

Commencement of Demonstration Tests for the Social Implementation of Level 4 Autonomous Driving Trucks

- Implementing Comprehensive Demonstration Driving Tests in the Final Fiscal Year of Theme 3 Projects on Shin-Tomei Expressway -

Toyota Tsusho Corporation (“Toyota Tsusho”), Advanced Smart Mobility Co., Ltd. (“Advanced Smart Mobility”), Nippon Koei Co., Ltd. (“Nippon Koei”), and Mizuho Research & Technologies, Ltd. (“Mizuho Research & Technologies”) were contracted by the Ministry of Economy, Trade and Industry (METI) and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) in fiscal 2021 to perform the “initiative for the realization of high-performance trucks on expressways (Theme 3)”^{*1} of the “Project on Research, Development, Demonstration and Deployment (RDD&D) of Automated Driving toward the Level 4”^{*2} and its Enhanced Mobility Services (RoAD to the L4).” The four contractors are advancing technological development and environmental preparation for the social implementation of Level 4 autonomous driving trucks.

Starting today, the four contractors, along with four commercial vehicle manufacturers—Isuzu Motors Limited (“Isuzu”), Hino Motors, Ltd. (“Hino”), Mitsubishi Fuso Truck and Bus Corporation (“MFTBC”), and UD Trucks Corporation (“UD Trucks”)—have commenced comprehensive driving tests on the Shin-Tomei Expressway as the culmination of their verification and demonstration efforts. This initiative represents the final year of Theme 3 projects.



“Autonomous driving test vehicles” from UD Trucks, Isuzu, Advanced Smart Mobility, Hino, and MFTBC

1. Purposes and Background of Theme 3 Projects

To solve social issues such as driver shortages, the four contractors, together with the four commercial vehicle manufacturers, logistics companies, and other related parties, are aiming for the social implementation of autonomous driving trucks on highway(s) from fiscal 2026 onward through a joint public-private effort.

To date, we aim to achieve single-vehicle driverless driving between relay areas, such as logistics facilities around expressways and service areas, and verify support from external infrastructure equipment, operations such as monitoring and management, and vehicle functions necessary for such operations to develop the environment for the practical implementation of Level 4 autonomous driving trucks.

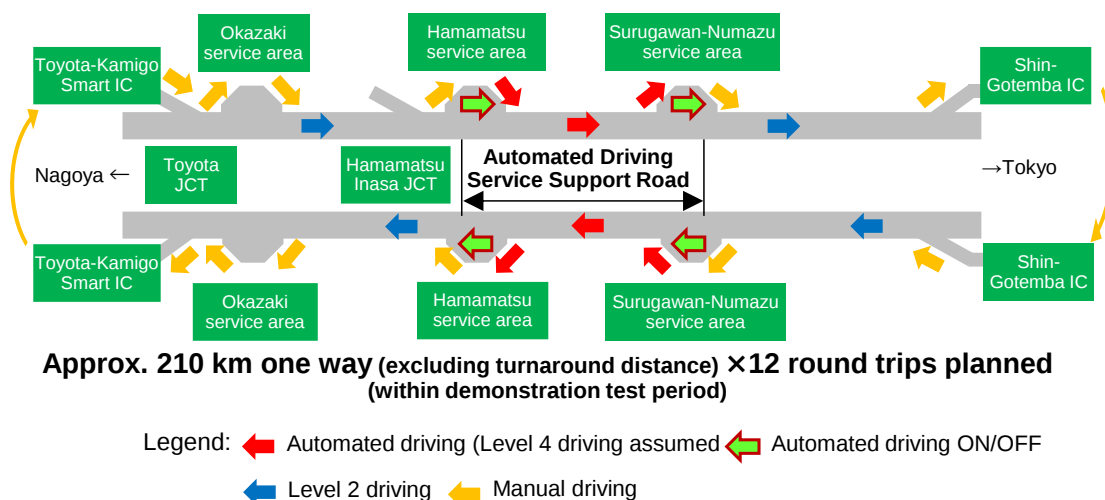
The previous year's demonstration tests were conducted between the Surugawan-Numazu service area and Hamamatsu service area on the Shin-Tomei Expressway. We individually confirmed and verified functions such as the automated departure/arrival system (a function that automatically starts and parks the vehicle), the emergency stopping capability (a braking function to stop the vehicle in case of abnormalities), the predictive information support function (a feature that uses information such as broken-down vehicles and fallen objects transmitted from roadside equipment like ITS spots^{*3} to assist with lane changes), and remote monitoring functions.

2. Overview of Comprehensive Driving Demonstration Tests

The final fiscal year demonstration test for Theme 3 projects will involve conducting comprehensive driving demonstration tests on the following functions, which have been previously verified individually, on the Shin-Tomei Expressway (Shin-Gotemba IC to Okazaki service area), including the Automated Driving Service Support Road^{*4}.

- Automated driving (Level 4 driving assumed) on the Automated Driving Service Support Road and Level 2 driving^{*5} on other sections
- Automatic merging via automatic departure/arrival and merge assistance at the Surugawan-Numazu service area and the Hamamatsu service area
- Automatic lane changes and speed adjustments supported by roadside equipment providing predictive information
- Evaluation of operational monitoring functions, including emergency responses

[Diagram of the Comprehensive Driving Demonstration Test]



3. Future Initiatives

This comprehensive driving demonstration test is scheduled to run through December 2025. We will conduct verification to contribute to standardizing the technological and operational environment for the social implementation of autonomous driving trucks from fiscal 2026 onward. As a summary of the Theme 3 projects, the outcomes of this verification will be compiled into a “Guide for Introducing Level 4 Autonomous Driving Trucks on Expressways” (for infrastructure providers and autonomous driving truck suppliers) and the “Autonomous Driving Truck Utilization Guidebook” (for logistics and transportation operators).

4. Roles of Each Company

Toyota Tsusho	Project promotion, overall planning management
Advanced Smart Mobility	Vehicle system development, evaluation testing
Nippon Koei	Demonstration experiment operation
Mizuho Research & Technologies	Examination of highly useful business models in logistics systems utilizing Level 4 autonomous driving trucks, business feasibility analysis, etc.
Isuzu	Organization and evaluation of driving environment/conditions, planning of demonstration tests
Hino	
MFTBC	
UD Trucks	

*1 Four initiatives (Themes 1 to 4) have been established for the realization and spread of driverless autonomous driving services, and the “initiative for the realization of high-performance trucks on expressways (Theme 3)” is one of them. (Reference: Japanese only) Ministry of Economy, Trade and Industry:
https://www.meti.go.jp/policy/mono_info_service/mono/automobile/Automated-driving/automated-driving.html

*2 A state in which the autonomous driving device replaces all driving operations in a limited area that meets specific driving environment conditions.

(Reference: Japanese only) Ministry of Land, Infrastructure, Transport and Tourism:
<https://www.mlit.go.jp/report/press/content/001377364.pdf>

- *3 Intelligent Transport Systems (ITS) Spot is infrastructure for road-vehicle communication that enables two-way exchange of road traffic information with vehicles. It is an information and communication device installed on roads. Drivers can receive real-time traffic information and safety information.
- *4 Road sections equipped to support the driving of automated driving vehicles. Road sensors and communication equipment are utilized on highways and general roads to assist the operation of automated driving vehicles.
- *5 Level 2 driving refers to driving based on adaptive cruise control and lane-keeping assistance, where the driver operates the steering wheel and other controls while maintaining full control. Automated driving (Level 4 driving assumed)" builds upon Level 2 driving by incorporating merging assistance and predictive information support for obstacles ahead, allowing the driver to operate the vehicle in a hands-off state.

Reference: Overview of Each Company

Overview of Toyota Tsusho Corporation

Location	Nagoya City, Aichi Prefecture
Established	July 1, 1948
Capital	64,936 million yen
Representative	President & CEO Toshimitsu Imai
Business description	Domestic trade of goods, export/import of goods, offshore trade, construction undertaking, insurance agents, etc.
Website	https://www.toyota-tsusho.com/english/

Overview of Advanced Smart Mobility Co., Ltd.

Location	Tsukuba City, Ibaraki Prefecture
Established	June 19, 2014
Capital	95 million yen
Representative	CEO Masaya Segawa
Business description	Development, manufacturing and sales of autonomous driving system, support of autonomous driving system operation, development hardware and software for the autonomous driving
Website	https://www.as-mobi.com/en/

Overview of Nippon Koei Co., Ltd.

Location	Chiyoda-ku, Tokyo
Established	June 7, 1946
Capital	500 million yen
Representative	Representative Director and President Tomohisa Fukuoka
Business description	Construction technology consulting services in Japan and overseas
Website	https://www.n-koei.co.jp/consulting/english/

Overview of Mizuho Research & Technologies, Ltd.

Location	Chiyoda-ku, Tokyo
Established	April 1, 2021
Capital	1,627.5 million yen
Representative	President & CEO(Representative Director) Masatoshi Yoshihara
Business description	Information processing services, think tank consulting services
Website	https://www.mizuhogroup.com/information-and-research

Overview of Isuzu Motors Limited

Location	Yokohama City, Kanagawa Prefecture
Established	April 9, 1937
Capital	40,644 million yen
Representative	President and Representative Director, COO Shinsuke Minami
Business description	Manufacturing and sale of products such as automobiles, transportation machinery and equipment, prime movers, etc. and their parts, as well as related materials and supplies
Website	https://www.isuzu.co.jp/world/

Overview of Hino Motors, Ltd.

Location	Hino City, Tokyo
Established	May 1, 1942
Capital	72,717 million yen
Representative	President & CEO Satoshi Ogiso
Business description	Manufacturing and sales of trucks, buses, etc.
Website	https://www.hino-global.com/

Overview of Mitsubishi Fuso Truck and Bus Corporation

Location	Kawasaki City, Kanagawa Prefecture
Established	January 6, 2003
Capital	35,000 million yen
Representative	President & CEO Karl Deppen
Business description	Development, design, manufacturing, sales/purchases, import/export, and other trading of trucks, buses, industrial engines, etc.
Website	https://www.mitsubishi-fuso.com/en/

Overview of UD Trucks Corporation

Location	Ageo City, Saitama Prefecture
Established	December 1, 1935
Capital	10,000 million yen
Representative	President and CEO Koichi Ito
Business description	Development, manufacturing, and sales of heavy-duty trucks, sales of medium-duty and light-duty trucks, manufacturing and sales of automotive parts, maintenance of trucks and buses, and sales of repair parts for trucks and buses
Website	https://www.udtrucks.com/