

**Cross-ministerial Strategic Innovation promotion Program (SIP)
Phase 3, Development of Smart Mobility Platform**

**Promoting international research collaboration and
dissemination activities toward the Development of Smart
Mobility Platform**

FY2023 Report

March 2024

Mobility Innovation Collaborative Research Organization,
The University of Tokyo (UTmobl)

Mobility Innovation Alliance Japan



Table of Contents

1. Project overview

2. Activity plan

3. FY2023 activity report

I-1. Creating and expanding opportunities for integrated knowledge by the Japanese academic network

I-2. Research on international collaboration partners and proposals for collaboration

I-3. Establishment and promotion of international cooperation in the government level

I-4. Dissemination activities of research in SIP Smart Mobility Platform

II-1. Investigation of advanced overseas initiatives

1. Project overview

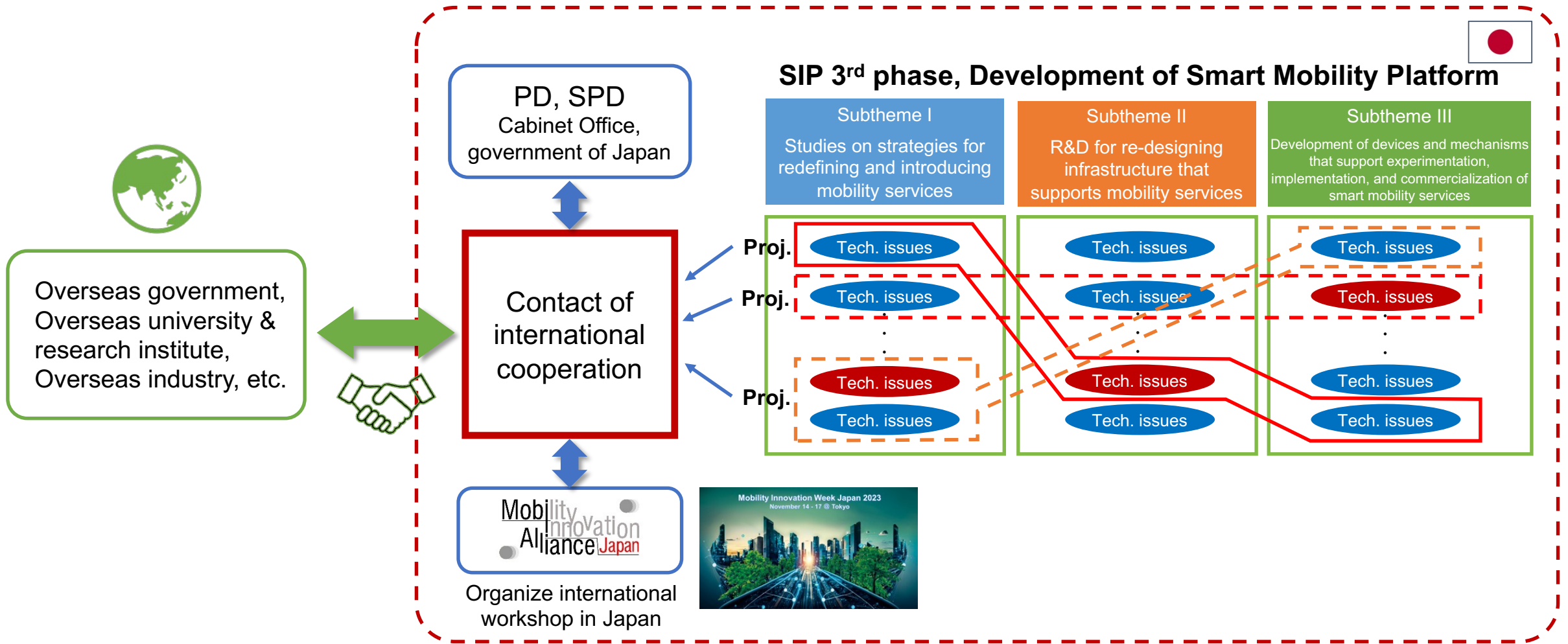
Outline of project activities

In order to promote international collaborative activities in the third phase of SIP, the development of the smart mobility platform, this project will expand the international network cultivated under the second phase of SIP (automated driving for universal services) to the research areas aimed at social implementation of mobility services, and promote a wider range of international collaborative activities, including collaboration with government and research institutions that are actively working on social implementation of mobility services.

In addition, dissemination activities of the SIP third phase Smart Mobility Platform will be promoted by utilizing the annual international workshops hosted by the Mobility Innovation Alliance Japan to enhance Japan's presence in this research area. Moreover, the project will support international collaborative activities among experts by serving as contact points for Japanese involvement and facilitating interactions with experts from overseas.

1. Project overview

Project role image



1. Project overview

R&D Items and Initiatives

Research and development item: ⑰ Promoting international collaboration

- I-1. Creating and expanding opportunities for integrated knowledge by the Japanese academic network
- I-2. Research on international collaboration partners and proposals for collaboration
- I-3. Establishment and promotion of international cooperation in the government level
- I-4. Dissemination activities of research in SIP Smart Mobility Platform

Research and development item: ① Identification of local mobility resources

- II-1. Investigation of advanced overseas initiatives
- II-2: Categorization of issues for social implementation *Start from FY2024

2. Activity plan

	FY2023		FY2024				FY2025			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
I-1. Creating and expanding opportunities for integrated knowledge by the Japanese academic network	Member Selection		★ Experts' meeting	★ Gathering opinions		★		★ Restructuring the members		★
I-2. Research on international collaboration partners and proposals for collaboration	Study of new international partners			Proposal for new international partners				Proposal for new additional international partners		
I-3. Establishment and promotion of international cooperation in the government level	Study of the continuation of Japan-Germany cooperation			Regular meetings of the coordinating secretariat						
	Agreement to continue EU-Japan cooperation		Meetings with new international partners				New international collaboration activities		Secretariat meeting	
I-4. Dissemination activities of research in SIP Smart Mobility Platform	Information Dissemination			Expert workshop			Continue information dissemination activities		Expert workshop	
II-1. Investigation of advanced overseas initiatives				Investigation of advanced overseas initiatives						
	TRB			On-site surveys and hearings						
II-2. Categorization of issues for social implementation				Categorization of issues						
										Update results

3. FY2023 activity report

I-1. Creating and expanding opportunities for integrated knowledge by the Japanese academic network



Kick-off Symposium for international cooperation in development of Smart Mobility Platform

- The Kick-off Symposium was held on December 26 as an opportunity to consider international research collaboration under this project. Total 99 members participated including online participants.
- In addition to the University of Tokyo (international collaboration) consortium, University of Tsukuba (Prof. Taniguchi) consortium, Nagoya University consortium, Hiroshima University consortium, and BOLDLY consortium took the stage and discussed future activities and international collaboration opportunities under SIP Smart Mobility Platform.
- As an international research collaboration in SIP Smart Mobility Platform, the collaboration opportunities with various regions, such as the ASEAN and European projects, were discussed, and expectations for the support for international collaboration activities were expressed to the University of Tokyo (International Collaboration) consortium.



3. FY2023 activity report

I-1. Creating and expanding opportunities for integrated knowledge by the Japanese academic network



Preparation for the experts' meeting (Alliance for promoting mobility innovation)

- In order to proceed international collaborative activities utilizing the comprehensive knowledge of academia in Japan, the experts from various research field were assigned for the experts' meeting by utilizing the academic network of the Mobility Innovation Alliance Japan.
- Members will consist of 8 university research institutes and 16 individual professors.

<Purpose of the meeting>

- Creation of international collaborative activities with new countries and research institutes, and research themes for international collaboration
 - Responding to proposals, requests, inquiries, etc. from overseas
 - Clarification of issues and themes to be addressed through this activity, and identification of achieved goals
- The first experts' meeting (Alliance for promoting mobility innovation) is planned in the first quarter of FY2024.

3. FY2023 activity report

I-2. Research on international collaboration partners and proposals for collaboration

Study on collaboration with European projects

- Study on the research and development framework in European Commission (DG-RTD) regarding mobility research
- Study on following projects under the Horizon Europe, which have interests to collaborate with SIP Smart Mobility Platform.



- Meeting with SINFONICA project was held, and the project purpose and interest points to collaborate were confirmed.
- SINFONICA is an interesting project that aims to develop a knowledge base and tools for providing mobility that responds to user needs. We will continue to exchange information.



- The both projects develop recognition and decision-making systems for automated vehicles.
- After confirmed the interest points to our projects, we will discuss a possibility of collaboration with relevant members in SIP Smart Mobility Platform.

3. FY2023 activity report

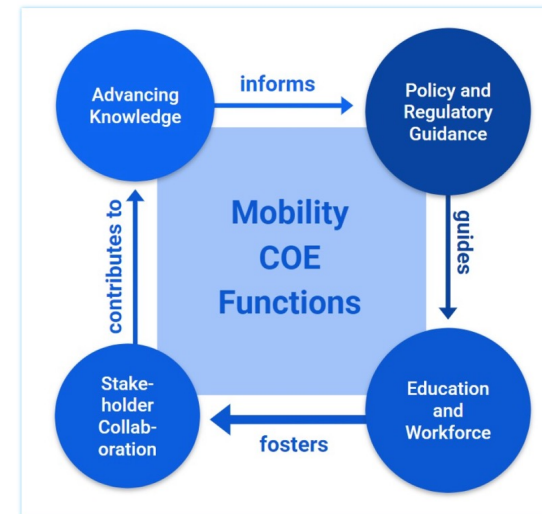
I-2. Research on international collaboration partners and proposals for collaboration

Study on collaboration with the United States

- Study on a research institute (Center of Excellence on New Mobility and Automated Vehicles), funded and established by the U.S. FHWA at UCLA (University of California, Los Angeles).
- As the institute is still in the early stages of its research, we will follow up the direction of their activities and discuss the possibility of future collaboration.

Center of Excellence on New Mobility and Automated Vehicles

- The Federal Highway Administration (FHWA) has awarded a five-year, \$7.5 million grant to establish a new center at UCLA. Funding is provided through the landmark 2021 Bipartisan Infrastructure Law for related research activities.
- The center will support research on the impact of new mobility and automated vehicles on the evolving transportation system when deployed at scale.



CENTER OF EXCELLENCE
on New Mobility and Automated Vehicles



Source: <https://www.mobilitycoe.org/about/>

3. FY2023 activity report

I-3. Establishment and promotion of international cooperation in the government level



EU-Japan Cooperation Activities with the European Commission

Ongoing discussions with the European Commission (DG-RTD) to continue the EU-Japan cooperation activities that have been conducted in SIP-adus (Phase II)

EU-Japan Cooperation Activities

- Informal meeting with the European Commission (DG-RTD) was held in November 2023. An overview of SIP Smart Mobility Platform was presented by the Cabinet Office.
- Summary documents of 14 projects in SIP Smart Mobility Platform were prepared and shared with the European Commission (December 2023 - February 2024).
 - Documents were circulated by the European Commission
 - Several European projects contacted expressing interest in collaboration
- A meeting between SINFONICA project under the Horizon Europe and the University of Tokyo consortium (international cooperation team) in SIP Smart Mobility Platform was held (Feb. 2024). The aims of SINFONICA project and interest points for Japanese projects were confirmed.



3. FY2023 activity report

I-3. Establishment and promotion of international cooperation in the government level



Establish relationship with USDOT (U.S. Department of Transportation)

- By utilizing the opportunity of the TRB Annual Meeting in January 2024, an information exchange was conducted with USDOT ITS JPO* and FHWA*2. Discussions were held on the opportunity of future collaboration with Japan.
- USDOT is interested in the activities of SIP Smart Mobility Platform and collaboration with Japan, and it is confirmed that exchanging information will continue for potential collaboration. USDOT also expressed positive interest in participating in an international workshop (Mobility Innovation Week Japan) in Japan organized by Mobility Innovation Alliance Japan.
- As potential areas for future collaboration, the Cooperative Driving Automation (CDA) program, traffic flow simulation efforts of the FHWA, and V2X Communication research areas on which ITS JPO is focusing were brought up. There were also suggestions for potential collaboration with newly launched Mobility Center of Excellence (COE) by FHWA.

* ITS JPO : Intelligent Transportation Systems Joint Program Office

*2 FHWA: Federal Highway Administration

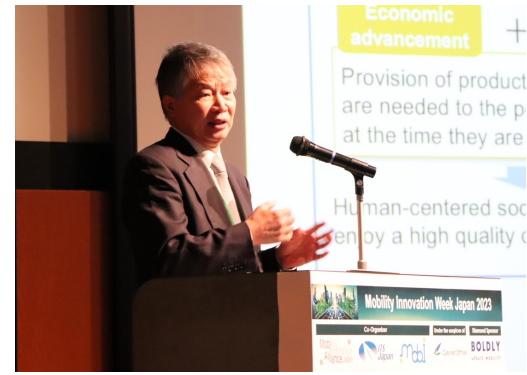


3. FY2023 activity report

I-4. Dissemination activities of research in SIP Smart Mobility Platform

Disseminating Information at Mobility Innovation Workshop on November 14, 2023

- The Mobility Innovation Workshop was organized by the Mobility Innovation Alliance Japan, ITS Japan, and Mobility innovation collaborative research organization, the University of Tokyo (UTmobl) to promote international collaborative research activities on new mobility, based on the efforts of the SIP-adus Workshop.
- Total of 148 members, including 59 experts from overseas, participated and discussed new mobility, including automated driving, from diverse perspectives, as well as exploring potential possibilities for international collaboration.
- Ishida Program Director introduced activities on SIP Smart Mobility Platform in the Plenary session of the Mobility Innovation Workshop.



3. FY2023 activity report

I-4. Dissemination activities of research in SIP Smart Mobility Platform

Compilation of project summary documents for overseas

- Compiled a document (English version) describing the each of project outlines of SIP Smart Mobility Platform, based on a request from the European Commission (DG-RTD).
- Following the release of this project information, several Horizon Europe projects have contacted us to discuss the future potential collaboration.
- This information (project summary document) is posted on the Mobility Innovation Alliance Japan website.

Web site URL

Japanese version: <https://mobilityinnovationalliance.org/aboutus>

English version: <https://mobilityinnovationalliance.org/en/aboutus>

3. FY2023 activity report

II-1. Investigation of advanced overseas initiatives

Presentations from international experts at Mobility Innovation Workshop 2023

(1) Mobility innovation to solve social issues

- Demonstration and safety evaluation efforts using telecommunications and automated driving technologies in rural areas of Germany (Technical University of Ilmenau, Germany)
- Transportation Innovations for Safe Mobility in the United States (AAA Foundation for Traffic Safety, USA)
- Toward sustainable urban mobility using digital twins (Technical University of Delft, The Netherlands)

(2) Mobility innovation to provide sustainable mobility services for all

- Automated Driving in Public Transport (UITP, International Union for Public Transport)
- ULTIMO initiative, a large-scale demonstration project for automated public transportation (DB Regio Bus, Germany)
- Lessons learned from 2 years operation with automated shuttles in the city of Linköping, Sweden (Swedish Road Transport Research Institute)
- Quantum impact of advancement of Chat GPT/AI (Advanced Mobility Group, USA)

3. FY2023 activity report

II-1. Investigation of advanced overseas initiatives

Public Transport Automated Mobility Initiatives in Europe and the United States

Efforts to introduce equitable mobility, including automation of public transportation, are progressing in Europe and the United States.

- Automated Micro Transit System in Contra Costa County, U.S.
Small automated shuttles (Glydcar) connect towns in Contra Costa County.
- Electric automated shuttle services by Huston Metro, U.S.
An electric, automated shuttle is introduced with the aim of connecting residents areas with limited access to public transportation with the city's existing infrastructure. Wheelchair access is also available.
- Hamburg Automated Shuttle Initiative (ALIKE project), Germany
Holon Mover, VW ID and Buzz AD are used. A comprehensive system will be built for the reservation and use of up to 20 automated vehicles in public transportation system in Hamburg.
- Automated Bus Initiative in Berlin, Germany
Based on MAN Truck & Bus's electric buses, the Technical University of Berlin, etc. have developed an automated bus that will introduce an intelligent transportation system with automated vehicles by the spring of 2024.

3. FY2023 activity report

II-1. Investigation of advanced overseas initiatives



Efforts to utilize an infrastructure in Europe and the U.S.

These are still in the early phase, we will continue to monitor and study the necessity of future collaboration with them.

- **USDOT Draft V2X deployment plan**
USDOT issued a draft version of its National V2X Deployment Plan last October, with deployment milestones in three stages: Short (2024-26), Mid (2027-29), and Long (2030-34).
- **U.S. Smart Intersections Project (University of Michigan)**
Develop an infrastructure-assisted cooperative driving automation testbed in Ann Arbor to accelerate connected and automated vehicle deployment.
- **Cavnue Project in Michigan, U.S.**
Construction started on I-94 in Michigan to create "the most sophisticated road in the world". Digital infrastructure will be deployed to connect and assist connected and automated vehicles (CAVs).
- **Intersection pedestrian accident measures by New Jersey DOT**
Cameras are installed to recognize intersection conditions, and measures such as red phase extension, box detection, and passive pedestrian detection/extension significantly reduce the number of pedestrian-vehicle collisions.
- **ITS Technology Use Case Library by ITS America**
ITS America published Use Case Library which shows ITS applications in January 2024.
- **Cooperative ITS activities in Europe**
Published revised ITS-Directive in November 2023. Promoting the expansion of cooperative ITS infrastructure.

END

This report includes the results of Cross-ministerial Strategic Innovation Promotion Program (SIP) 3rd Phase, “Development of Smart Mobility Platform” promoted by Council for Science, Technology and Innovation, Cabinet Office. (Project Management Agency : New Energy and Industrial Technology Development Organization (NEDO) (Project Code JPNP23023))