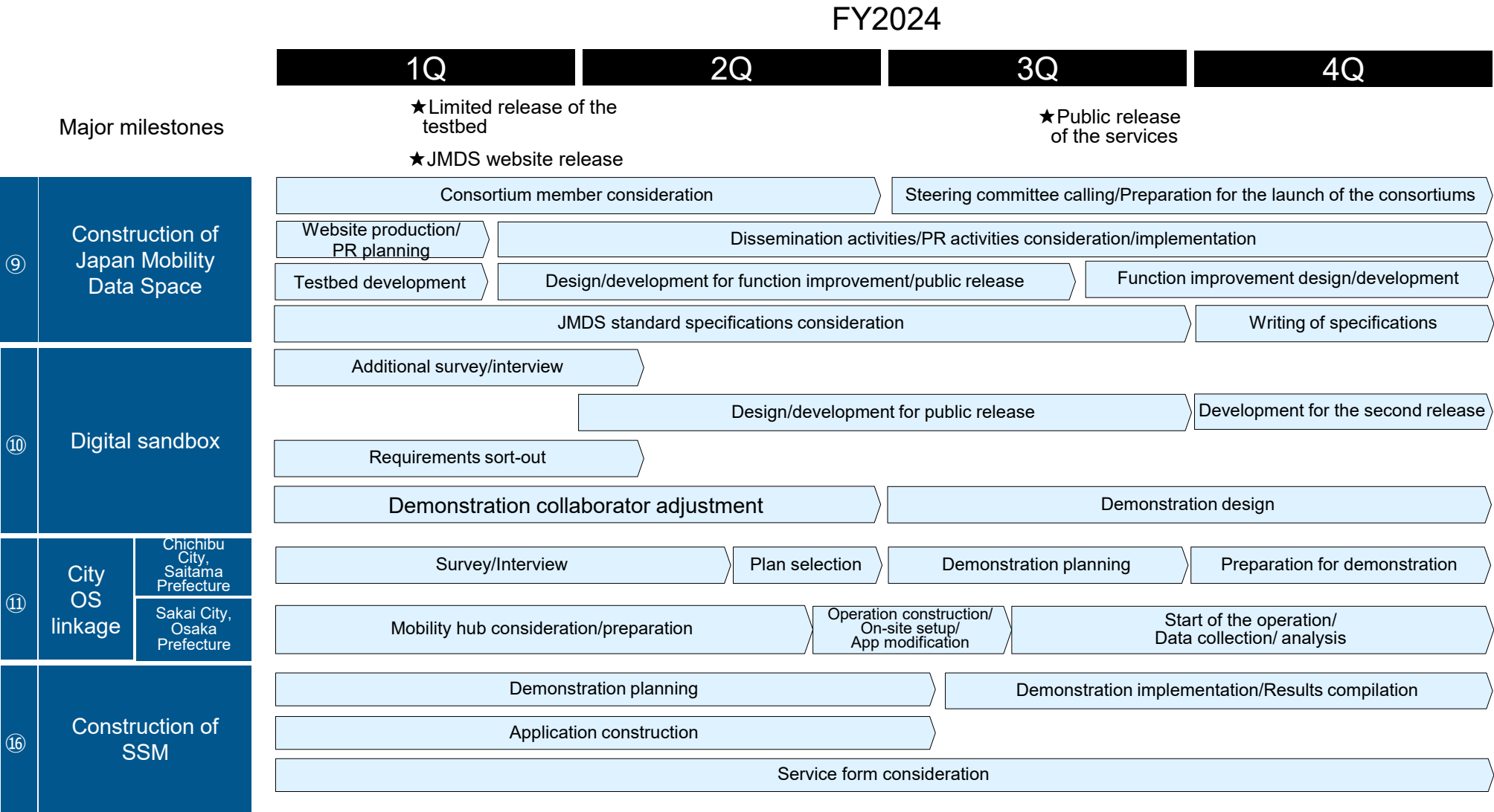
Formulate a social implementation model, and establish guidelines for deployment to other cities

(4) Five-year plan for the whole of the R&D subjects

<div>Vision</div>	<ul style="list-style-type: none"> Smart Mobility 2.0(a society without mobility divides where people, goods and services can move freely, independently, safely, comfortably, and environment-friendly, people-friendly, and city-friendly) To realize Smart Mobility 2.0, solve regional and areal mobility issues through data utilization using Japan Mobility Data Space as a platform 			
	Process	Service development	Demonstration experiment/Evaluation	Establishment of a structure for service utilization
	FY2023	Requirement definition(s)	Materialization of achievement goals and R&D plans	
	FY2024	Preparation for demonstration	Completion of service development for demonstration <ul style="list-style-type: none"> • JMDS testbed development • Digital sandbox development • SSM function development 	Planning/Preparation for demonstration experiment completed <ul style="list-style-type: none"> • Value verification of JMDS x Digital sandbox (one-stop data retrieval - simulation execution) • Preparation for regional mobility service introduction verification (Chichibu City, Sakai City) • Preparation for mobility introduction verification using SSM
	FY2025	Demonstration/ Evaluation	Completion of service development for value improvement <ul style="list-style-type: none"> • Start of marketplace beta version provision • Digital sandbox function addition • Beta-version service development for SSM users 	Completion of demonstration experiment and evaluation <ul style="list-style-type: none"> • Local government demonstration experiment for JMDS x Digital sandbox • Regional mobility service demonstration (Chichibu, Sakai) • Mobility introduction demonstration using SSM (Shiojiri City, Sumoto City)
	FY2026	Preparation for social implementation	Service improvement incidental to the demonstration evaluation	Planning/preparation of practical demonstration experiment
	FY2027	Social implementation	Start of the service operation	Business design in view of social implementation Coordination/negotiation with stakeholders toward service implementation
				Securement of service users [Structural aspect] <ul style="list-style-type: none"> • More than five linkages with data PF [Aspect of used services] • Completion of service hypothesis examination • Demonstration collaboration agreement at local governments
				Increase in service users [Structural aspect] <ul style="list-style-type: none"> • More than 10 linkages with data PF [Aspect of used services] • Local government verification/Case creation
				Completion of framework creation in view of social implementation
				Preparation for social implementation completed

(4) Overall project schedule

■ The schedule for FY2024 is as follows:



(5) Major achievements in FY2024

- Toward the demonstration and evaluation in the next fiscal year, we **developed JMDS equipped with generative AI and digital sandbox**, and **released services to the public** in December 2024.
In the digital sandbox, we **released a public transportation accessibility evaluation tool in collaboration with the Nagoya University consortium**.
- Toward the regional mobility service introduction verification, **a mobility hub installed and designed by making use of JMDS opened in Sakai City, Osaka Prefecture in November 2024**.
- As of March 2025, in linkage with **eight data platforms**, **the number of cataloged items exceeded 10,000**. We have gained **53 businesses and organizations** as JMDS users; thus we have been in a state where we will be able to aim for **further increase in users**.

Topics of the achievements

Service development

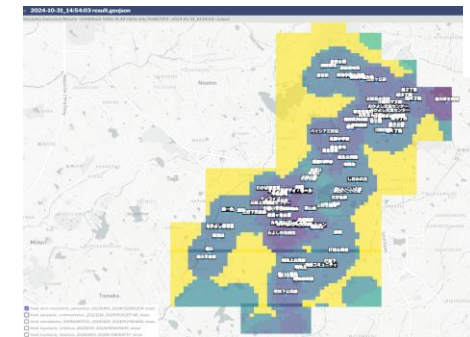
- We developed JMDS and digital sandbox, and released a testbed in May and **services in December. We quickly provided an environment that users can operate**.
- We **conducted consideration of the SSM architecture** that is aimed to realize the rapid launch of small-scale mobility services.

Planning/ preparation of the demonstration experiment

- Using JMDS to design and implement a mobility hub, **we opened Japan's first mobility hubs in Sakai City, Osaka Prefecture in November 2024**.

Establishment of a structure for service utilization

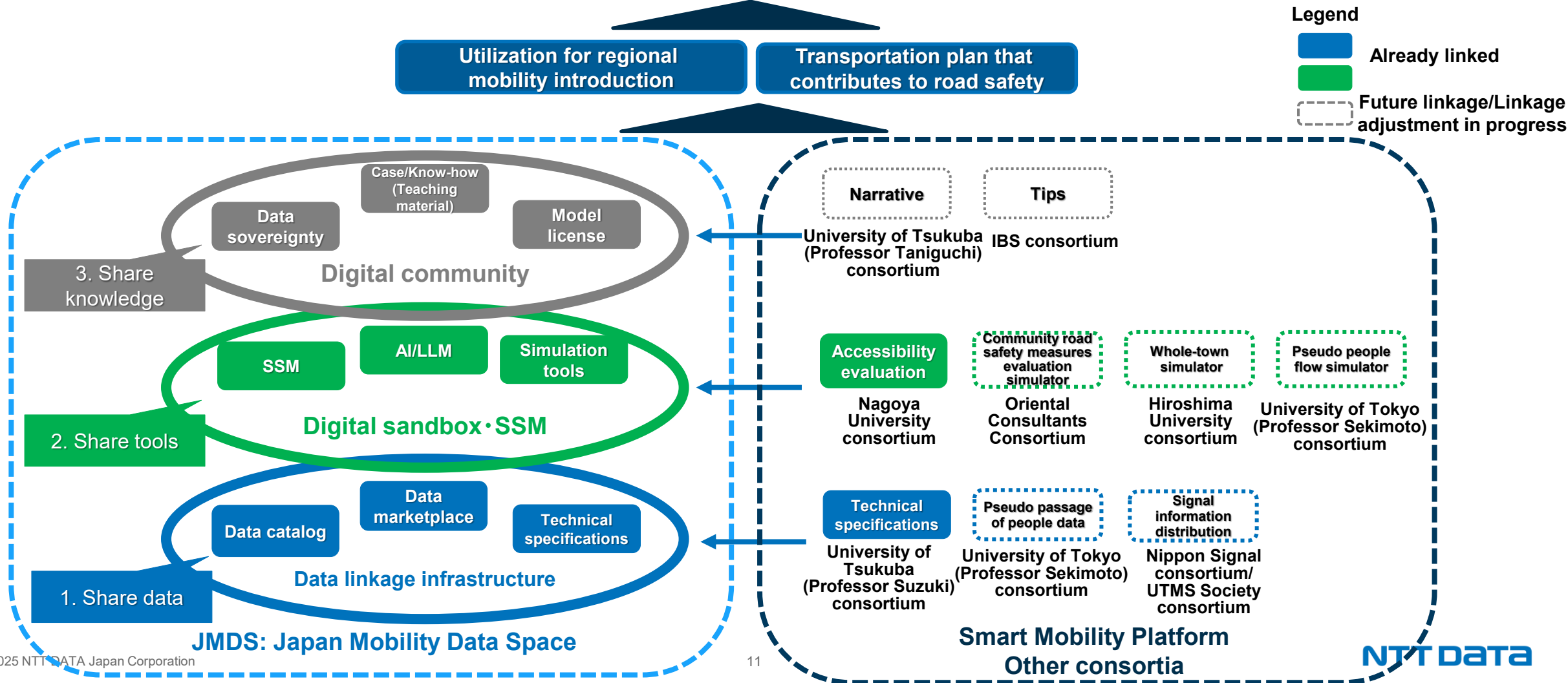
- As of March 2025, in linkage with **eight data PFs**, we posted **over 10,000 data catalogs**.
- We acquired **53 users (businesses and organizations)** as JMDS users.
- **In collaboration with NEC, we formulated an alpha version of the technical specifications**.



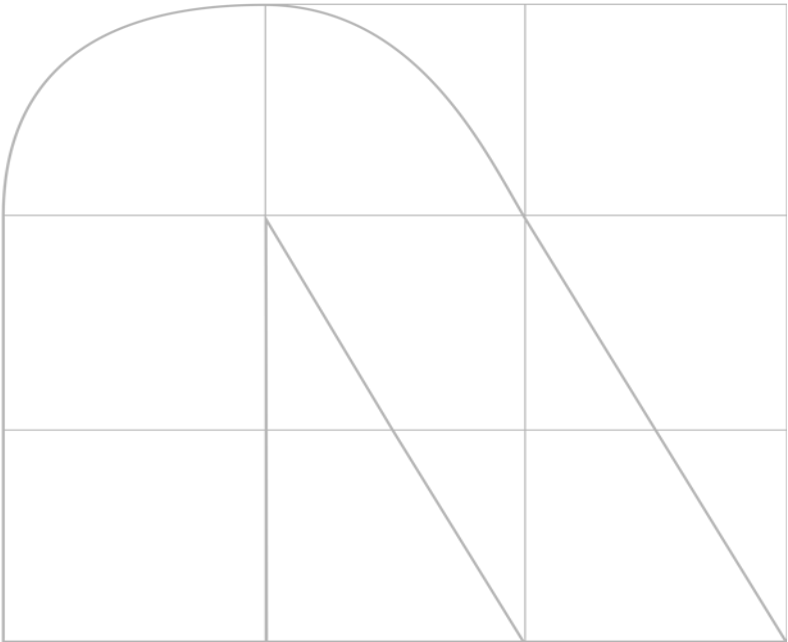
(6) Overall picture through collaboration with SIP and other consortia

- JMDS will aim to realize a transportation plan that contributes to the introduction of regional mobility and road safety, **considering the linkage with achievements of other consortia in the future**, under its obligation to form groups of tools such as the digital sandbox and SSM and digital community through data linkage.
- Through linkage between JMDS and achievements of the respective consortia, we make it possible to **realize services that are sustainably operable even after the end of the SIP**.

Through linkage with JMDS, sustainable service provision is possible even after the end of the SIP.



2. Content of Implementation



2.1 R&D subject 9:

Construction and demonstration of a platform to make a wide variety of mobility platforms and related data integrated and interoperable

(1) Summary

Aim of the project

- **Construct a distributed federated data sharing platform named “Japan Mobility Dataspace,”** which is designed to link distributed data and connect people who make use of data with services to improve the quality and efficiency of mobility services and promote innovation.

Plan for FY2024

- Service design for JMDS, testbed development and promotion of public release/dissemination, creation of an alpha version of technical specifications
- Consideration of the JMDS operating organization and preparation for the establishment

Major achievements

- **JMDS testbed development and promotion of public release/dissemination**
 - We developed a JMDS testbed and **made an integrated data catalog service public in December. We implemented mobility data and case search in which Large Language Models (LLMs) are used** and maintained a mechanism for data utilization. As of February 2025, we posted **over 10,000 data catalogs** and **acquired 53 users (businesses and organizations)**.
 - In order to raise the awareness of JMDS, we published a promotional website in May 2024 and an interview article with SPD Koshizuka at the end of December. Together with the effect of the publication of the article, it **led to the acquisition of fourteen members, proving that the expectation and demand for these services are high.**
- **Service design for Japan Mobility Data Space**
 - We interviewed local governments and construction consultants, etc. and **organized service hypotheses required for JMDS**. We additionally implemented an environment in which some functions can be operated as a testbed.
- **Creation of an alpha version of the technical specifications**
 - We formulated a **concept of JMDS Hub that is independent of connector types** to allow various sorts of industries to link data linkage platforms. With the aim of absorbing linkage interface differences on the side of data provider and making coordination with a search function to enable one-stop data retrieval, we made documentation, focusing on technical elements and architectural design. This technical specification will serve as the technical guide for collaboration demonstration experiments with the SIP consortia in FY2025.
- **Consideration of the JMDS operating organization and preparation for the establishment**
 - In order to conduct a consideration for the materialization of JMDS operation, we made selections of business operators to be involved in the formation of the organization. We selected five core companies, began discussions toward the establishment of a preparatory working group for the next fiscal year, and made design for the vision and concept of the operating organization.

Plans/Outlooks

- Establishment of a data distribution platform through the service provision of the marketplace (beta version)
- Verification/evaluation of service viability and business viability through the implementation of demonstration experiments in collaboration with local governments

(2) Use case of JMDS (optimization of regional transportation)

- Currently, there is no quantitative data that grasps actual transportation conditions in regions, and regions that result in mobility mismatch are many in number.
- By providing the data necessary to grasp actual conditions from various cases and know-how, analysis and evaluation through simulations with that data, and sets of services necessary for service introduction, we make continuous evaluation/improvement possible from the introduction of optimal mobility that is suited to the actual conditions in the region and aim to enable the introduction/operation of mobility that is suited to the region.

AsIs

New mobility (demand-responsive, etc.) mismatching the region
It takes a long time and much cost for the introduction of new mobility such as demand-responsive, community bus, and ride sharing, but the introduction does not result in continuous operation

The actual transportation conditions in the region are not visible

No data to accurately grasp mobility needs of residents

Grasping needs through questionnaires



Local governments
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It takes a long time to reach an agreement with stakeholders

Difficulty in clear presentation with quantitative data



Transportation consultant



ToBe

Introduction of optimal mobility that is suited to the actual transportation conditions in the region
⇒ **Post-introduction evaluation and improvement enables continuous maintenance/operation of mobility**

Step1
Grasp actual transportation conditions

JMDS marketplace

Retrieval/Use of various sorts of data

People flow

Personal car

Rental car

...

Search for various cases

LLM

Case Guidelines

Step2
Introduce optimal mobility

Mobility introduction support service(SSM)

Demand-responsive transportation

Packages required for service introduction

Settlement

Vehicle operation control

...

Personal mobility

Step3
Grasp/evaluate the effects of the introduction

Digital sandbox

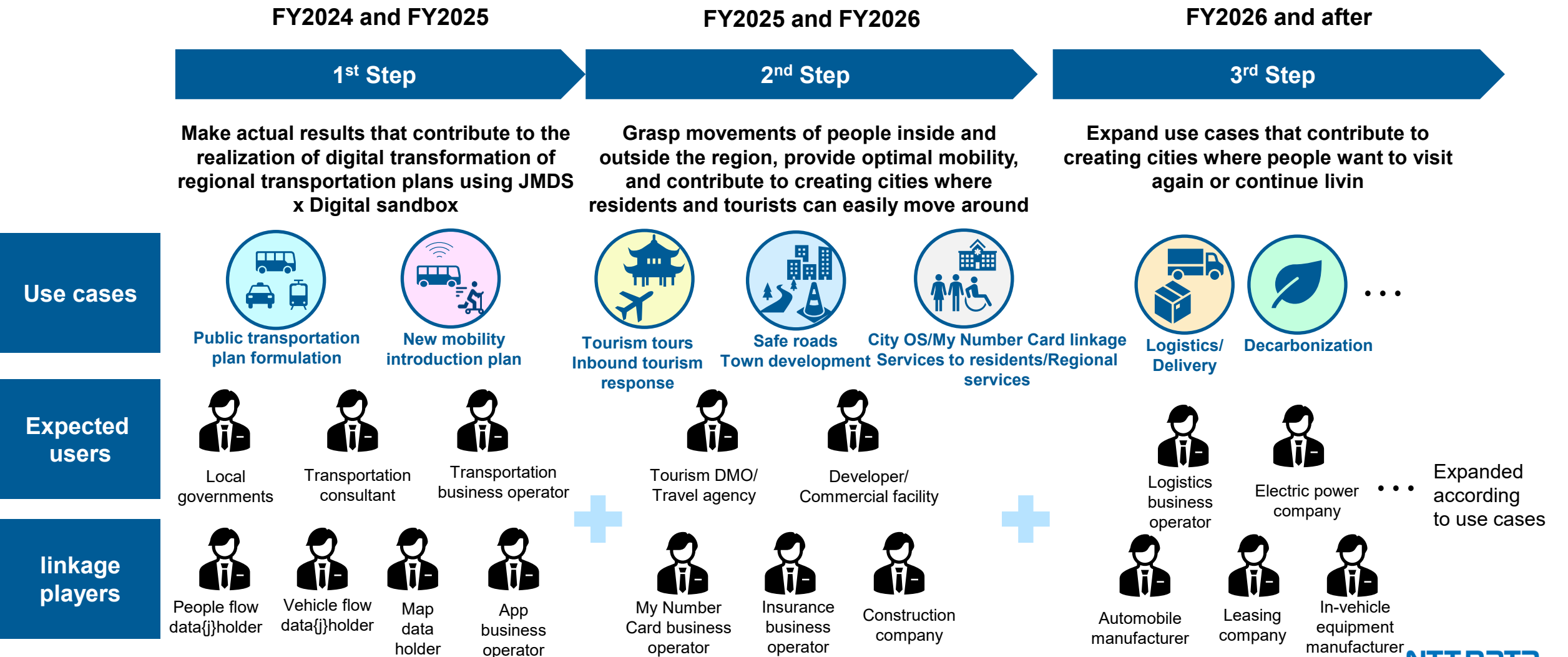
Evaluation after the introduction of mobility services

LIPT-Sim (accessibility evaluation)

...

(2) Roadmap for JMDS use case and user expansion

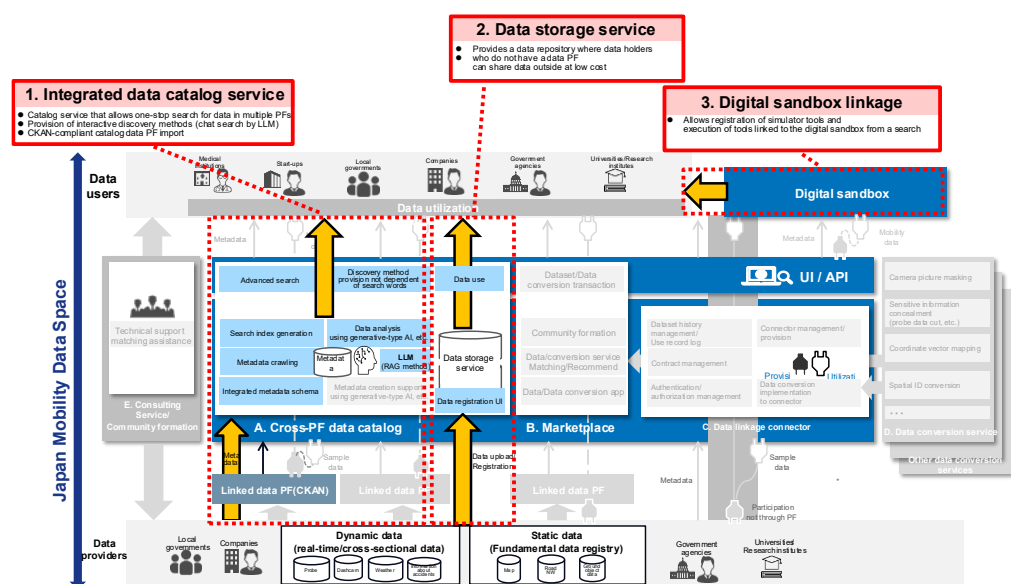
- In promoting the spread and utilization of JMDS, we plan to create JMDS as a common platform in the mobility field, creating use cases that contribute to problem solution of users as actual results, listening to the voices of users and collaborating players and making improvements, and expanding use cases together with users and collaborating business operators.



(4) Achievements in FY2024 (JMDS testbed development/Technical specifications formulation)

- In the development of the testbed environment, as the MVP of the overall JMDS concept, we partially released **1. Integrated data catalog service** and **2. Data storage service** to stakeholders in May 2024. We interviewed the users using the environment, brushed up functions, added **3. Digital sandbox linkage**, and **made a public release in December 2024**.
- With respect to 1. Integrated data catalog service, for the purpose of cross-sectional searches from a data catalog, we developed **a chat search function using LLM and Retrieval-Augmented Generation (RAG)**, in addition to the usual keyword search. We got evaluation that **RAG is useful to search for required data sets based on use cases** even from the results of the user hearing.
- Since the linkage with data linkage platforms of various industries leads to the value of JMDS, thinking that it is important to **lower the JMDS participation barrier of the existing data linkage platform systems**, we formulated the **JMDS Hub concept**, which is aimed to create **data space in which participation is allowed regardless of connector type** in the **alpha version of the technical specifications**. By absorbing linked interface differences on the side of data provider and making coordination with the search function, we make it possible to get data in one stop.

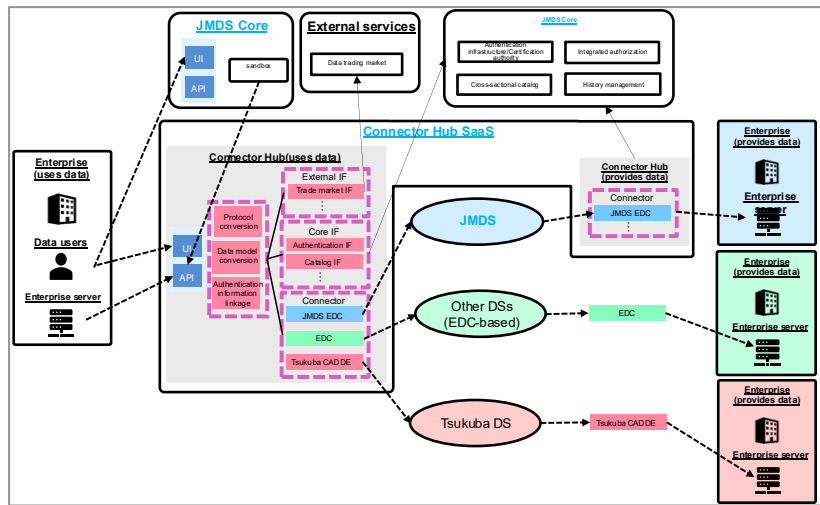
Testbed environment construction scope for this year



Chat search leveraged by LLM/RAG



Alpha version of technical specifications/ JMDS Hub concept



(4) Achievements in FY2024 (promotion of dissemination)

- Thinking that it is important to first let users experience it, feel its value, and find issues, we developed a JMDS testbed and **released the integrated data catalog service to the public in December 2024**. We **implemented mobility data and case search using LLM** to maintain a mechanism for data utilization. As of February 2025, we posted **over 10,000 data catalogs** and **acquired 53 users (businesses and organizations)**.
- For the promotion of dissemination, in order to raise the awareness of JMDS, we published a promotional website in May 2024 and an interview article with SPD Koshizuka at the end of December. We also held a JMDS webinar at the end of March 2025. Together with the effect of the publication of the article, it **led to the acquisition of fourteen members, proving that the expectation and demand for these services are high**.

JMDS dissemination website

SPD Koshizuka interview article

JMDS webinar



<https://mobility-data-space.jp/>



<https://ligare.news/story/jmds-koshizuka/>



(4) Achievements in FY2024 (service hypothesis consideration for social implementation)

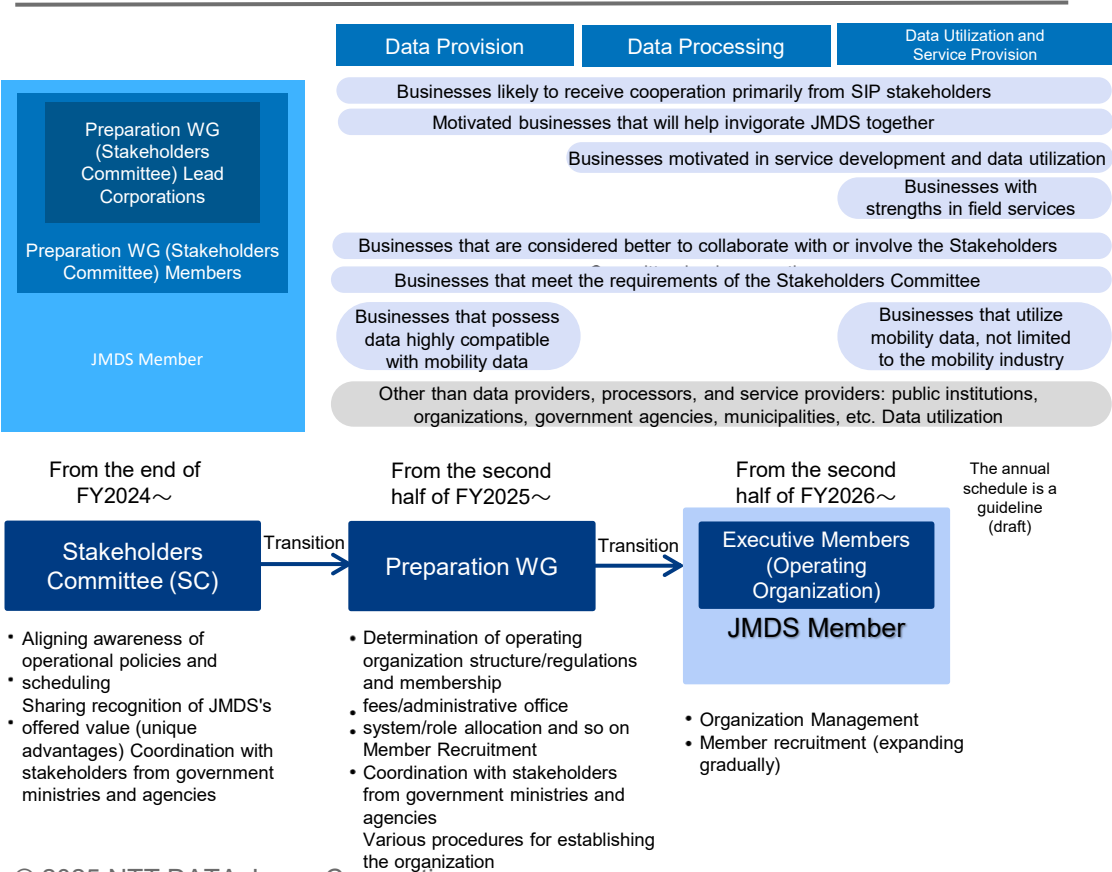
- This year, we gave local governments and construction consultants, etc. hearings and **organized service hypotheses required for JMDS**.
- With respect to transportation planning and mobility introduction by local governments, there are strong voices saying that they **don't know how to handle data**, and we found that there is a demand for **recommends on data usage cases in similar local governments** and **tools that make it easy to implement data analysis**.

Who	Needs	Current trouble	Function provided	Function details
Local governments Person in charge of transportation	Easily find the required data	<ul style="list-style-type: none"> There are many PFs, and it is difficult to know which PF to use to find the data 	① Data (including combinations of multiple pieces of data) search	<ul style="list-style-type: none"> Enables interactive and cross-sectional search for required data by LLM
Local governments Person in charge of transportation	Get an image of analysis result from cases	<ul style="list-style-type: none"> Analysis cases are few or analysis cases publicly available are insufficient in number 	② Case search/Case recommendation	<ul style="list-style-type: none"> Enables easy search for similar cases in other local governments Enables search for guidelines and know-how (content published by each ministry/agency and developer community, etc.)
Local governments Person in charge of transportation	Easily make analysis	<ul style="list-style-type: none"> There are too many processes in data visualization/analysis, such as preparation for data processing work and tool utilization, and each task is highly difficult 	③ Data integration/④Data aggregation/⑤Statistical analysis/⑥Introduction to simulation/analysis service (provider)	<ul style="list-style-type: none"> Provides an environment that allows users to run a simulator from data selection with simple GUI Provide a simulator according to the use case
Local governments Person in charge of transportation	Real-time data available	<ul style="list-style-type: none"> Only hourly or daily data is available Data is provided at intervals of a month and cannot be received immediately 	⑧ Real-time data utilization	<ul style="list-style-type: none"> Provides data linkage functions through connector linkage
Local governments Person in charge of transportation	Make appropriate subsidy projects chosen	<ul style="list-style-type: none"> When searching for a subsidy project that can be used for measure implementation, it is necessary to crawl the websites of the ministries and agencies with Google or other search engines to find them 	⑨ Subsidy project search	<ul style="list-style-type: none"> Provides data linkage functions through connector linkage
Consultant	Make features of data comparable in list	<ul style="list-style-type: none"> Incomprehensible that what kind of data is usable in the first place Even if it is comprehensible, it is not identifiable who is providing it The characteristics of each data are incomprehensible, and it is necessary to ask the provider about them whenever the characteristics of the data are incomprehensible 	⑩ Data catalog	<ul style="list-style-type: none"> Provides data linkage functions through connector linkage
Consultant	Make small lots available	<ul style="list-style-type: none"> It is impossible to purchase data in small (limited period or area, etc.) It is necessary to make data purchase by purpose of use, so a contract is required each time, and cost is high 	⑪ Immediate processing/provision of data ⑫ Marketplace	<ul style="list-style-type: none"> Allow users to try out sample data in the digital sandbox Allow users to process and provided necessary data only Purchase of small lots of data, Deposit purchase
Consultant	Implement procedures to use all data in one go	<ul style="list-style-type: none"> For data provision, procedures and processing work are time-consuming, and the lead time up to the provision is long (it takes about one month) 	⑫ Marketplace	<ul style="list-style-type: none"> Allows users to make all from data search, contact, and procedures seamlessly, and data is provided in a short period of time

(4) Achievements for this fiscal year (Preparation for the formation of the JMDS operating organization)

- We considered strategies for realizing the social implementation of JMDS, including the value provided, the operational mechanisms and organizational structure, and how to involve stakeholders.
- Furthermore, in preparation for the establishment of an operational organization, we have set up a preparatory working group (WG) to engage external organizations and initiate discussions aimed at concretely advancing the aforementioned considerations.
- Simultaneously, we also deliberated on collaboration strategies based on the initiatives of related government ministries and agencies.
- Discussions with stakeholders regarding the social implementation of JMDS have just begun. Moving forward, it will be necessary to identify the baseline (areas of collaboration) and to concretize our specialties (element areas: strengths). Based on this, next fiscal year, it will be important to increase the number of members in the preparatory working group (WG), involve more stakeholders, and continue accumulating discussions.

Strategies for Member Selection and Organizational Establishment











Discussion and future strategy by core members



⇒Prepared the draft organization establishment prospectus and the draft establishment plan

(5) Roadmap up to JMDS social implementation

- Toward the practical implementation from FY2026, we aim at the development of the marketplace (beta version) and service provision in FY2025.
- In parallel with it, we do a promotion to SIP and other consortiums, existing platforms, and stakeholders in mobility-related industries, aiming to raise the awareness and understanding of JMDS.

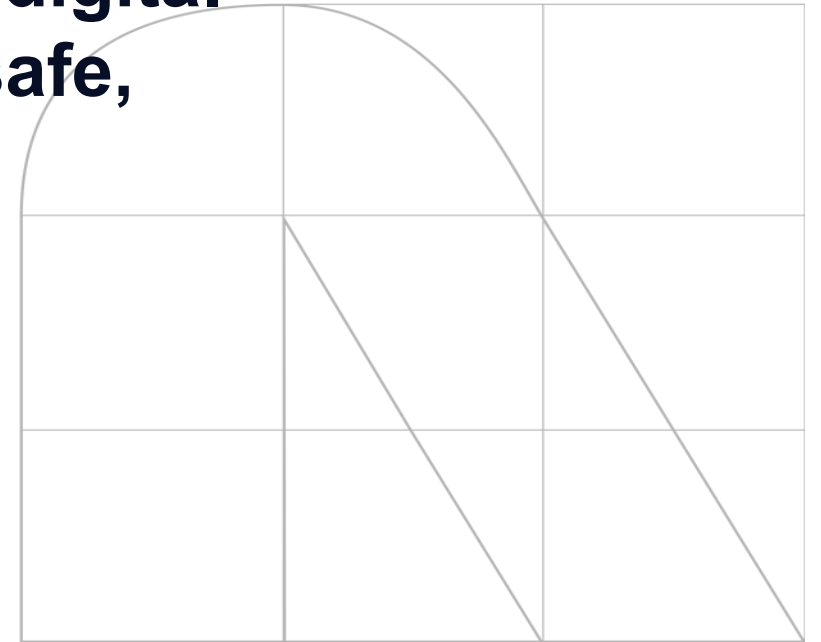
Item	FY2024				FY2025	FY2026	FY2027	FY2028 and after
	1Q	2Q	3Q	4Q				
Milestone	▲Release the testbed		▲Release to the public		▲Provide the marketplace (beta version) ▲Stage gate ▲Provide trial version of connectors ▲Launch working group	▲Launch operating organization	▲Start providing all services ▲Start connector provision ▲Establish JMDS Alliance	Social implementation
Technology development	Phase1 :Provision of a testbed limited to data catalog functions/ Functional addition/modification and promotion of JMDS design in view of Phase 2					Initiatives to provide all services including connectors		
	Data catalog function/ Digital sandbox function		Function addition/modification			Connector infrastructure implementation		
Rules formulation/ Membership expansion	JMDS technical standards/specifications formulation							
	Collaboration with related in   							
	 Publication of MD communet members in data catalogs		    Intra-SIP consortium (University of Tsukuba, Hiroshima University, ... Nagoya University, etc.)					
Business	Consideration/verification of JMDS usefulness and business feasibility				Demonstration/Evaluation	Demonstration/Evaluation		
			Demonstration collaboration agreement with local governments		Dissemination activities to companies/organizations other than MD communet members (local governments, universities, Slers, mobility service providers, data analysts)			
Operating organization	Organization review/preparation					Organization establishment/operation		

Social implementation

2.2 R&D subject 10:

Construction of a cyber-physical road space digital system platform (digital sandbox) to realize safe, comfortable, and rich mobility

2.2.1 Construction of a digital sandbox



(1) Summary

Aim of the project

- Provide information that citizens, municipalities, transportation operators, etc. can feel right about through visualization of mobility issues and effects of measures
- Construct an environment in which users/providers can perform/provide various sorts of simulations without time and effort (work/cost), and contribute to the creation of the mechanism of a market where data, simulation tools, and users gather one after another

Plan for FY2024

- Make architectural design of the digital sandbox that realizes a cycle from data search to simulation execution in one stop, and implement and release pilot cases

Major achievements

- **Architectural design of the digital sandbox**
 - Based on challenges that simulation providers face, we designed an **execution platform that enables the provision of a platform that meets requirements of simulators, data processing, and WebAP that publishes simulators as the architecture of the digital sandbox**
- **Digital sandbox Implementation and publication of pilot cases**
 - In collaboration with JMDS, we released a platform that makes all from search for issues to be solved or similar cases to tool search executable in one stop
 - Accessibility evaluation tool of the Nagoya University consortium (released in December 2024)
 - Tool to visualize transportation blank areas using buffer analysis in QGIS (released in March 2025)
 - We **realized the first step of the cycle**; service expansion → further expansion of users → user feedback → expansion of the digital sandbox
 - After the release of services, **it led to the acquisition of fourteen members, proving that the expectation and demand for these services are high.**

Plans/Outlooks

- In FY2025, we will expand the number of users and providers and increase the number of evaluation cases, while expanding simulations/corresponding data and maintaining basic functions
- We will take in user interviews and feedback to continue to carry out improvement activities toward full-scale operation in FY2027 and subsequent social implementation

(2) Aims of the digital sandbox

- Provide information that citizens, municipalities, transportation operators, etc. can feel right about through visualization of mobility issues and effects of measures.
 - Construct an environment in which users/providers can perform/provide various sorts of simulations without time and effort (work/cost), and contribute to the creation of the mechanism of a market where data, simulation tools, and users gather one after another.
- This year, **in collaboration with JMDS and the Nagoya University consortium, we realized the cycle from data search to simulation execution in one stop.**

Present circumstances

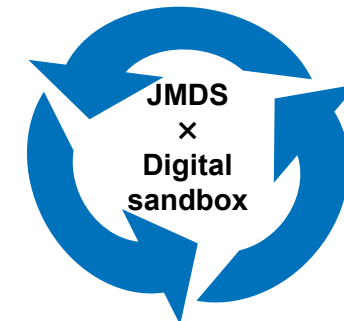
- I have ideas for solving existing mobility issues or introducing new mobility, but I don't know expected effects and it takes a long time for execution
- Mobility data and tools are scattered, so it is difficult to make simulation preparation, including collection/use procedures and data processing
- I want to use the mobility data and tools I have to solve transportation issues of our company and society, but I don't know how to use them



Aim of the project

- Make it possible to easily visualize and analyze issues and effects of measures
(information provision aimed at budget acquisition, residents explanation, and measures implementation)
- Allow users to use mobility data and simulators together
- Realize a market where mobility data, simulation tools, and users gather

Data expansion



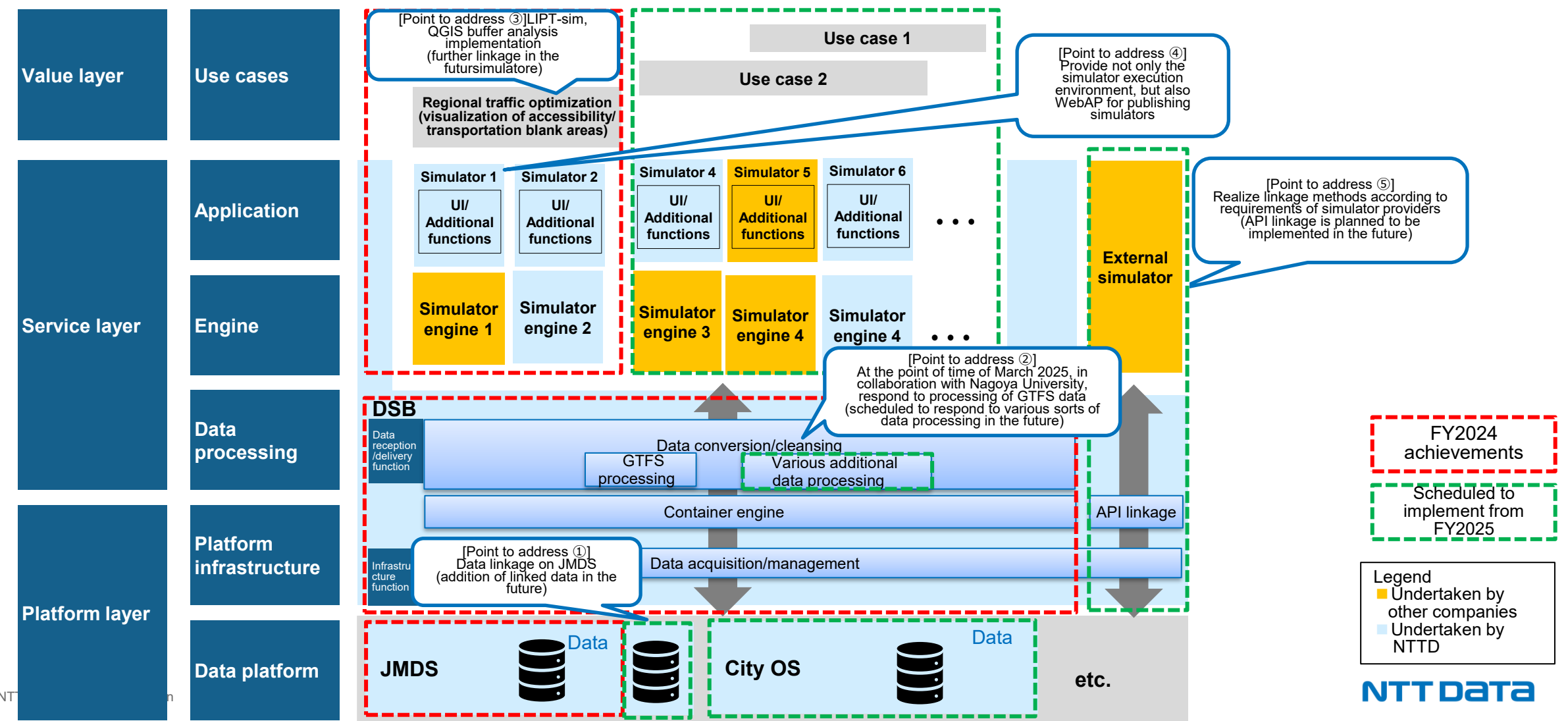
Simulation expansion

Operation/Improvement (to create cases and provide cases)

(3) Achievements in FY2024 (Architectural design of the digital sandbox)

■ We interviewed users (local governments, construction consultants, transportation infrastructure operators) and simulation providers. Based on the following challenges, we designed an **execution platform that enables the provision of a platform that meets requirements of simulators, data processing, and WebAP that publishes simulators** as the architecture of the digital sandbox.

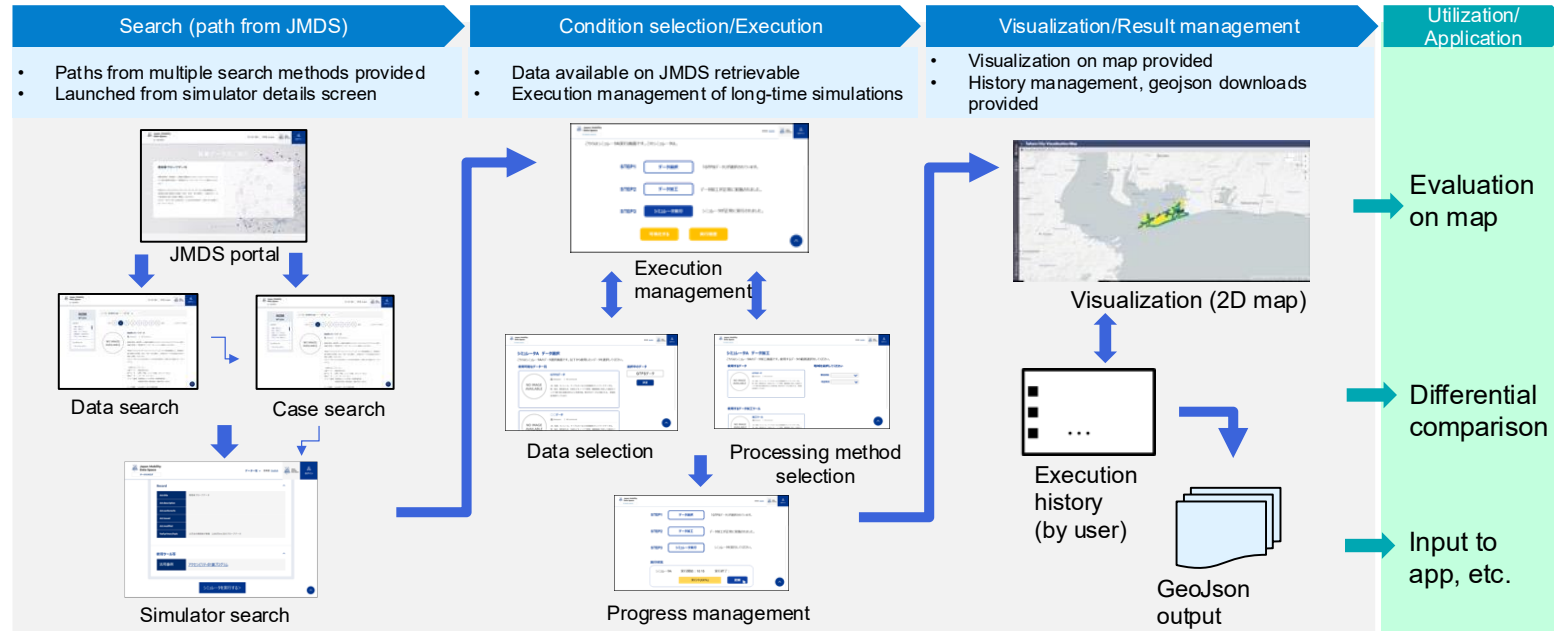
- [Challenges]
- It takes time and money to make data acquisition and processing prior to simulation execution (Points to address ①②)
 - The maintenance of simulations requires high costs, thus the maintenance of GUI and public environment are inevitably put off (Points to address ③④⑤)



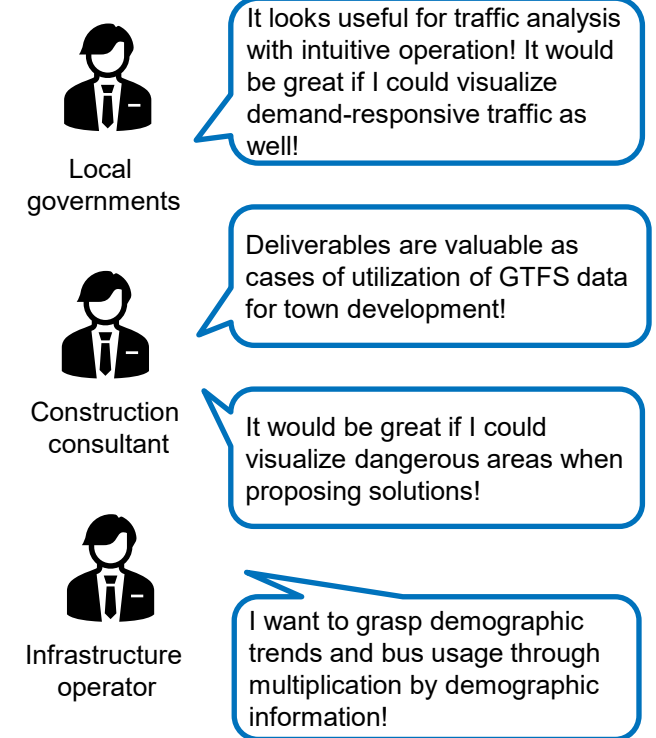
(3) Achievements in FY2024 (development/release of the digital sandbox)

- In collaboration with the Nagoya University Consortium's accessibility evaluation tool (LIPT-sim), we **made a limited release on the digital sandbox in December**. In collaboration with JMDS, we provided a platform that makes all from search for issues to be solved or similar cases to tool search executable in one stop.
- After the release of services, **it led to the acquisition of fourteen members, proving that the expectation and demand for services are high.**
- We made the first step to **implement the cycle; service expansion → further expansion of users → user feedback → expansion of the digital sandbox.**
- In the second release in March 2025, we equipped a tool that visualizes transportation blank areas in concentric circles using QGIS buffer analysis, which is recommended by the Ministry of Land, Infrastructure, Transport and Tourism to local governments, with it and publish the tool.

Paths from JMDS to the digital sandbox



Actual feedback from users after the service release



(4) Roadmap for the digital sandbox

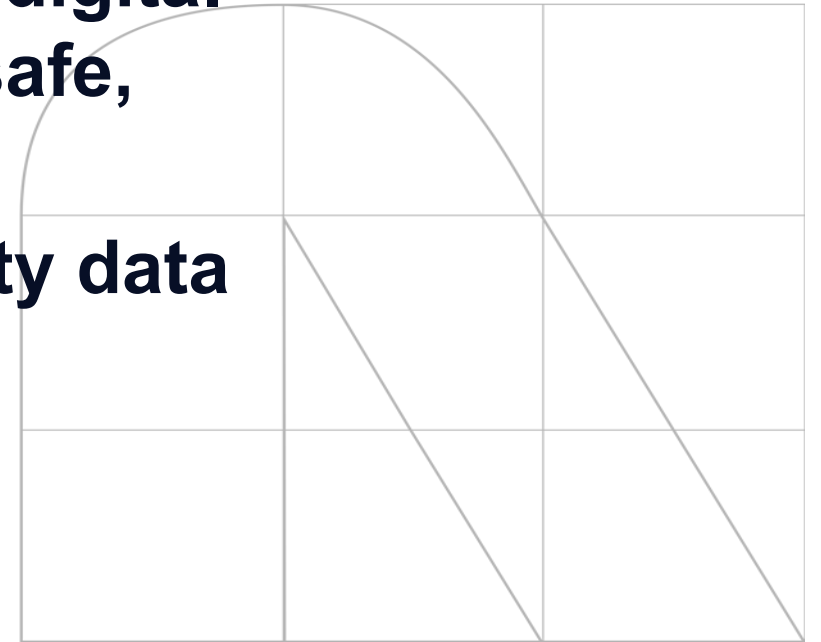
- In FY2025, we will expand the number of users and providers and increase the number of evaluation cases, while expanding simulations/corresponding data and maintaining basic functions.
- We will take in user interviews and feedback to continue to carry out improvement activities toward full-scale operation in FY2027 and subsequent social implementation.

Item	FY2024				FY2025	FY2026	FY2027	FY2028
	1Q	2Q	3Q	4Q				
Milestone	▲Equip it with LIPT-sim (Nagoya University consortium collaboration, accessibility evaluation) ▲▲Implement QGIS buffer analysis (visualization of transportation blank areas) ▲Stage gate					▲Provide an environment where various types of simulations can be performed/provided without time and effort (work/cost) ▲Realize a market where simulators, data, and users gather		Social implementation
Service development	Other consortia linkage expansion consideration/implementation							
	Unique simulators response consideration/implementation							
	Various types of data linkage, data response <ul style="list-style-type: none">• OD data, pseudo people flow data, etc..• Data processing/conversion/generation (display of data processing catalogs, etc.)							
Demonstration experiment/ Evaluation						Application to evaluative verification of existing/ new mobility systems		
Establishment of a structure toward service utilization	Commercially available private simulators response consideration/implementation <ul style="list-style-type: none">• Collaboration model examination							
	User interview/feedback incorporation/additional implementation (awareness of issues, necessary data, simulations, UI, execution environment improvement, etc.) *Implemented in parallel with PR activities for demonstrations and cases in collaboration with other R&D subjects							
						Business model establishment		

2.2 R&D subject 10:

Construction of a cyber-physical road space digital system platform (digital sandbox) to realize safe, comfortable, and rich mobility

2.2.2 Linkage between urban data and mobility data



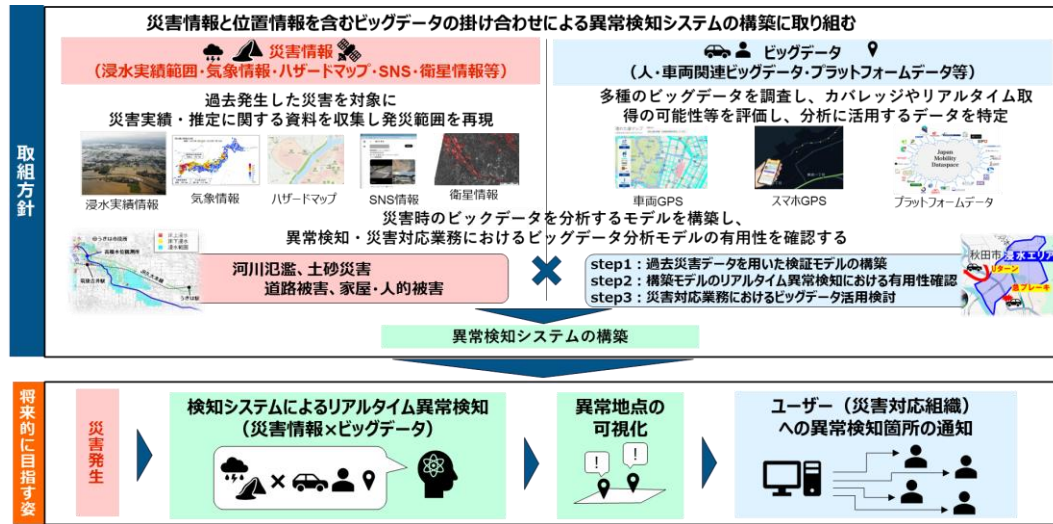
(1) Achievements for this fiscal year (Integration of urban data and mobility data)

- To concretize the requirements and use cases for mobility data in the field of disaster prevention, we conducted discussions with the theme contractors of SIP Phase 3 Smart Disaster Prevention. We confirmed the needs related to mobility data in abnormal detection during disasters. We examined use cases for utilizing mobility data and formulated a demonstration plan for the next fiscal year.
- Based on the examination results, we formulated the demonstration plan for the next fiscal year with the aim of utilizing mobility data in urban data. Taking into account last year's examination, we conducted hearings to confirm the need to repurpose data obtained from service robots for barrier-free applications. We also developed the plan with the intention of publicly releasing and sharing data in conjunction with the urban OS.

Disaster Prevention

Utilization of Mobility Data in Cooperation with SIP Phase 3 Smart Disaster Prevention

- Survey of Mobility Data Needs During Disasters
→ There is a need for utilization in anomaly detection.
- Consideration of use cases combining data useful during disasters (disaster prevention/mobility)
Selection of required data/coordination with business operator

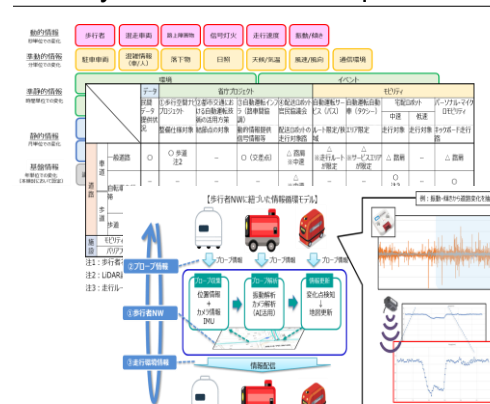


Barrier-Free Support / Service Robots

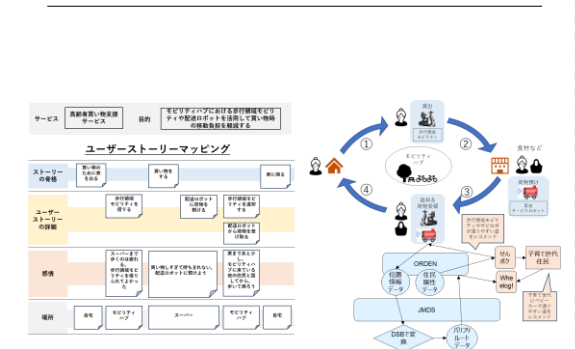
Repurposing of Service Robot Data for Barrier-Free Applications on Local Roads

- Consideration of the definition of data required for the operation of service robots, electric wheelchairs, electric kickboards, and other specific small vehicles, as well as walking space mobility, and the possibility of common use. Based on the current state of data infrastructure, we defined the required data specifications.
- To ensure the continuity and updateability of data acquisition and utilization, we prepared the data for multi-purpose use, and formulated use case considerations and demonstration plans that include local mobility services and logistics.

Survey Results / Data Requirements

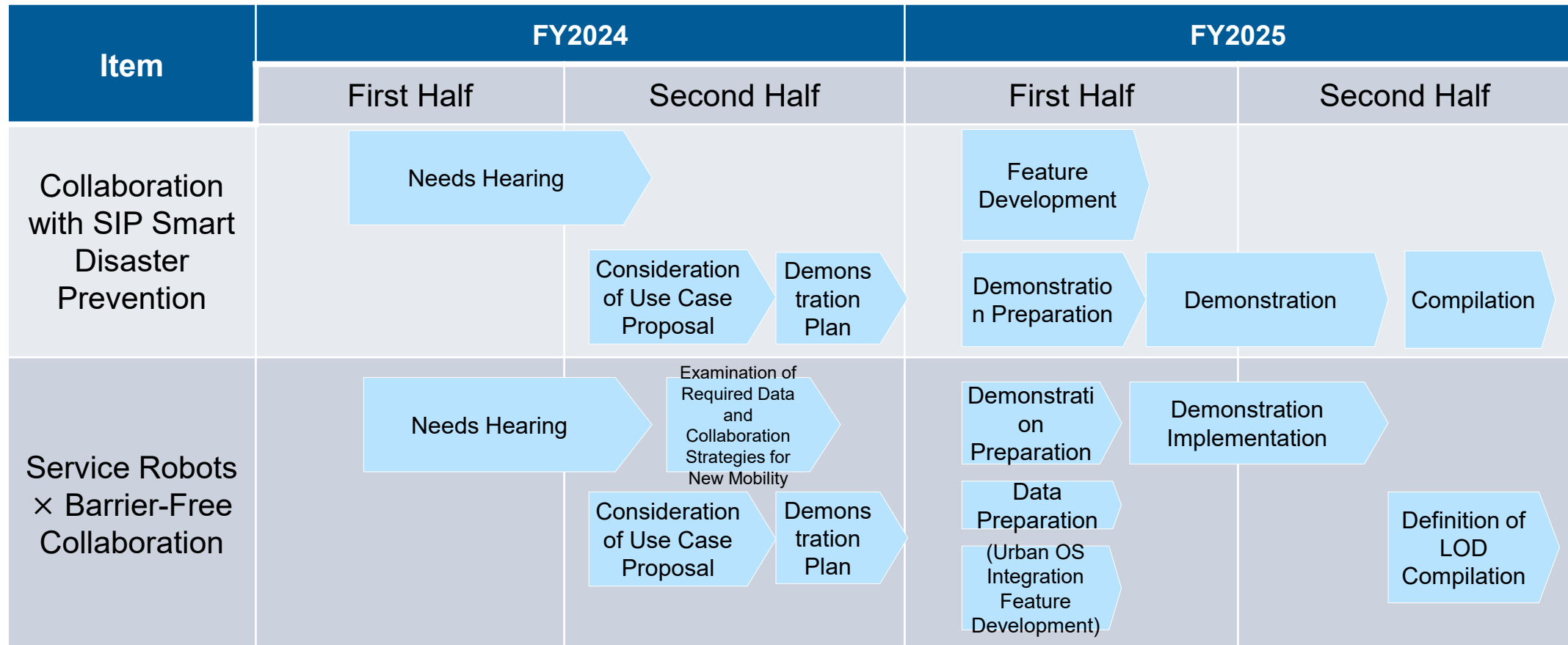


Use Cases / Demonstration Plan



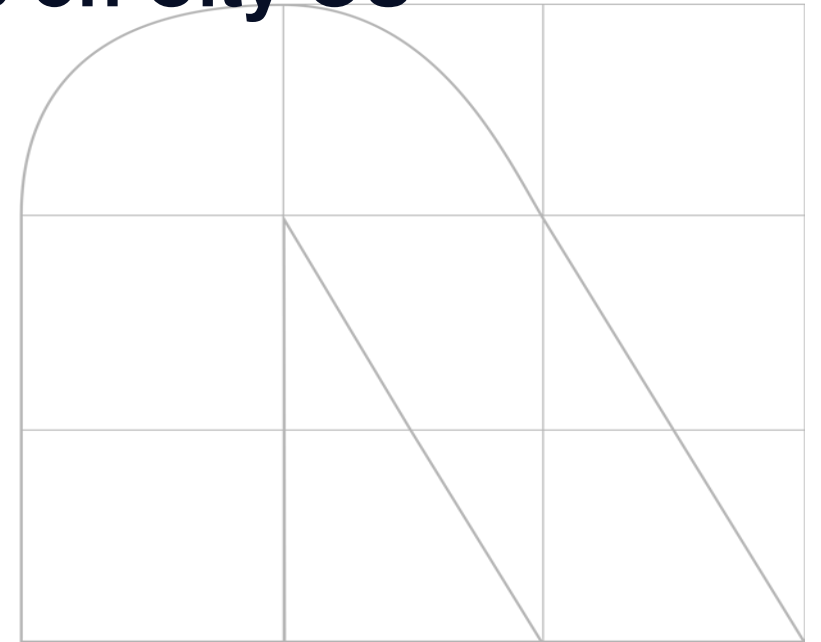
(2) Disaster Prevention / Barrier-Free Future Approach

- Regarding the collaboration with SIP Phase 3 Smart Disaster Prevention, we conducted demonstrations based on the use cases and demonstration plans set for this fiscal year. We verified the potential utilization of various mobility data in the disaster prevention field, both in emergency and normal times.
- Regarding the collaboration with new mobility, we plan to conduct actual data acquisition and verification, considering the collaboration with the demonstration in Sakai City, Osaka Prefecture, which is the demonstration site for the service development linked to Urban OS in research and development item 11.



2.3 R&D subject 11:

Development of mobility-compatible services on City OS



(1) Summary

Aim of the project

- We create structures and cases in which City OS is actively used, to construct an environment that allows local governments and businesses to create services in which City OS is the kernel.

Plan for FY2024

- With respect to the structural formulation of City OS utilization, we will take on issue sort-out for City OS and data collection necessary to make it used.
- With respect to case creation in which City OS is actively used, we analyze the data we collected, and make introduction and improvement of measures to establish actual examples of data utilization.

Major achievements

①Structural formulation for City OS utilization

Category	Item
Chichibu City, Saitama Prefecture	We attached GPS loggers to rental bicycles provided as secondary transportation in Chichibu City and conducted data collection.
Sakai City, Osaka Prefecture	We made evaluation by collecting data about synergistic effects of setting up mobility hubs in the same area and how they are used and analyzing it through questionnaires, etc.

②Case creation for City OS utilization

Chichibu City, Saitama Prefecture	As a result of a survey using GPS loggers, we made a thorough survey of ranges that are not covered by current mobility and found that about 18% of users ride beyond the recommended travel range for bicycle
Sakai City, Osaka Prefecture	We made mobility hub user trends analysis. We clearly defined the purpose of mobility hubs, such as station hubs, residential zone hubs, and destination hubs, and made a survey on how the respective types of hubs are used. We found that places with a need were stations, destinations (attractions), and those along national highways, and we found a tendency for places far from stations where public transportation is infrequent to be used as well.
Common	For the measures we implemented in Chichibu City and Sakai City, we have standardize them and systematize their flows to make them applicable and usable in similar cases.

③EV service development and business creation using EM systems

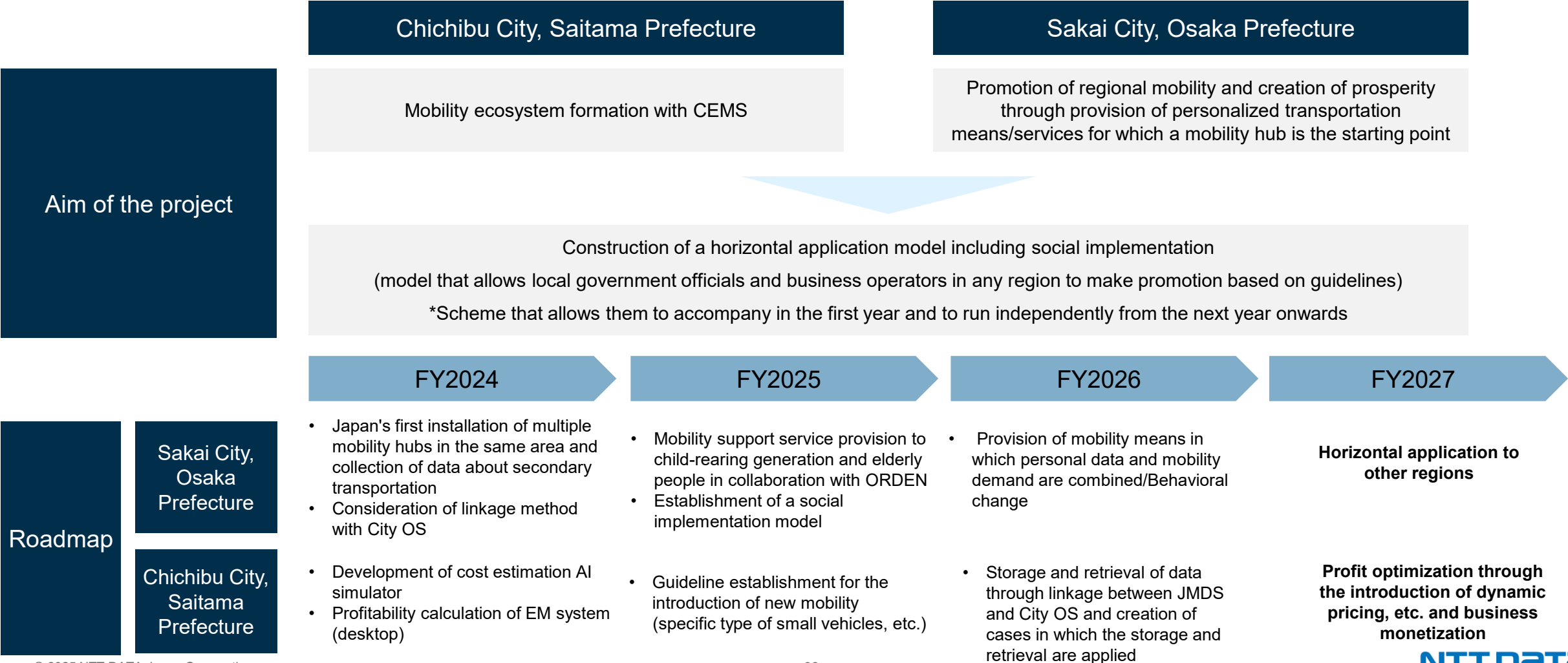
Chichibu City, Saitama Prefecture	For energy management (hereinafter referred to as EM) measures using EVs, we developed an AI simulator and made cost estimates.
	We conducted a desk-top simulation of an EM system and confirmed that the local energy production and consumption rate rises by approximately 6% and monthly electricity bills lower by approximately 5%.

Plans/Outlooks

- [Chichibu] In collaboration with JMDS, we will make data collected through demonstration competent to be applicable for manual/system linkage with City OS.
- [Sakai] We will put data collected through demonstration into Osaka Regional Data Exchange Network (hereinafter referred to as ORDEN) and increase the number of data items in ORDEN.

(2) Aims of urban OS linkage and roadmap for it

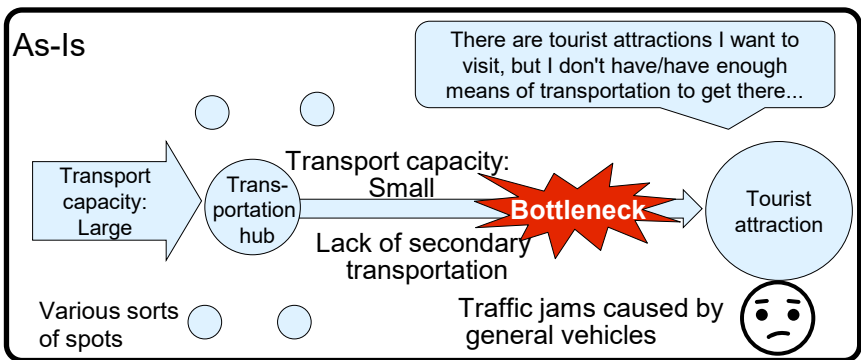
- With respect to this R&D subject, we set Chichibu City, Saitama Prefecture, and Sakai City, Osaka Prefecture, as fields, and in the former, we aim at mobility ecosystem formation with Community Energy Management System (CEMS), and in the latter, we aim at a horizontal application model that includes social implementation through regional mobility promotion and prosperity creation with mobility hubs serving as starting points.
- In FY2024, we conducted desktop calculations of the profitability in EM, installation of multiple mobility hubs in the same area, and other tasks.



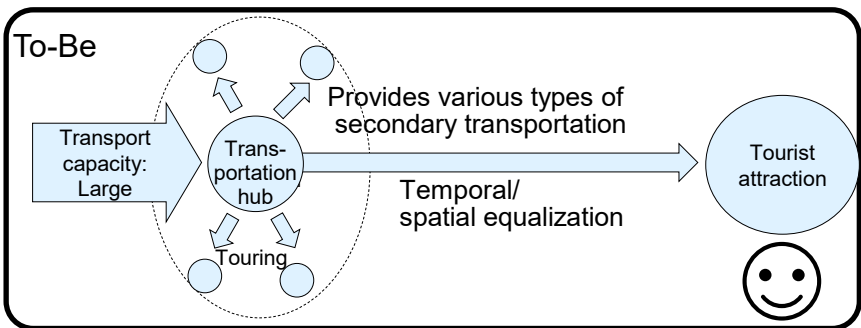
(3) Achievements in FY2024 – Chichibu City, Saitama Prefecture

- From the outcomes of the issue sort-out of City OS, we found that we need substantial data for data utilization. In order to input data into City OS and make it substantial in the future, we will collect mobility data provided as secondary transportation.
- For the solution of the overtourism problem in tourist sites, based on a hypothesis that the way secondary transportation is used is not optimal, we collected mobility data of LUUP rented out at station plazas and attached GPS loggers to rental bicycles to **make an analysis on how visitors travel and where they visit**.
- As a result, we found that **a certain number of users of rental bicycles and LUUP make a visit outside the expected travel range**.

Issues and solutions of tourist sites(hypothesis)

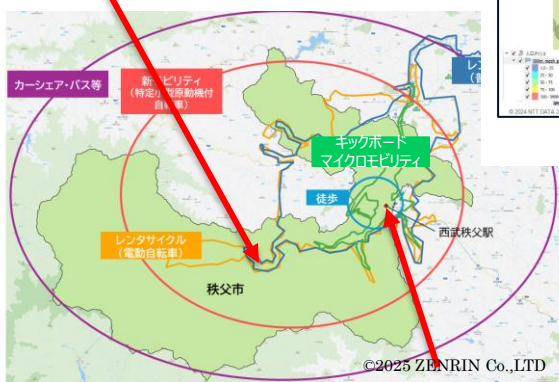


Use of JMDS + City OS



Achievements in FY2024

Tourist attraction: Mitsumine Shrine

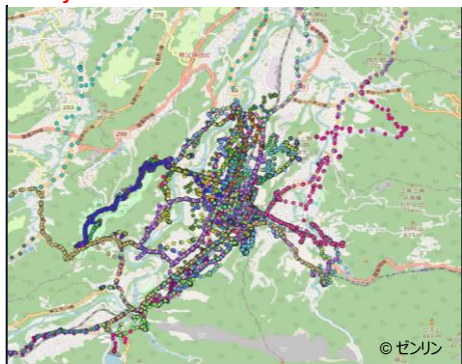


Transportation hub
Seibu-Chichibu Station

Grasp mobility issues using data



Analysis of rental bicycle trajectories and trends of tourists



Issue sort-out of City OS

都市OSを活用するための課題			
政治的課題		経済的課題	
・データの活用が難しい ・データの活用が難しい	・データの活用が難しい ・データの活用が難しい	・データの活用が難しい ・データの活用が難しい	・データの活用が難しい ・データの活用が難しい
社会的課題		環境的課題	
・データの活用が難しい ・データの活用が難しい	・データの活用が難しい ・データの活用が難しい	・データの活用が難しい ・データの活用が難しい	・データの活用が難しい ・データの活用が難しい

(3) Achievements in FY2024 – Chichibu City, Saitama Prefecture

- From the analysis of the data about the mobility introduced, we found that approximately 18% of users ride beyond the range where normal bicycles or electric-assisted bicycles are considered appropriate (the range where 50% of users are covered) and **mobility that caters to them is not provided**.
- **Specified small motorized bicycles with a seat are considered to be the most suitable mobility to cover these users**, and we are planning the introduction in the next fiscal year..
- Concerning visualization/analysis/measure proposal for such data, we devised techniques. In the future, we will make an increase in number, derive visualization/analysis/proposal techniques, and compile them in a report. Among the techniques, we will **systemize those for which effects are observed and turn them into a dashboard for visualization analysis proposals through linkage with the digital sandbox**.

Overtourism countermeasure “Pioneer Model Areas” adoption list

○ 過度な混雑やマナー違反等の課題に取り組む「先駆モデル地域」として、第1次：20地域（本年3月公表）、**第2次：6地域**（7月19日公表）の計**26地域**を採択。

○ 地域の関係者による協議の場において**具体的な対策に係る計画を策定し、取組を実施**。

【採択地域及び主な取組構想】※順不同、赤枠・字は第2次公募で採択された地域

公共交通等の混雑対策

- ① 京都：「観光特急バス」の新設、地下鉄等への誘導、手ぶら観光の拡充
- ② ニセコエリア：タクシー不足対策「ニセコモデル」の拡大
- ③ 蔵王：ロープウェイの乗車価格導入、混雑状況可視化
- ④ 川越：パーク＆ライドの強化、駐車場等の混雑情報発信
- ⑤ 箱根：「箱根観光デジタルマップ」を活用した分散・平準化
- ⑥ 出雲大社：駐車場料金変動制の導入
- ⑦ 小豆島：島内公共交通の充実、混雑情報のリアルタイム発信
- ⑧ 銀山温泉：パーク＆ライド実施及びシャトルバス運行による渋滞抑制

マナー違反対策

- ⑨ 美瑛：AIカメラを活用した、農地など私有地への無断立入行為の抑制
- ⑩ 鎌倉・藤沢：カメラ設置による写真撮影時のマナー違反行為の抑制
- ⑪ 白川郷：発地、目的地の分析に基づき「旅マエ」を含むマナー啓発の強化
- ⑫ 奈良公園・山の辺の道：景観保護活動への観光客の参画
- ⑬ 高山：伝統的景観を守るためのマナー啓発、災害時の円滑な情報伝達

自然環境保護

- ⑭ 西表島：エコツアー推進法に基づく立入制限の導入
- ⑮ 奥入瀬：車両乗入規制の実施、利用者負担導入の検討
- ⑯ 富士山吉田口：登山者数の条件設定及び通行料の導入
- ⑰ 富士山富士宮口、御殿場口、須走口：登山計画等を事前登録する入山管理システムの導入
- ⑱ 阿蘇：EV・自転車活用による環境負荷の低減

需要の分散・周遊促進等

- ⑲ 宮島・宮島口：宮島側ターミナルの改良、混雑状況可視化
- ⑳ 浅草：浅草寺周辺の混雑対策、道路空間の活用
- ㉑ 佐渡：島内二次交通の強化、周遊の促進
- ㉒ 高野山：データを活用した参拝観光客の分散・平準化
- ㉓ 仁淀川流域：新たな観光スポットの受入環境整備、周遊コンテンツの充実
- ㉔ 秩父：AIカメラを活用した混雑予測情報のリアルタイム発信
- ㉕ 大月：富士山周辺エリアにおける新たな周遊コンテンツの造成
- ㉖ 那覇：首里城周辺における駐車場混雑情報発信や公共交通の利用促進

We will target issues multiple local governments commonly have across the nation and extract those issues.

Candidate specified small motorized bicycles (models with saddle and long cruising range)



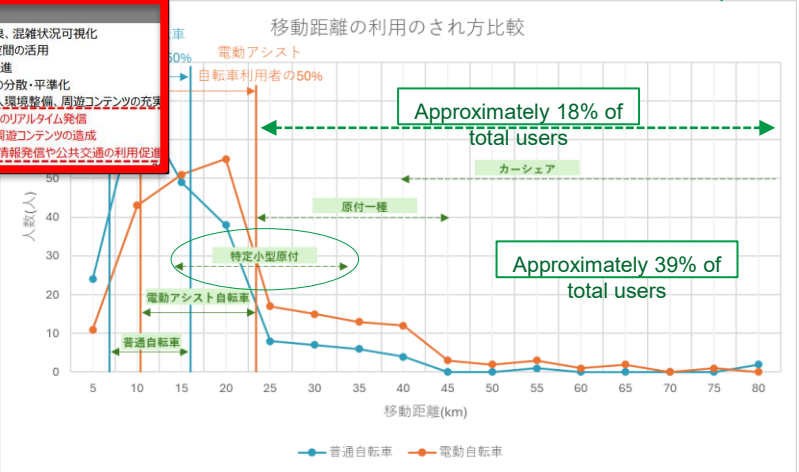
Reference: Cited from the official website of YADEA

Reference: Cited from the official website of ENNE

[Points of differentiation]

- **Fully electric**, so they are less tiring than regular bicycles and electric-assisted bicycles
- Compared to LUUP, **the wheels are larger and riders can sit down** to ride, so it is less tiring to ride long distances
- Compared to Class-1 motorized bicycles, **riders just need to put a helmet on with obligation to make efforts, and need no license**

Reference: Ministry of Land, Infrastructure, Transport and Tourism Over-Tourism Countermeasures "Pioneer Model Regions" Adoption List, [siryou2.pdf](#)



*The travel range of mobility other than general bicycles and electric-assisted bicycles is estimated

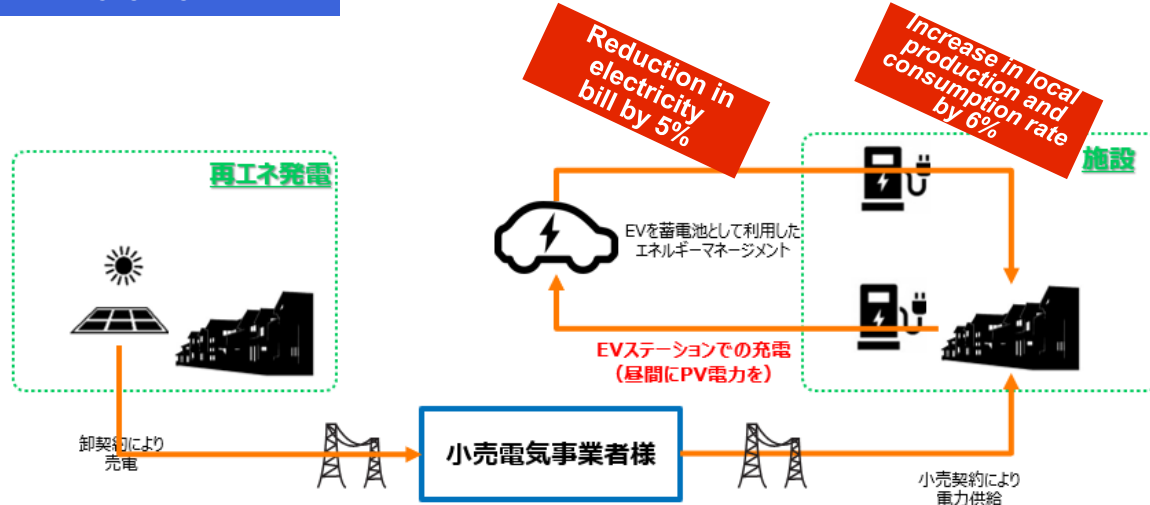
Select measures that address issues based on data, and introduce the measures..

Introduce measures based on data and verify whether the expected effects are achieved. For the measures that have been found to be effective, we will implement systemization as a dashboard so that we can make horizontal application, and enable other local governments to introduce effective measures.

(3) Achievements in FY2024 – Chichibu City, Saitama Prefecture

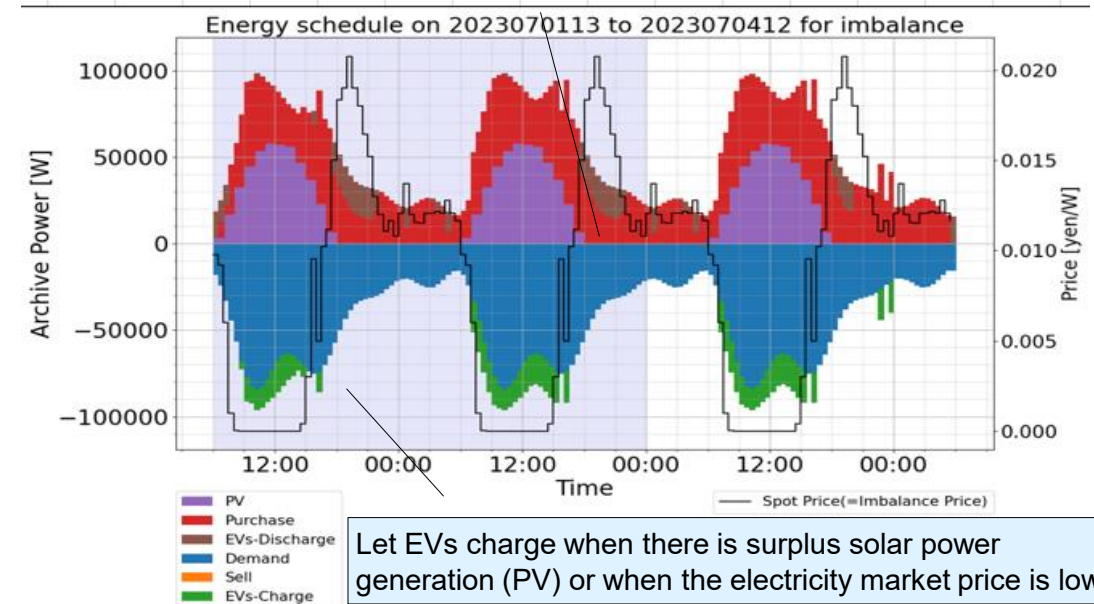
- The need for renewable energy is increasing due to the effects of global warming, but the stable supply of renewable energy is a challenge. As a solution, we have built an energy management system in which EVs, which are expected to become more widespread in the future, are used as storage batteries.
- With this system, we realized the stable supply of renewable energy as well as an increase in the local production and consumption rate of renewable energy and electricity cost reduction.
- This year, we conducted a desktop simulation to confirm the practicality of this system, and confirmed that the rate of local production and consumption of energy could be improved by about 6%, and monthly electricity bills could be reduced by 80,000 yen from 1,500,000 yen (about 5%). In the future, we will consider strategies based on the popularity of EV-related equipment toward field verification.

Simulation model overview



AI charging/discharging algorithm overview

Make electricity discharged from EVs when the electricity market price is high, reducing electricity usage during such hours



Let EVs charge when there is surplus solar power generation (PV) or when the electricity market price is low

By introducing this system, it is possible to improve the local production and consumption rate of renewable energy and reduce the cost

(3) Achievements in FY2024 – Sakai City, Osaka Prefecture

- With the aim of transportation convenience improvement for the elderly and attractive lifestyle creation for young people, **we did the first installation of multiple mobility hubs in the same area in Japan in November 2024 by making use of mobility-related data.**
- For the installation of the mobility hubs, **we systemized and maintained analytical methods required for the installation.** Based on it, we eventually achieved the implementation through data utilization.
- We will verify the effectiveness of the mobility hubs as a means of eliminating transportation blank areas, and aim to **establish a process from quick selection of installation locations to installation in a form in which data to be put in City OS is integrated** aiming to further improve the location at which a hub is to be installed in the future.

Guidelines for mobility hub installation

November 2024~Mobility hubs in demonstration phase

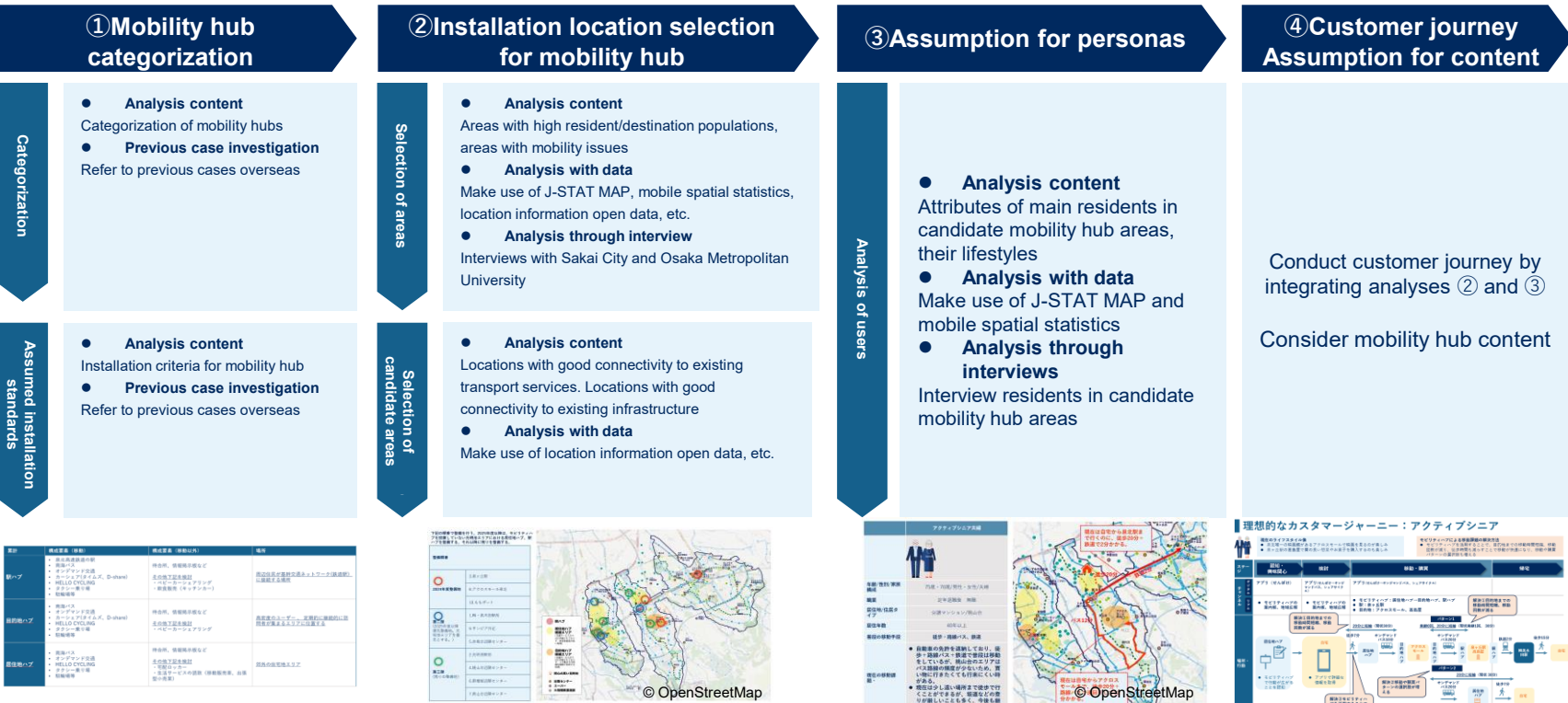


Figure 1: Mobility hub installation process flowchart. The process starts with 'Mobility hub categorization' (①), which involves 'Analysis content' (Categorization of mobility hubs, Previous case investigation, Refer to previous cases overseas) and 'Assumed installation standards' (Analysis content: Installation criteria for mobility hub, Previous case investigation, Refer to previous cases overseas). This leads to 'Installation location selection for mobility hub' (②), which involves 'Selection of areas' (Analysis content: Areas with high resident/destination populations, areas with mobility issues; Analysis with data: Make use of J-STAT MAP, mobile spatial statistics, location information open data, etc.; Analysis through interview: Interviews with Sakai City and Osaka Metropolitan University) and 'Selection of candidate areas' (Analysis content: Locations with good connectivity to existing transport services. Locations with good connectivity to existing infrastructure; Analysis with data: Make use of location information open data, etc.). This leads to 'Assumption for personas' (③), which involves 'Analysis of users' (Analysis content: Attributes of main residents in candidate mobility hub areas, their lifestyles; Analysis with data: Make use of J-STAT MAP and mobile spatial statistics; Analysis through interviews: Interview residents in candidate mobility hub areas). This leads to 'Customer journey Assumption for content' (④), which involves 'Conduct customer journey by integrating analyses ② and ③' and 'Consider mobility hub content'. The final output is '理想的なカスタマージャーニー: アクティブシニア' (Ideal Customer Journey: Active Seniors).



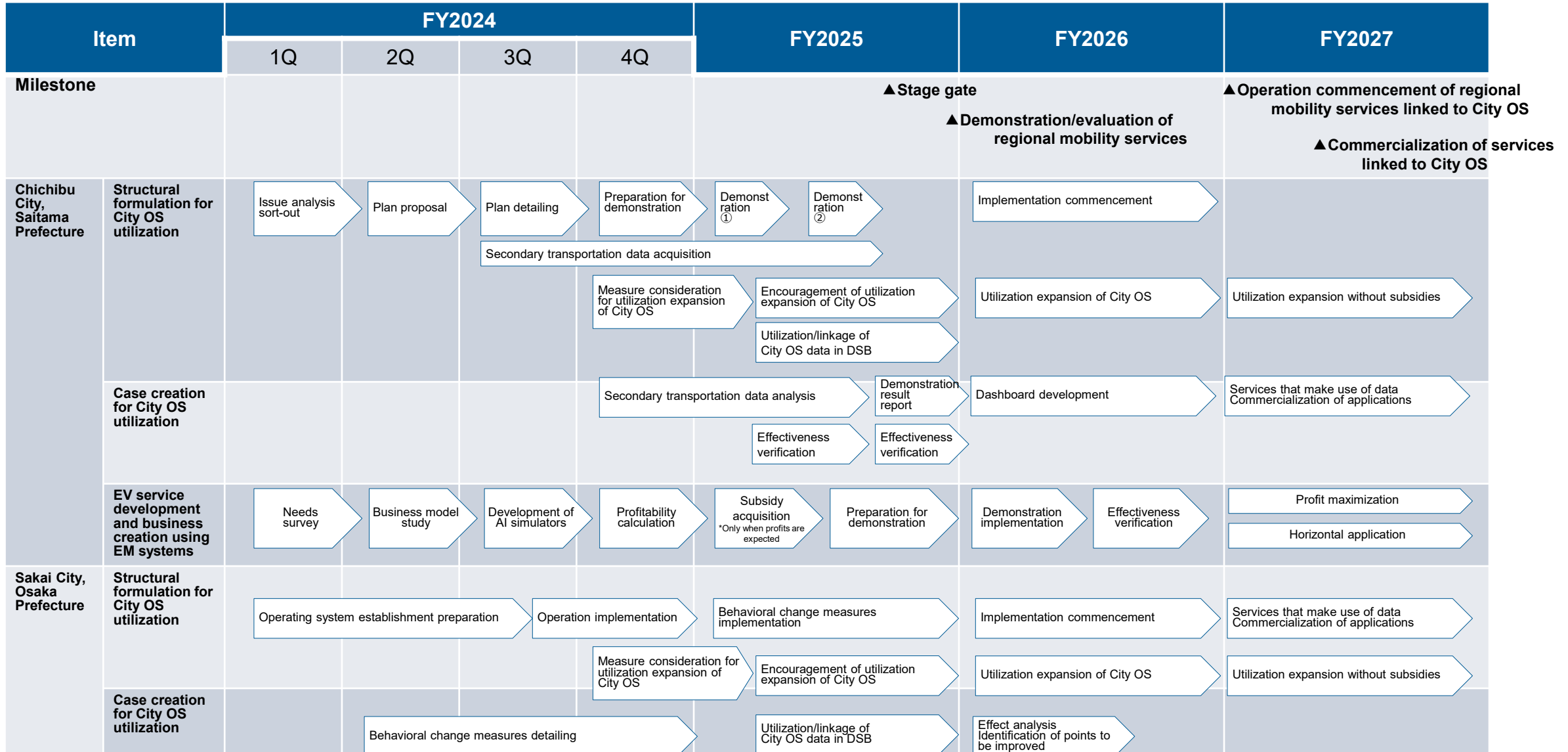
Mobility hubs opened at three locations in Senboku New Town

[Reference] User feedback (typical) :

- The slope in front of my house is too steep to walk to the supermarket by myself, but now I can get to it by myself with a senior cart.
- After the establishment of the mobility hub, I can go from the nearest station, Komyoike Station, to Toga-Mikita Station, rent mobility at Momo Port, and go to Across Mall and shops close to it, so I can go to a lot more places.

(4) Roadmap for City OS linkage

- We carry out demonstration planning and on-site coordination with the aim of demonstrating/evaluating regional mobility service introduction in FY2025.



2.3 R&D subject 16:

Construction of Shared Service for Mobility (SSM), which serves as a platform on which mobility data share/common ownership between startups and other businesses is enabled

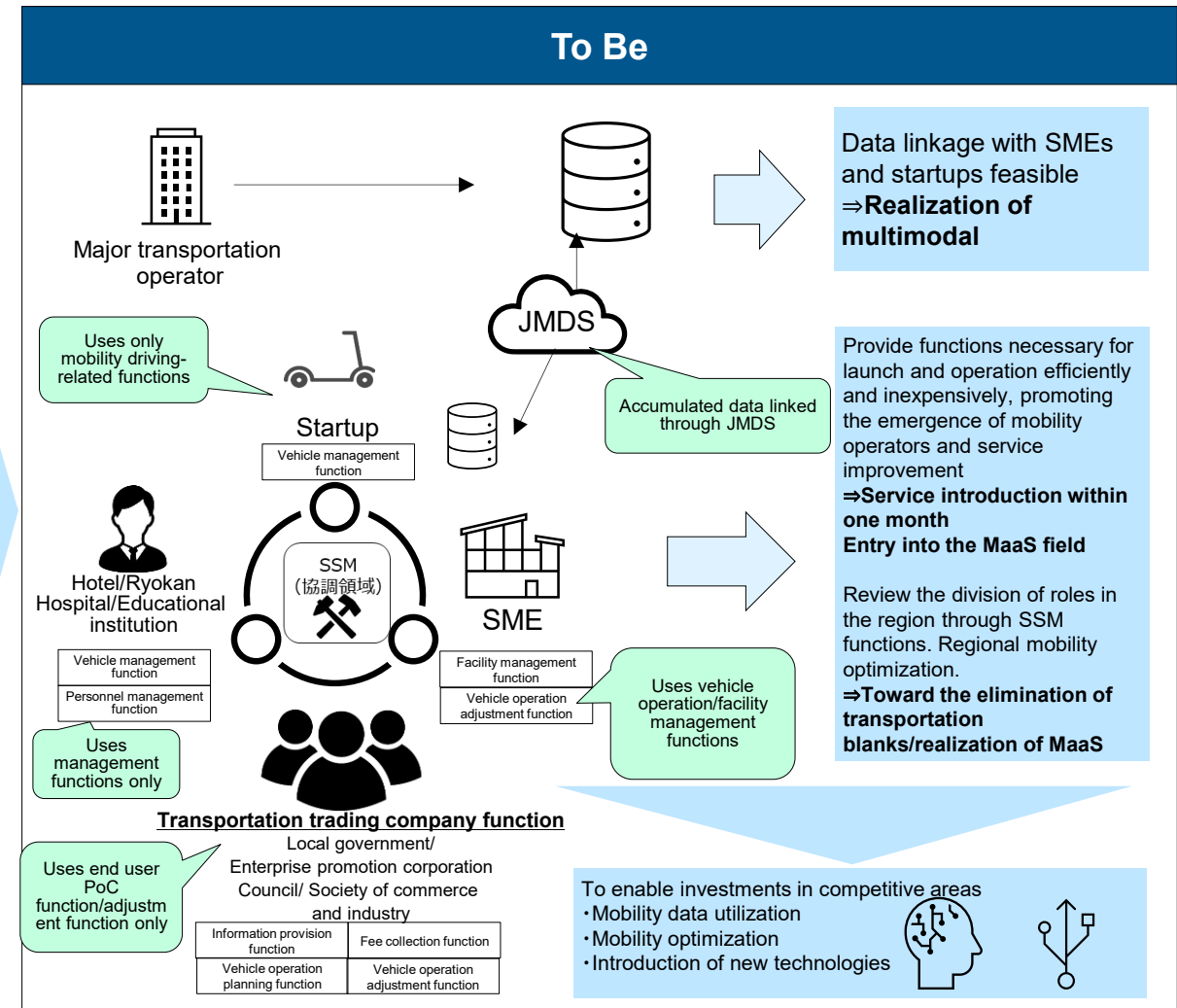
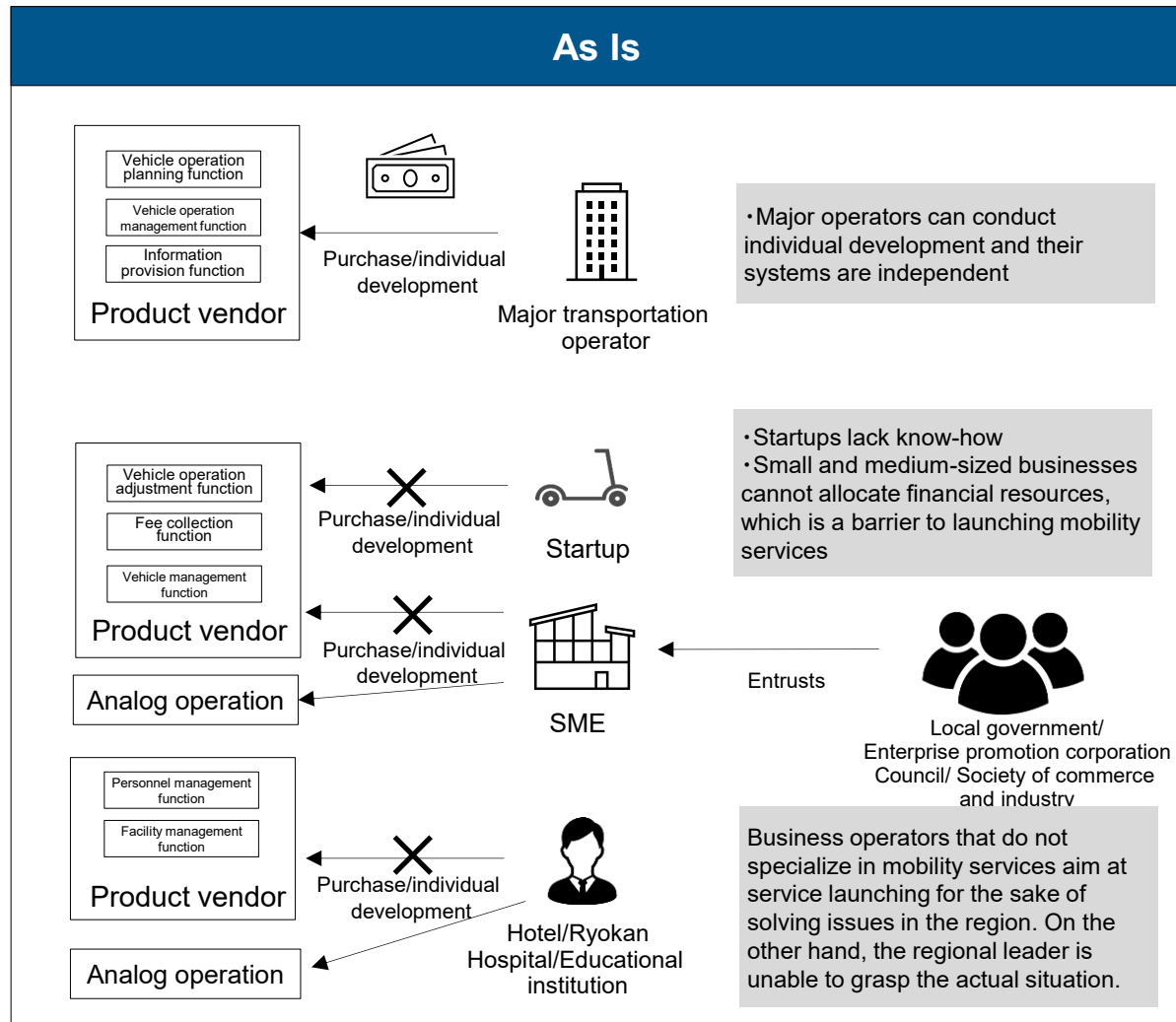


(1) Summary

Aim of the project	<ul style="list-style-type: none">■ Expand functions to support providers (mobility operators) that are currently lacking, aiming at MaaS promotion■ Make mobility service launch/operation work collaborative fields, aiming for a system in which economic efficiency and stable operation balance each other out
Plan for FY2024	<ul style="list-style-type: none">■ Define the concept of SSM and define development function groups.■ Develop functions to be newly developed and conduct demonstrations in the regions to extract the appropriateness of the functions and points to be improved.
Major achievements	<ul style="list-style-type: none">■ SSM concept definition<ul style="list-style-type: none">• We identified the tasks required for mobility business from launch to operation, interviewed related stakeholders, and conducted a survey of existing products. It was found that consensus building with related business operators is a burden for business operators in providing services, and that there is a need for a streamlining system and data utilization for tasks that require collaboration with related business operators.• We finished writing the requirements definition documents and system design documents that will serve as the basis for development implementation.■ SSM function development<ul style="list-style-type: none">• We set the development priorities and finished the development of the vehicle operation planning function (boarding point planning) and vehicle operation adjustment function (reservation adjustment function).• Through verification at local governments and tourism associations, we extracted the effects of the functions and points to be improved. For the boarding point planning function, while we could expect business streamlining by systematizing the consensus building part that was previously done non-digitally, there was an opinion that it would be good to streamline the application process as well, since paper-based application work is time-consuming. For the reservation adjustment function, there was an opinion that, if transportation services could be provided throughout the region through coordination between business operators, it would be possible to make effective use of local tourism resources. On the other hand, there was an opinion that this function could lead to disadvantages for local taxi operators, and since accommodation facilities that own vehicles are in a competitive relationship, thus it is necessary to operate in a way that it does not cause friction.■ SSM service consideration<ul style="list-style-type: none">• We involved price/existing product owning vendors, extracted issues related to architecture consideration, and formulated actions for the next fiscal year.
Plans/Outlooks	<ul style="list-style-type: none">■ Shaping of service images/business models based on consideration of price/existing product utilization■ Minimum Viable Product (MVP) development/deployment targeting demand-type mobility services

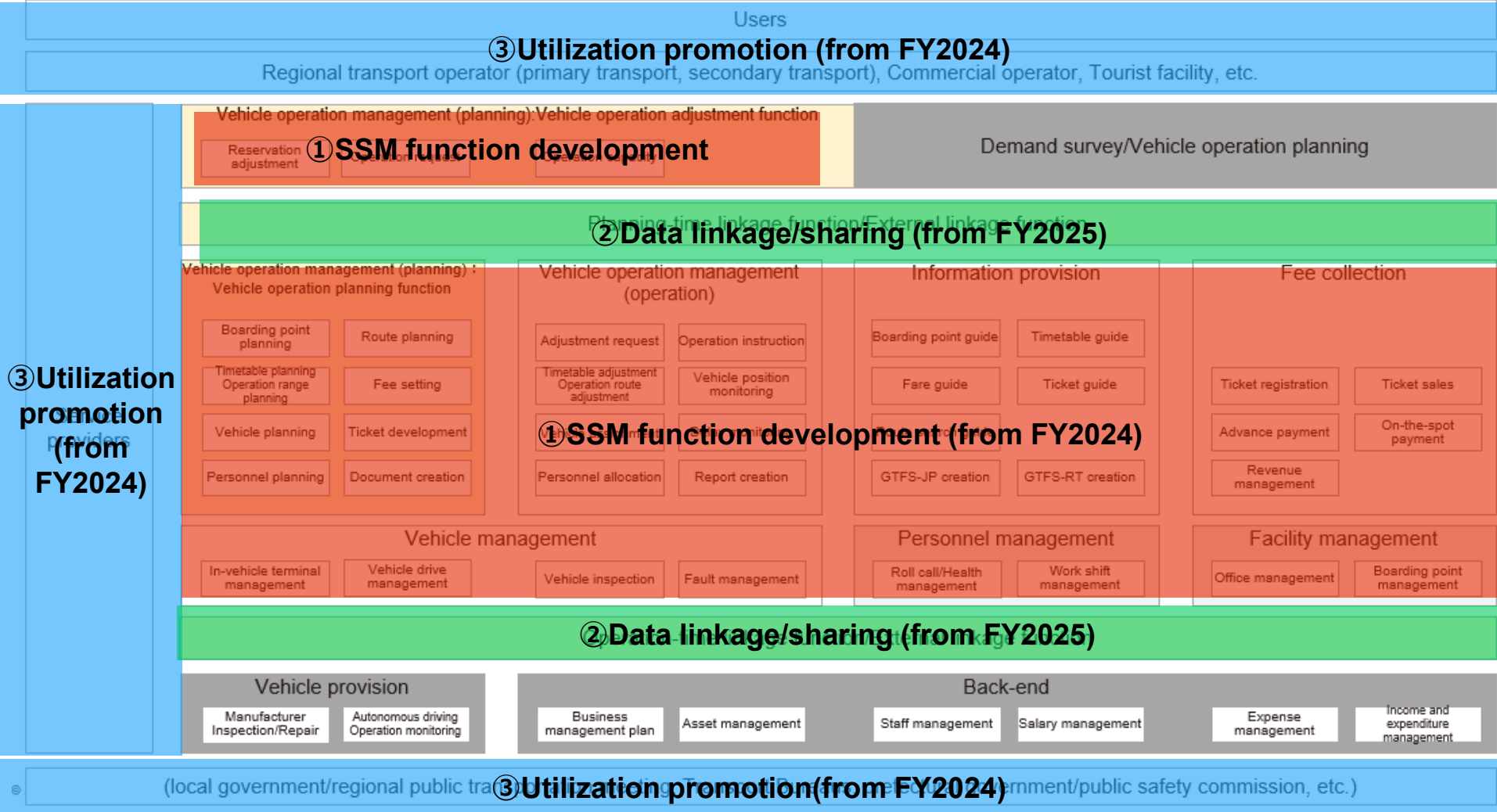
(2) Aim of Shared Service for Mobility

- The cost burden related to service operation is large for rural areas, small and medium-sized businesses, and other types of businesses, **which is the cause of the slow progress of social implementation of mobility services**, so we expand the functions to support the provider side.
- We separate time-consuming and cost-intensive parts as collaborative fields, review the division of roles, and **aim at a system in which economic efficiency and stable operation balance** toward investment in new competitive areas.



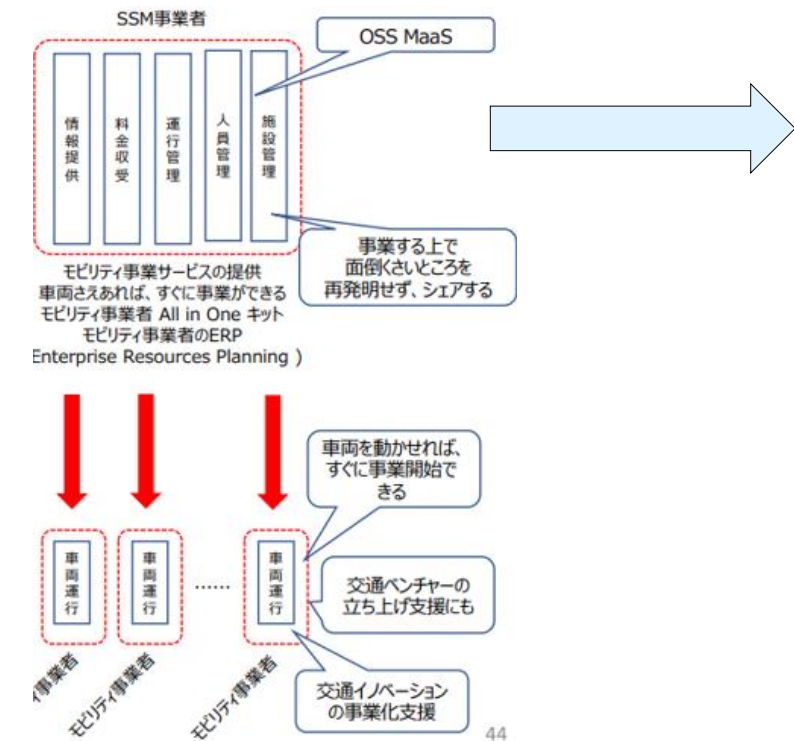
(3) How we will proceed with SSM research and development

- To the concept defined in the requirements definition process last fiscal year, we aim to eliminate transportation blank areas and make MaaS field promotion by implementing the following initiatives:
 - ① SSM function development: Service increase/promotion through service launch acceleration of mobility operators, entry to the MaaS field (from FY2024)
 - ② Data integration/Service sophistication: Realization of multimodal through linkage with JMDS, etc.(from FY2025)
 - ③ Utilization promotion: Putting into collaborative fields through inter-operator function-sharing-type service deployment (from FY2024)

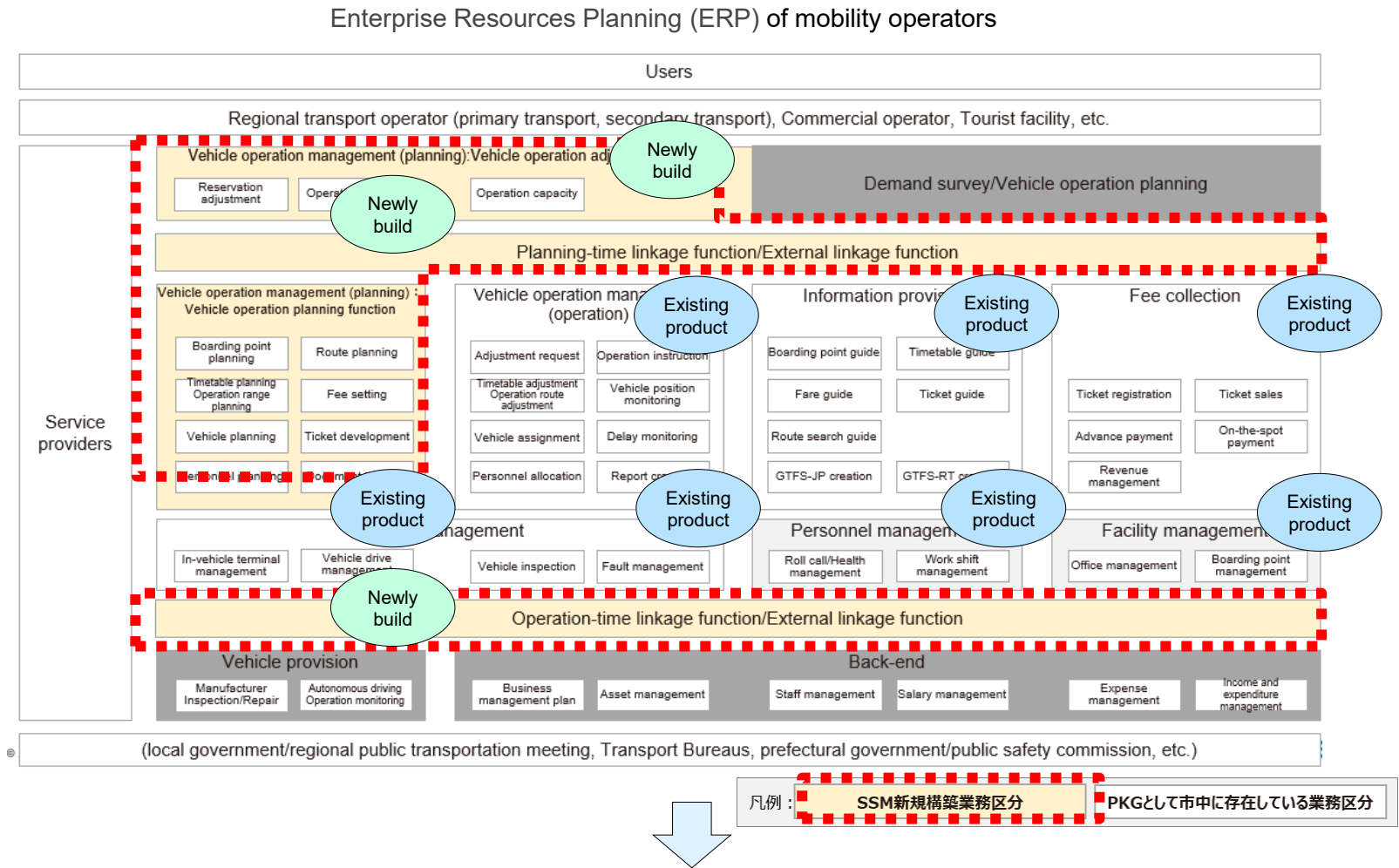


(3) SSM functions development: How we will proceed with development in SSM

- Based on the function definition we made last fiscal year, we **determine the priorities of development functions from needs/concept adaptability/whether existing products are available/unavailable**, and conduct sequential development.
- When we successfully develop functions currently lacking, the functions provided by SSM as a whole will be covered. Among SSM-targeted tasks, those for which existing products are available are deployed on the ground that the functional levels are assured. On the other hand, newly built functions require functional level assurance, **so we are implementing function provision by repeating validity check/improvement for the functions through development and demonstration**.



Extract from “Strategy and research/development plan for the social implementation of the construction for smart mobility platform”

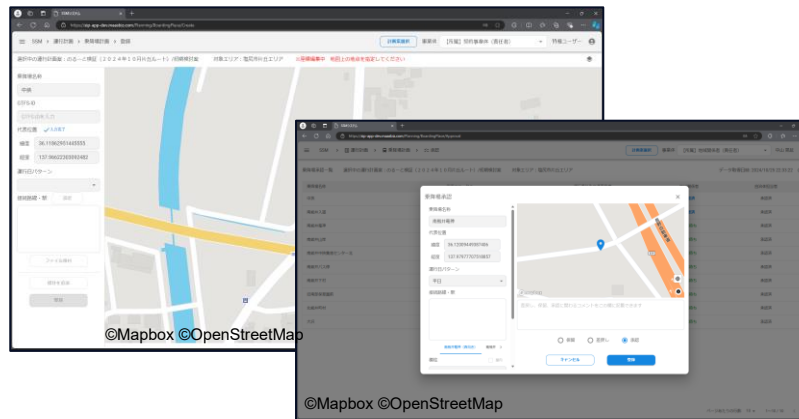


We aim to make a vehicle operation start by allowing mobility operators to select the functions they want to use and giving commercialization support speedily.

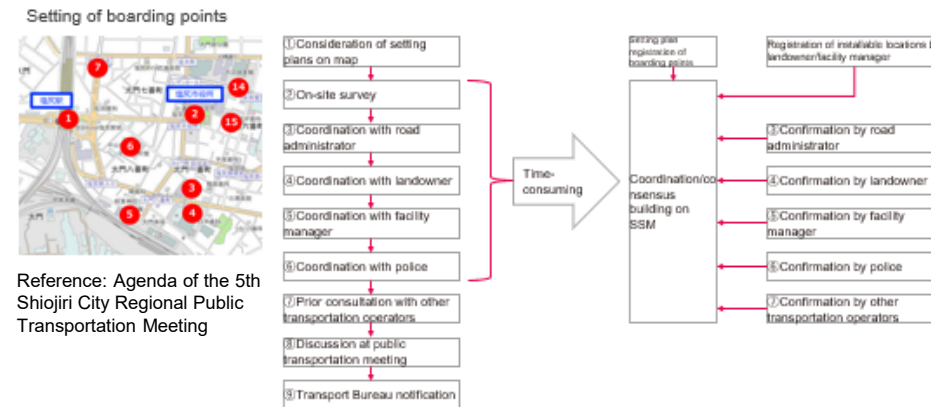
(4) Initiatives in FY2024: SSM function development

- We completed the development of two high-priority functions among MVP, getting to the verification completion for the respective functions in the regions.
 - Among the vehicle operation planning tasks, the boarding point planning function has a high development priority because it is an essential function in transportation services with various types of operation forms and it takes time to reach agreement.
 - Among the vehicle operation adjustment tasks, the reservation adjustment function has a high development priority because it is necessary for regional optimization by supply and demand adjustment between demand-receiving business entities and supply-side business entities and it takes time and effort to adjust the supply side to sudden demand.

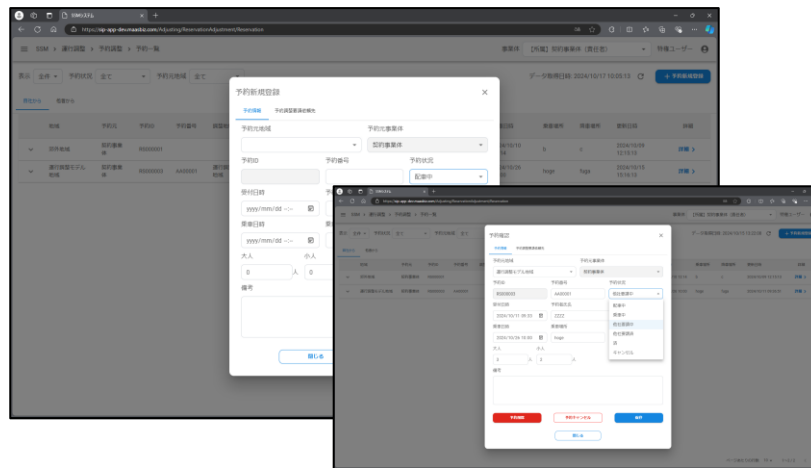
Vehicle operation planning tasks— Boarding point planning function : Shiojiri City, Nagano Prefecture



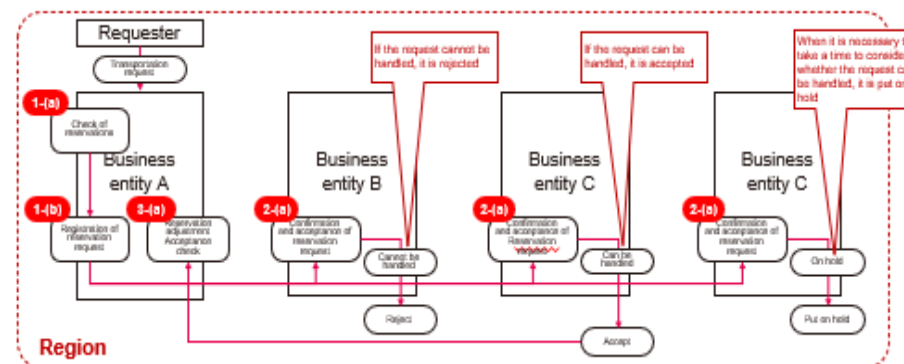
Use case image



Vehicle operation adjustment tasks— Reservation adjustment function: Sumoto City, Hyogo Prefecture



Use case image



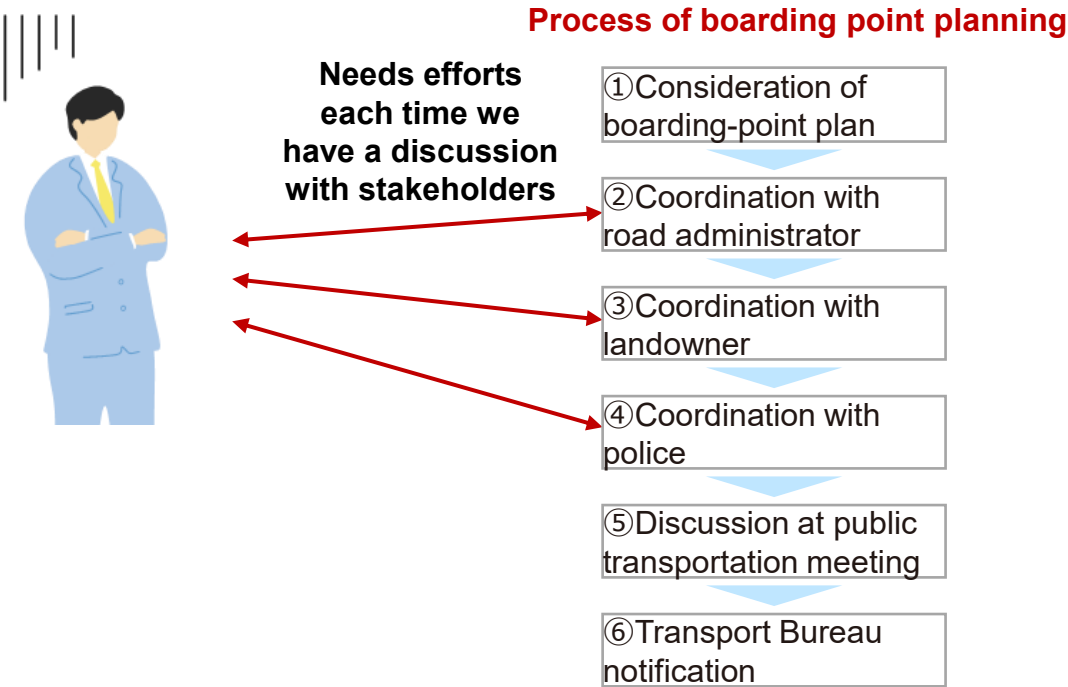
(4) Initiatives in FY2024 : Boarding point planning function

— Details of the demonstration

- Since a great deal of effort is needed at vehicle operation planning tasks, we developed the boarding point planning function. The boarding point planning function aims to make consensus building more efficient by allowing approval of plans on the system.
- We conducted a demonstration in a certain municipality to make validity/issue extraction of the function

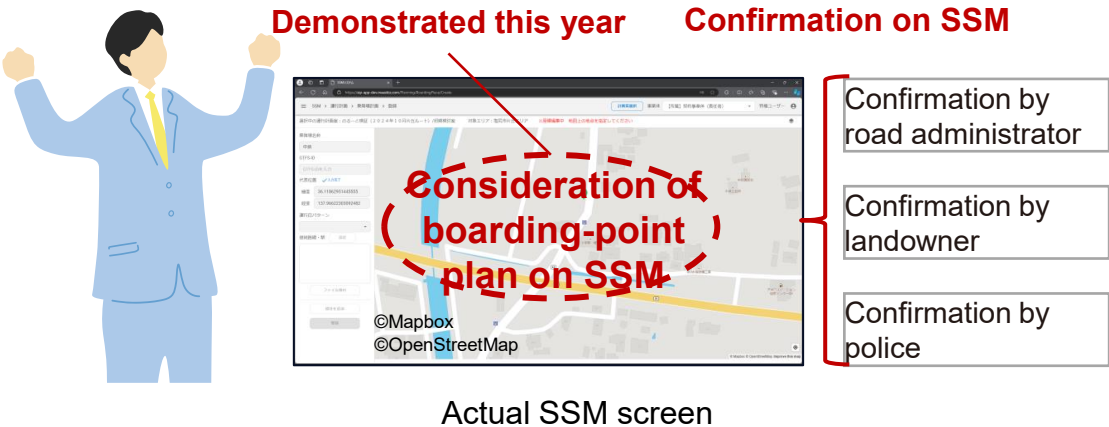
Current situation and issues

When they considered a boarding-point plan, they took time for consensus building with respective stakeholders inside and outside the company (e.g. road administrators, police, landowners, etc.).



Demonstration overview and purpose

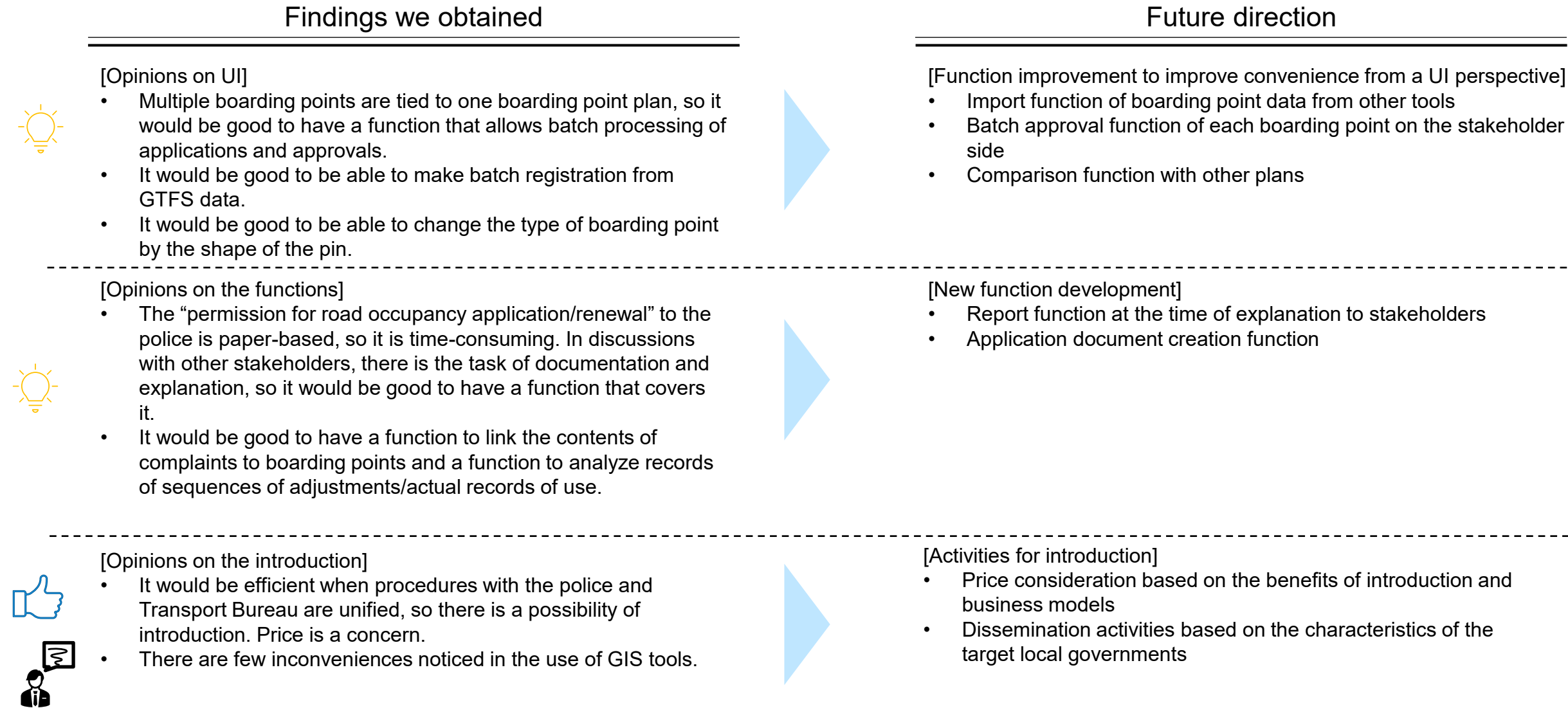
They will consider boarding-point plans on SSM “Boarding-point Planning Function”, aiming to make boarding-point consideration and consensus building with respective stakeholders smooth. Note that this demonstration was conducted by tracing actual business operations.



(4) Initiatives in FY2024 : Boarding point planning function

— Findings from the demonstration

■ We organized the findings from the demonstration and set a direction for the next fiscal year.



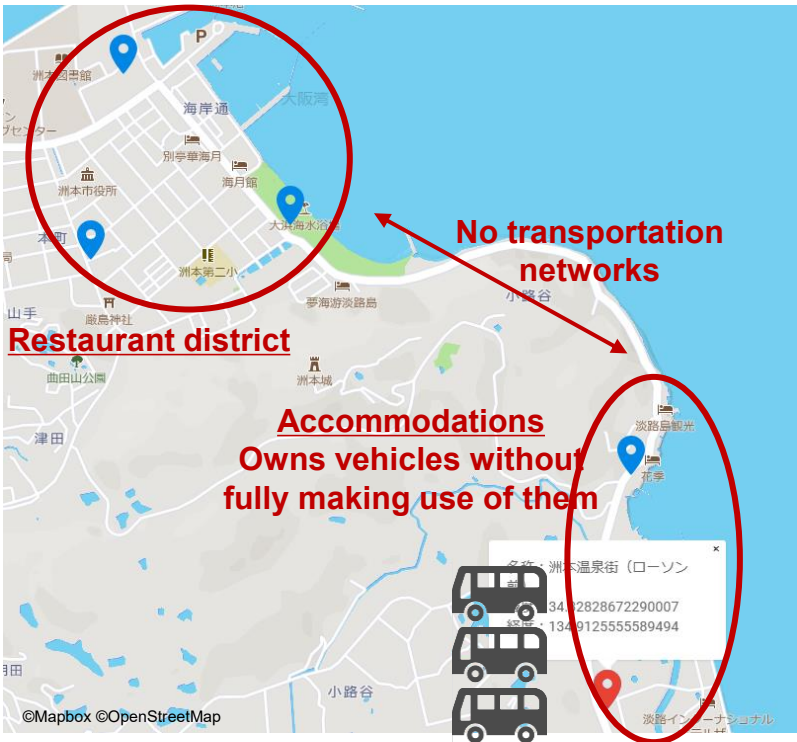
(4) Initiatives in FY2024 : Reservation adjustment function

— Details of the demonstration

- We developed a reservation adjustment function to optimize the supply and demand in the whole of a region and allow inter-operator vehicle operation adjustment. The reservation adjustment function aims to optimize transportation services in the whole of a region through inter-operator supply adjustment to the transportation demand in the region.
- We conducted a demonstration in a certain municipality to make validity/issue extraction of the function.

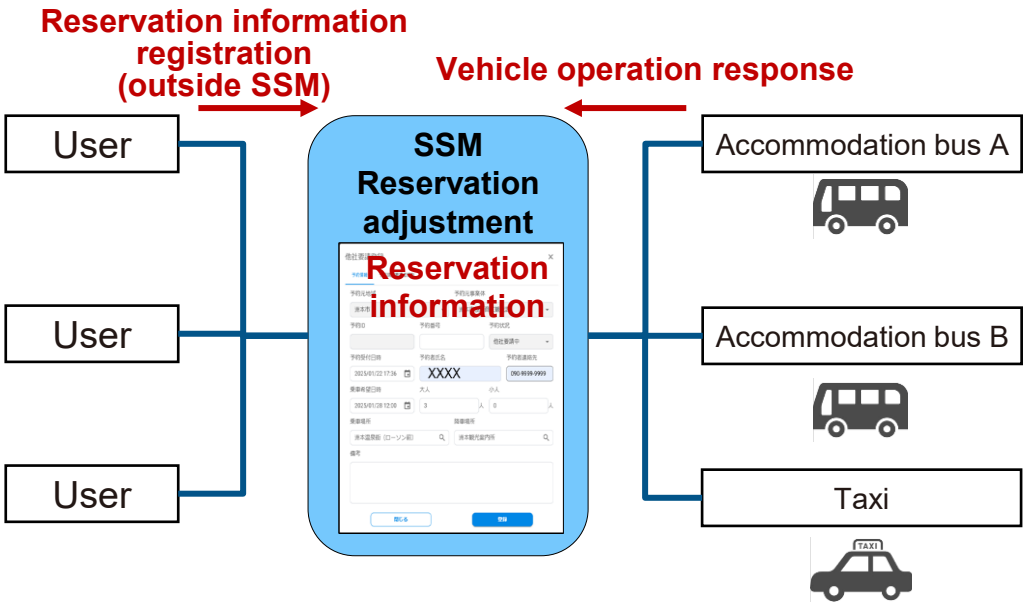
Current situation and issues

In a certain region, they are promoting measures to separate accommodation and meals, but are unable to meet the transportation needs of tourists.



Demonstration overview

To verify the realization/better efficiency of transportation service provision in the whole of the region, they handles tasks related to reservation adjustment by using the reservation adjustment function.



(4) Initiatives in FY2024 :Reservation adjustment function

— Findings from the demonstration

■ We organized the findings from the demonstration and set a direction for the next fiscal year.

Findings we obtained

Future direction



[Opinions on the functions]

- The function available at present is a function posterior to acceptance of reservations from end users, so if reservations can be received directly, it would be very convenient for users.
- It would be good if operation instructions could also be covered.



[New function development]

- Linkage function with MaaS apps for end users
- Development of general-purpose MaaS apps for end users
- Lineup implementation of vehicle operation management products



[Opinions on the introduction]

- While transportation networks connecting accommodation facilities and downtown areas are insufficient, local tourism resources can be effectively utilized when transportation services can be provided with the reservation adjustment function, so there are high demands.
- It can be also applied to tours to tourist spots and school buses that are needed due to the consolidation and closure of elementary schools.
- This function could lead to disadvantages for local taxi operators, and since accommodation facilities that own vehicles compete with each other, it is important to give consideration to causing no friction.



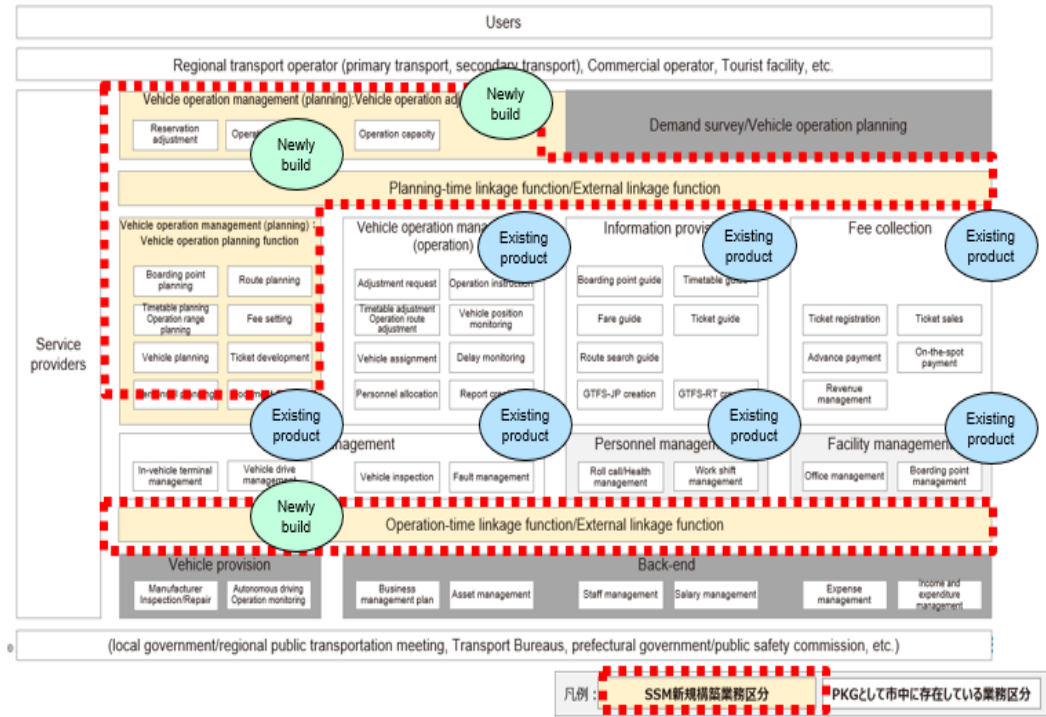
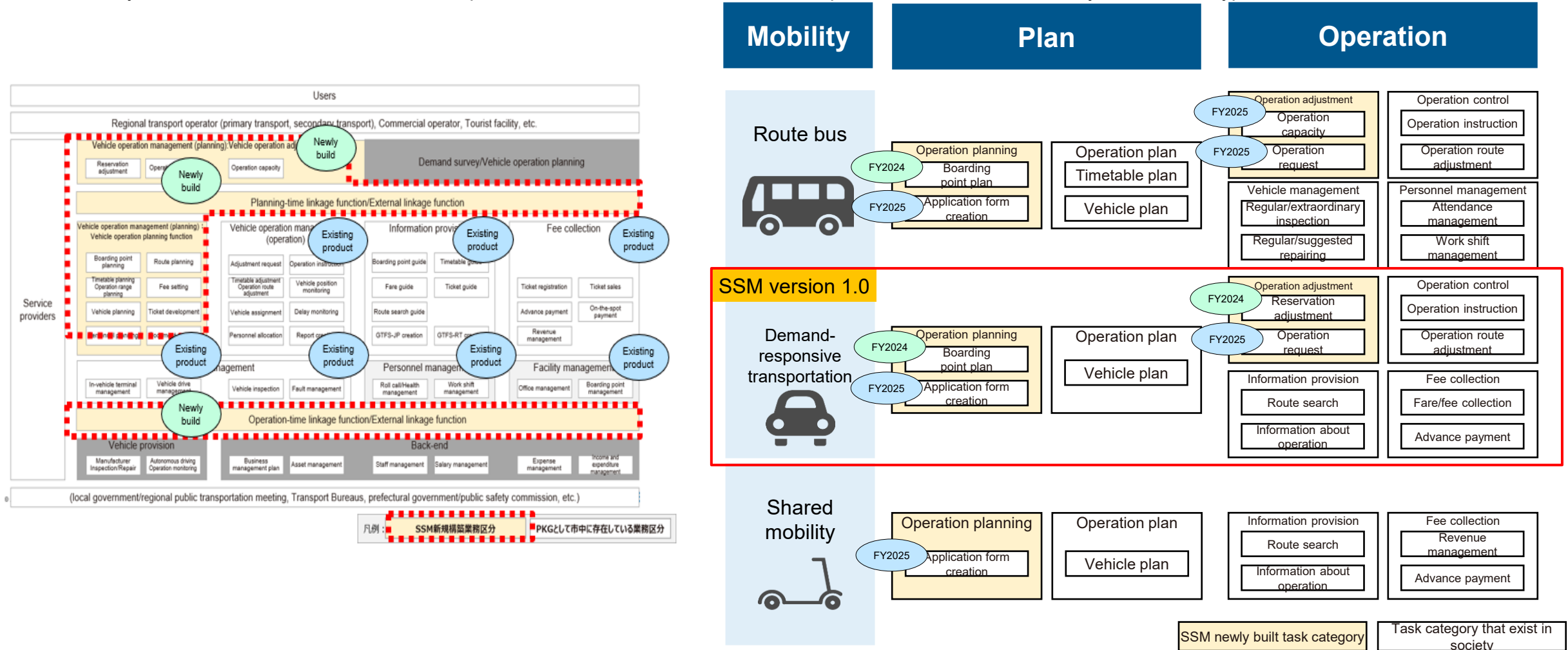
[Activities for introduction]

- Consideration on use cases in line with transportation needs (tourism, education, medical care, etc.)
- Adjustment to transportation trading companies (local governments, etc.) based on the coordination between operators *The relationship between the target operators considered



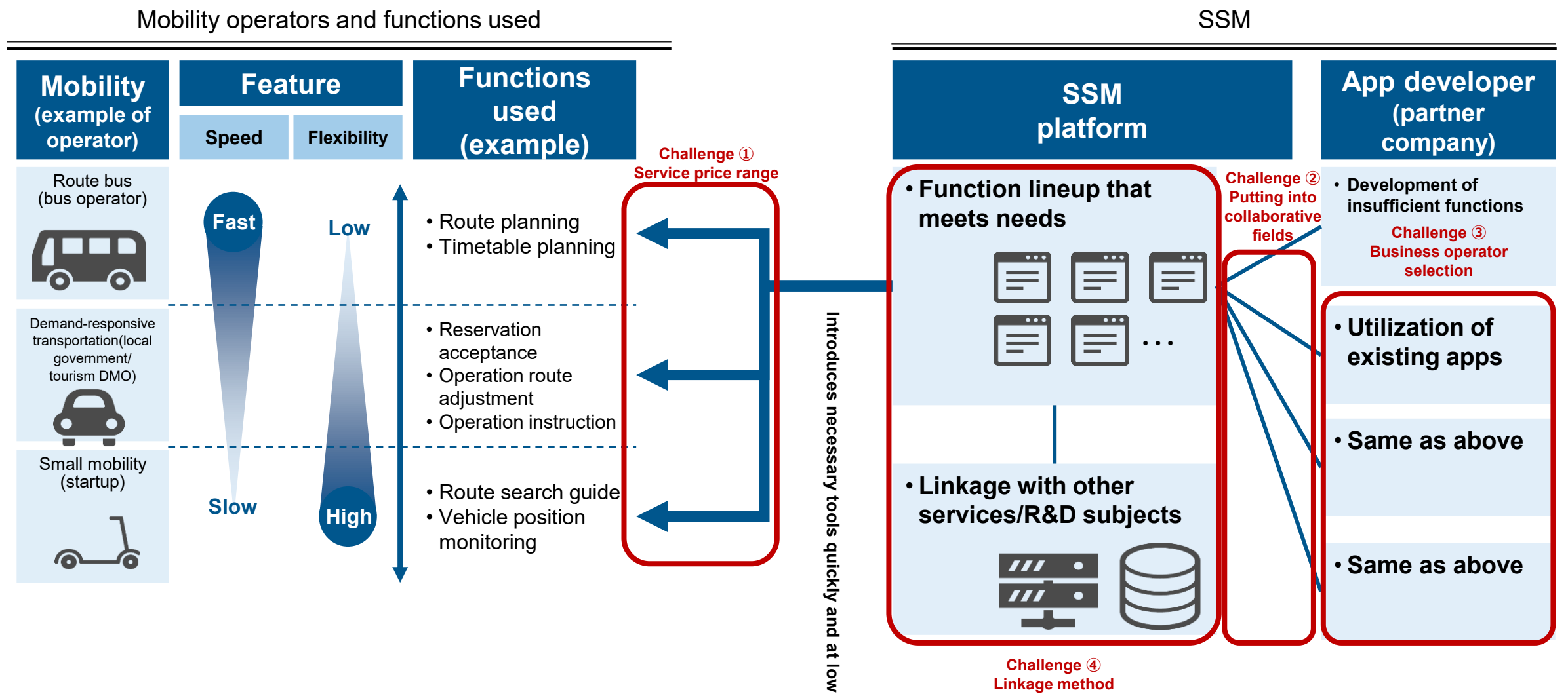
(5) Implementation plan for the next fiscal year : MVP development

- At the stage gate next fiscal year, we have determined to make a deployment as the 1.0 version of the SSM package. The illustration on the left shows the functions required for mobility services, regardless of the service format, in a general-purpose manner. Since it is not possible for us to develop all in a short period of time, **we allow sequential new function deployment and existing product appropriation, and set a course for PKG deployment.**
- In the next fiscal year, taking into account the decline of public transportation systems, issues in transportation blank areas, and ride sharing trends, **we will conduct MVP development, targeting demand-type mobility services that can be launched flexibly and on a small scale.** After that, based on the verification results of the next fiscal year and social conditions, we will respond to different service formats and expand the functions necessary for demand-type services in order.



(5) Initiatives for the next fiscal year: Service consideration toward utilization promotion

- We will take initiatives toward service provision such as price settings of functions, how to use existing products, and involvement of vendors who own existing products.

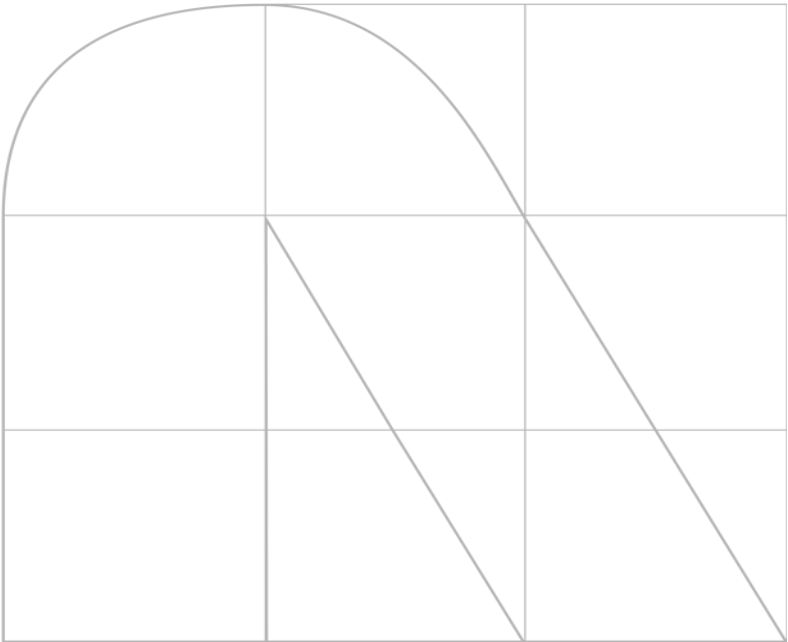


(6) Roadmap for SSM introduction

■ We aim to deploy SSM version 1.0 in FY2025 through all process from the launch of mobility services to operational verification.

Item	FY2024				FY2025	FY2026	FY2027
	1Q	2Q	3Q	4Q			
Milestone					▲ Stage gate ▲SSM initial system (version 1.0) completion		SSM system completion ▲ Acquisition of SSM users ▲ (3 or more companies)
①SSM development	Vehicle operation planning function •Boarding point planning function		Demonstration	Vehicle operation planning function •Reporting function •Application document creation function	Version 1.0 demonstration	Interviews with MaaS and transportation operators/Functional addition that meets needs	
	Vehicle operation adjustment function •Reservation adjustment function		Demonstration	External linkage function			
				Front page construction			
②SSM service consideration			Overall issue sort-out	Price consideration	Issue response policy brushup for SSM service completed version construction		
				Cooperative business operator selection			
③SSM Service dissemination			SSM service consideration	SSM service needs interview			
				Dissemination activities to SmaMobi and other consortiums	SSM user finding(demonstration) * Prospective user acquisition		
				SSM user candidates selection	Measures consideration toward continued utilization promotion	SSM user finding(user)	
						SSM user continued use promotion	

3. List of the deliverables in FY2024



(1) This year's deliverables (including those to be internally shared) (1/2)

- The following describes the deliverables that have been retained/shared internally, such as achievements of examinations and studies, specifications, etc. in the researches and developments in this year:

R&D subject	List of the deliverables
R&D subject 9: Construction and demonstration of a platform to make a wide variety of mobility platforms and related data integrated and interoperable	JMDS dissimulation website
	JMDS testbed execution environment
	Dissimulation articles about JMDS
	JMDS member list
	JMDS service hypothesis examination result
	Local government/transportation consultant interview results
	Technical specifications (alpha version)
	Operating organization establishment statement (draft)
R&D subject 10: Construction of a cyber-physical road space digital system platform (digital sandbox) to realize safe, comfortable, and rich mobility	Digital sandbox architecture diagram
	Digital sandbox screen design diagram
	Digital sandbox function list
	Digital sandbox execution environment platform and web app
	List of results of interviews with related ministries and agencies and related business operators/organizations
	Data request specifications
	Demonstration plan (disaster prevention theme/barrier-free service robot theme)

(1) This year's deliverables (including those to be internally shared) (2/2)

- The following describes the deliverables that have been retained/shared internally, such as achievements of examinations and studies, specifications, etc. in the researches and developments in this year:

R&D subject	List of the deliverables
R&D subject 11: Development of mobility-compatible services on City OS	Secondary transportation data analysis results (Chichibu City, Saitama Prefecture/Sakai City, Osaka Prefecture)
	Secondary transportation data analysis results (Chichibu City, Saitama Prefecture/Sakai City, Osaka Prefecture)
	Mobility hub installation procedure (Sakai City, Osaka Prefecture)
	Demonstration implementation plan (Chichibu City, Saitama Prefecture)
	Energy management desktop calculation simulator
R&D subject 16: Construction of Shared Service for Mobility (SSM), which serves as a platform on which mobility data share/common ownership between startups and other businesses is enabled	SSM_Function Design Document
	SSM_Operation Procedures_Administrator Function Edition
	SSM_Operation Procedures_Vehicle Operation Planning Edition
	SSM_Operation Procedures_Vehicle Operation Adjustment Edition
	SSM_Demonstration Verification Plan
	SSM_Demonstration Verification Plan_Appendix 1_Advance Preparation
	SSM_Demonstration Verification Plan_Appendix 2_Vehicle Operation Plan Demonstration Interview Sheet/Evaluation Sheet

**Contract control number:
23201497-0**

This report includes the achievements of the “Strategic Innovation Promotion Program (SIP)/3rd Phase: Building Smart Mobility Platforms” (research promotion agency: New Energy and Industrial Technology Development Organization) (NEDO Control Number: JPNP23023) we are promoting under the Cabinet Office Council for Science, Technology and Innovation.