



公益財団法人 国際交通安全学会  
International Association of Traffic and Safety Sciences

# FY 2024 IATSS Research Project Reporting and Award Ceremony



## Kazuhiko Takeuchi

President, IATSS  
Institute for Global Environmental Strategies (IGES)  
Board chairman



## Tomohiro Ichinose

IATSS member  
Chair, Planning Committee,  
Investigatory Research Department  
Dean, Professor, Faculty of Environment and  
Information Studies, Keio University

Dear Esteemed Colleagues,

With the arrival of spring, we sincerely hope this message finds you in good health and prosperity. We would also like to express our deepest gratitude for your continued understanding and support of our society's activities.

High-quality transportation and its associated culture contribute significantly to the development of industries and social activities, while also enhancing the convenience and richness of daily life. Even in the rapidly evolving digital society, transportation plays a crucial role. In particular, the advancement of automobile transportation is undergoing a dramatic transformation, driven by the evolution of AI, autonomous driving technologies, and the rise of electric vehicles.

These technological advancements hold great potential for reducing traffic accidents and achieving more efficient mobility. However, they also introduce new risks and ethical challenges. Addressing these issues requires a perspective that goes beyond mere convenience to ensure that technological innovation contributes to the safety, sustainability, and well-being of society as a whole. It is essential to develop a grand vision for a sustainable and advanced mobility society, conduct research and propose practical solutions, and engage in ongoing educational support activities.

At the International Association of Traffic and Safety Sciences (IATSS), we recognize the critical responsibility of addressing transportation and its safety from an interdisciplinary and international perspective. On September 17 of last year, our society celebrated its 50th anniversary and presented the IATSS Vision 2024 to both our members and the broader community. Based on this vision, we will continue our research activities to realize a sustainable, safe, and secure mobility society. We earnestly seek the continued support and cooperation of all stakeholders in this endeavor.

This year, we are pleased to announce that we will once again be hosting our annual Research and Study Report Meeting as well as the IATSS Awards Ceremony. We warmly invite you to attend these events. While we understand that you may have a busy schedule, we would be truly honored by your participation.

We look forward to welcoming you.

We hope this message finds you well in the pleasant days of early spring. We would like to extend our sincere appreciation for your continued understanding and support of IATSS research and survey activities.

Research and survey activities are one of the core initiatives of the International Association of Traffic and Safety Sciences (IATSS). Our association brings together members and special research fellows from a wide range of specialized fields, including traffic engineering, urban engineering, economics, education, law, public administration, psychology, information systems, mechanical engineering, environment and energy, medicine, regional and social studies, as well as arts and culture. Leveraging their diverse expertise, we conduct a variety of research and survey projects.

These projects are led by our members, who conduct multi-year research and surveys on traffic and safety-related issues, with findings compiled into comprehensive reports. Our research approach emphasizes interdisciplinarity and internationality, while the project outcomes prioritize practical applicability and foresight to directly contribute to achieving their objectives. Grounded in these four key principles, we tackle a wide range of themes aimed at realizing an ideal traffic society.

This year, we have undertaken 18 research projects, surpassing last year's total. In this report session, we will present the findings from four of these projects, along with one research project from ATRANS.

This report session will be held in a hybrid format, and we sincerely hope you will attend in person to engage in lively discussions. Following the research report session, we will also hold an awards ceremony to recognize outstanding contributions to traffic safety, excellent publications, and exceptional papers. We understand you may be busy, but we truly look forward to your participation.



# FY 2024 IATSS Research Project Reporting and Award Ceremony Program

**Date** 11th April, 2025(Fri) 13:00 - 18:00

**Event Format** Hybrid (on-site + remote delivery)

**Venue** Keidanren hall, Keidanrenkaikan 2nd floor

## FY 2024 IATSS Research Project Reporting Program

13:00	Opening Remarks	Kazuhiko Takeuchi President, IATSS
13:05	<b>Report Theme ① [2402C]</b> A Society Coexisting with Autonomous Vehicles:Comprehensive Recommendations for Building the Foundation	Takeyoshi Imai
13:45	<b>Report Theme ② [2406C]</b> Research on Efficient Accident Prevention Measures Using Artificial Intelligence	Akinori Morimoto
14:25	[Break] 10min	
14:35	<b>Report Theme ③ [2409B]</b> Research on Accelerating the Adoption of Japanese-Style Roundabouts	Hideki Nakamura
15:15	<b>Report Theme ④ [2412B]</b> International Comparative Study on the Acceptance and Environmental Improvements for Enhancing the Safety of Small Electric Mobility	Koji Suzuki
15:55	<b>ATRANS Project</b> Investigation of Operations and Services of Small Public Transport and Paratransit to Enhance Railway Station Access	Varameth Vichiensan
16:25	Concluding remarks	Tomohiro Ichinose

## The 46th (FY 2024) IATSS Award Ceremony Program

16:40	Introduction of distinguished guests	
16:43	Opening Remarks	Kazuhiko Takeuchi President, IATSS
16:48	Selection Progress Report	Kazuhiisa Ogawa Chairperson, Awards and Grants Department, planning committee
16:55	<b>Presentation of Awards</b>	
	<b>Achievement Award</b> : Supporting the City and Nurturing People through Shared Cycling: The Heartbeat of Bicycles Culture in Sapporo	Non-profit Organization Porocle
	<b>Achievement Award</b> : Public-Private Co-Creation and Regional Revitalization Telework: Pioneering Local Mobility Innovation	Shiojiri City
	<b>Literature Award</b> : City Walks and Urban Landscapes: Interpreting the Wholeness of Spatial Experience	Yusuke Kita
	<b>Literature Award</b> : Learning from the World: Designing Bicycle-Friendly Cities with People and Livability at the Core	Kosuke Miyata Wakako Obata Tazue Minamimura Yohei Hayakawa
	<b>Best Paper Award</b> : Analysis of primary-party traffic accident rates per driver in Japan from 1995 to 2015: Do older drivers cause more accidents?	Kyoungmin Kim Keisuke Matsuhashi Masahiro Ishikawa
17:15	Congratulatory address	Koichi Tachikawa Director General of the National Police Agency Koju Matsubayashi Deputy Director-General, Minister's Secretariat, Cabinet Office
17:25	Acknowledgments	Yusuke Kita Kosuke Miyata Kyoungmin Kim
17:34	<b>Award Achievements</b>	
	<b>Achievement Award</b> : Supporting the City and Nurturing People through Shared Cycling: The Heartbeat of Bicycles Culture in Sapporo	Mikako Kumagai Non-profit Organization Porocle
	<b>Achievement Award</b> : Public-Private Co-Creation and Regional Revitalization Telework: Pioneering Local Mobility Innovation	Takashi Momose Shiojiri City
17:54	Closing Remarks	Nobuyuki Kawai, Executive Director, IATSS

\*Program contents are subject to change.

## Registration

<https://event.iatss.or.jp/en/>



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## 2402C Project

### A Society Coexisting with Autonomous Vehicles: Comprehensive Recommendations for Building the Foundation

#### 《 Background and Objective 》

##### Results of Fiscal Year 2024 (Year 3)

###### ■ A Review of Three Years of Research

- Understanding the Specific Automated Driving System introduced by the 2022 Revised Road Traffic Act
- Examination based on related foreign legal systems (Germany, the UK, Switzerland)
- Responsibility allocation in the event of autonomous vehicle accidents—Dilemma situation (Trolley Problem)
- Development of guidelines based on an international symposium

###### ■ Guidelines – The Scope of Criminal Liability for Stakeholders in the Event of an Accident

- Guidelines Mimicking the Rules of the German Ethics Committee – Internal Contradictions
- Deontological Ethics → An autonomous vehicle facing a dilemma situation rejects the idea of sacrificing one person to save another, leaving it to chance.  
→ On the other hand, it allows the harm of a few lives to protect the majority. This presents a contradiction.
- Respect for Individual Dignity → Autonomous vehicle behavior should prioritize saving more lives.  
→ According to the principle of emergency evacuation, programmers and manufacturers are exempt from criminal liability.

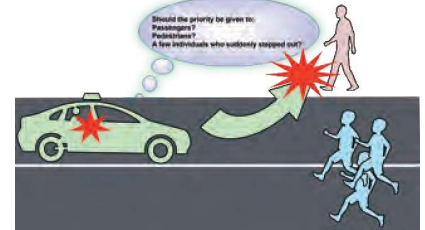
If emergency evacuation cannot be established → If the programmer and manufacturer have made every effort to minimize damage, intent and negligence are denied, and criminal liability does not apply.  
Judgment based on evidence from individual cases (also referencing the initiatives by the Ministry of Agriculture, Forestry, and Fisheries).

###### ■ Prerequisite Issues of Emergency Evacuation

- To what extent should individuals who face a dilemma situation as a result of taking risks be protected?
- Who should be prioritized for protection: A person who took the risk of entering the road and faced a collision with an autonomous vehicle, or a pedestrian walking on the sidewalk with a lower probability of encountering an accident?

###### ■ Should the occupants of an autonomous vehicle be prioritized for protection over other involved parties?

###### ■ If an autonomous vehicle is created in accordance with ISO standards, would the programmer and manufacturer be exempt from liability in the event of an accident? Are the ISO standards reasonable?



Who should be prioritized for protection in an emergency situation? (Not based on whether they are passengers or not, but by assessing the presence and degree of risk-taking)



What actions must programmers, manufacturers, and remote monitors take, and to what extent, to avoid liability in the event of an autonomous vehicle accident?

## 2406C Project

### Research on Efficient Accident Prevention Measures Using Artificial Intelligence

#### 《 Background and Objective 》

The 11th Basic Plan for Traffic Safety prioritizes the advancement of traffic accident analysis using geographic information and other data, aiming to enhance traffic law enforcement to prevent accidents. Since 2014, IATSS has been publishing the 'Traffic Enforcement Handbook,' providing continuous information to stakeholders involved in traffic enforcement.

Against this backdrop, in FY2022, a model utilizing artificial intelligence (AI) was developed to propose optimal locations for efficient accident prevention measures. In FY2023, a field validation of the basic model was conducted. In FY2024, the research findings from the past two years were consolidated, leading to discussions on social implementation and the revision of the Traffic Enforcement Handbook.

#### 《 Summary 》

##### ■ Public Release of the Traffic Enforcement Support System

- The open-source version of the basic model developed in FY2023 will be released.

##### ■ Efforts Toward Generalization of the Traffic Enforcement Support System

- On-site interviews were conducted at five locations (Akita, Kanagawa, Kyoto, Mie, and Okinawa police departments).
- The current state of traffic enforcement and challenges for system implementation were analyzed.

##### ■ Improvement of the Basic Model for Generalization

- The basic model was improved based on the results of field verification conducted in FY2023 and interviews with each prefectural police department.

##### ■ Revision of the Traffic Enforcement Handbook

- Based on the 2017 revised edition of the 'Traffic Enforcement Handbook,' additional research findings were included, along with revisions based on interview results.
- A new chapter was added to introduce research trends using artificial intelligence (AI) and the content of the 'Traffic Enforcement Support System' developed by IATSS.



Conducting interviews for the 'Traffic Enforcement Support System' at 5 locations across Japan



Revision of the Traffic Enforcement Handbook



## 2409B Project

### Research on Accelerating the Adoption of Japanese-Style Roundabouts

#### 《 Background and Objective 》

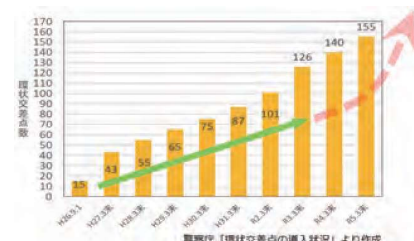
Since IATSS launched its project on roundabouts (RAB) in 2009, continuous research and investigation have steadily led to tangible results at each stage, from feasibility studies to social experiments, real-world implementation, and full-scale deployment following legislative revisions. Currently, over 160 RABs have been established nationwide. However, in terms of adoption levels compared to other developed countries, Japan is still in the early stages.

Given the persistent occurrence of traffic accidents at at-grade intersections and the anticipated introduction of autonomous vehicles, the need to promote RABs suitable for Japan from an international perspective is becoming increasingly important. To achieve this, it is crucial to identify and address the challenges that hinder the widespread adoption of RABs in Japan.

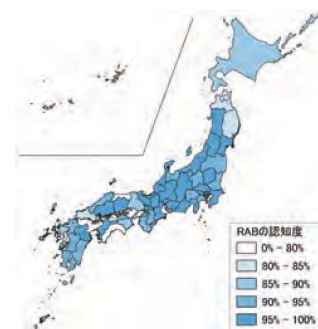
This research project aims to contribute to the expansion of RABs in Japan by developing unique specifications and methodologies tailored to critical local factors such as space efficiency, cost-effectiveness, simplified design, diverse user needs, and consensus-building processes. Additionally, by clarifying the differences between Japan and other countries and actively disseminating findings, the project seeks to facilitate the accelerated adoption of RABs in Japan.

#### 《 Summary 》

As part of a needs assessment for challenges related to the introduction of RABs in Japan, a nationwide survey was conducted under the 2309A project targeting local governments and related entities. Based on the survey results, follow-up interviews were conducted in regions with low awareness of RABs, identifying key issues such as the necessity of cost-effective structures and awareness-promotion activities. Additionally, RAB seminars were held in Kochi and Nagasaki, two prefectures where RABs had not yet been introduced. During these seminars, discussions were held with road and traffic authorities regarding potential RAB implementation sites. As a result, a feasibility study on converting a signalized intersection into an RAB was initiated in Kochi, while a social experiment was launched in Isahaya City, Nagasaki. Furthermore, regarding small-scale or simplified RAB structures, the project systematically analyzed challenges specific to Japanese-style RABs, with a particular focus on geometric design requirements. A framework was also developed to identify key aspects that should be verified through future social experiments on small RABs.



Trends in the Number of Roundabouts Installed in Japan



Prefectural Distribution of RAB Awareness



Examples of Small Roundabouts

## 2412B Project

### International Comparative Study on the Acceptance and Environmental Improvements for Enhancing the Safety of Small Electric Mobility

#### 《 Background and Objective 》

To achieve safe and comfortable transportation, the widespread adoption and expansion of various small electric mobility devices, such as electric kick scooters and ultra-compact seated mobility, are highly anticipated. This project aims to conduct research on environmental improvements to enhance social acceptance and safety for small electric mobility devices designed for 1-2 passengers.

#### 《 Summary 》

##### Research Outcomes

- ① Through field surveys after the revision of the Road Traffic Act and domestic and international case studies, we were able to deepen the discussion on small electric mobility (mainly electric kick scooters) using roadways/sidewalks and organize the issues and countermeasures at locations such as basic sections and intersections.
- ② Based on experiments, we were able to suggest road cross-section design that are safe and accepted by pedestrians, cyclists, and small electric mobility users.
- ③ Regarding the safe use of small electric mobility (specified small motorized bicycles), we made progress in creating educational content for safety training aimed at non-license holders.

##### Future Challenges

- ① Exchange opinions with road administrators and service suppliers on the research findings, while gathering on-site needs and spreading the results of IATSS research to the general public.
- ② Conduct safety education for non-license holders using the developed materials.
- ③ Clarify hierarchical road networks, where mobility devices of different speed levels coexist and quantify the effects of safety improvements through the separation of these mobility.



on-site experiment



Workshop in Qatar



Passing position of electric kick scooters at intersections

## 2024 ATRANS Project

### Investigation of Operations and Services of Small Public Transport and Paratransit to Enhance Railway Station Access

#### 《 Background and Objectives 》

Despite Bangkok's over 276-km rail transit network, station access transport remains underdeveloped, especially in outer areas. Three key modes serve as primary first-mile connections:

- **Motorcycle taxis** – Fast and efficient for short trips but pose safety concerns.
- **Kapor buses (Silor-Lek)** – Small, modified pickup trucks carrying up to eight passengers on fixed routes, sometimes operating informally as taxis.
- **Songthaew buses** – Larger modified pickup trucks with two rows of seating, operating flexibly on fixed routes, more flexible in terms of stops.

This study examines the operations of these modes along urban railway corridors, identifying key influencing factors and proposing strategies to enhance station access transport.

#### 《 Outline 》

We examined the operations of these key station access modes, including routes, service areas, fares, vehicle fleets, driver availability, terminal and stop locations, timetables, and service frequencies. Driver interviews provided insights into socio-economic conditions, working environments, and challenges, while passenger interviews assessed user satisfaction and safety perceptions.

Findings indicate that Kapor buses and Songthaews offer affordable and flexible first-mile connectivity but face competition from motorcycle taxis, ride-hailing apps, and emerging alternatives like Muvmi e-TukTuks. Passengers value their affordability and safety but raise concerns about convenience and time reliability. While Kapor bus drivers generally find their work satisfactory, financial insecurity due to low earnings remains a challenge.

To improve their services, proposed strategies include upgrading vehicles, enhancing service quality, integrating with broader urban mobility systems, and adopting demand-responsive transport through a Mobility as a Service (MaaS) platform.

Building on these findings, we estimated the potential demand and supply for station access transport along railway corridors, providing valuable guidelines for enhancing rail station access in Bangkok.



Dark Red Line



Kapor bus (Silor-Lek)



Songthaew

## IATSS Award

#### 《 Achievement Award 》

**Supporting the City and Nurturing People through Shared Cycling:  
The Heartbeat of Bicycles Culture in Sapporo**

Non-profit Organization Porocle

**Public-Private Co-Creation and Regional Revitalization Telework:  
Pioneering Local Mobility Innovation**

Shiojiri City

#### 《 Literature Award 》

**City Walks and Urban Landscapes: Interpreting the Wholeness of Spatial Experience**

Yusuke Kita

**Learning from the World: Designing Bicycle-Friendly Cities with People and Livability at the Core**

Kosuke Miyata  
Wakako Obata  
Tazue Minamimura  
Yohei Hayakawa

#### 《 Best Paper Award 》

**Analysis of primary-party traffic accident rates per driver in Japan from 1995 to 2015:  
Do older drivers cause more accidents?**

Kyoungmin Kim  
Keisuke Matsushashi  
Masahiro Ishikawa