



独立行政法人 自動車技術総合機構
National Agency for Automobile and Land Transport Technology

交通安全環境研究所

National Traffic Safety and Environment Laboratory

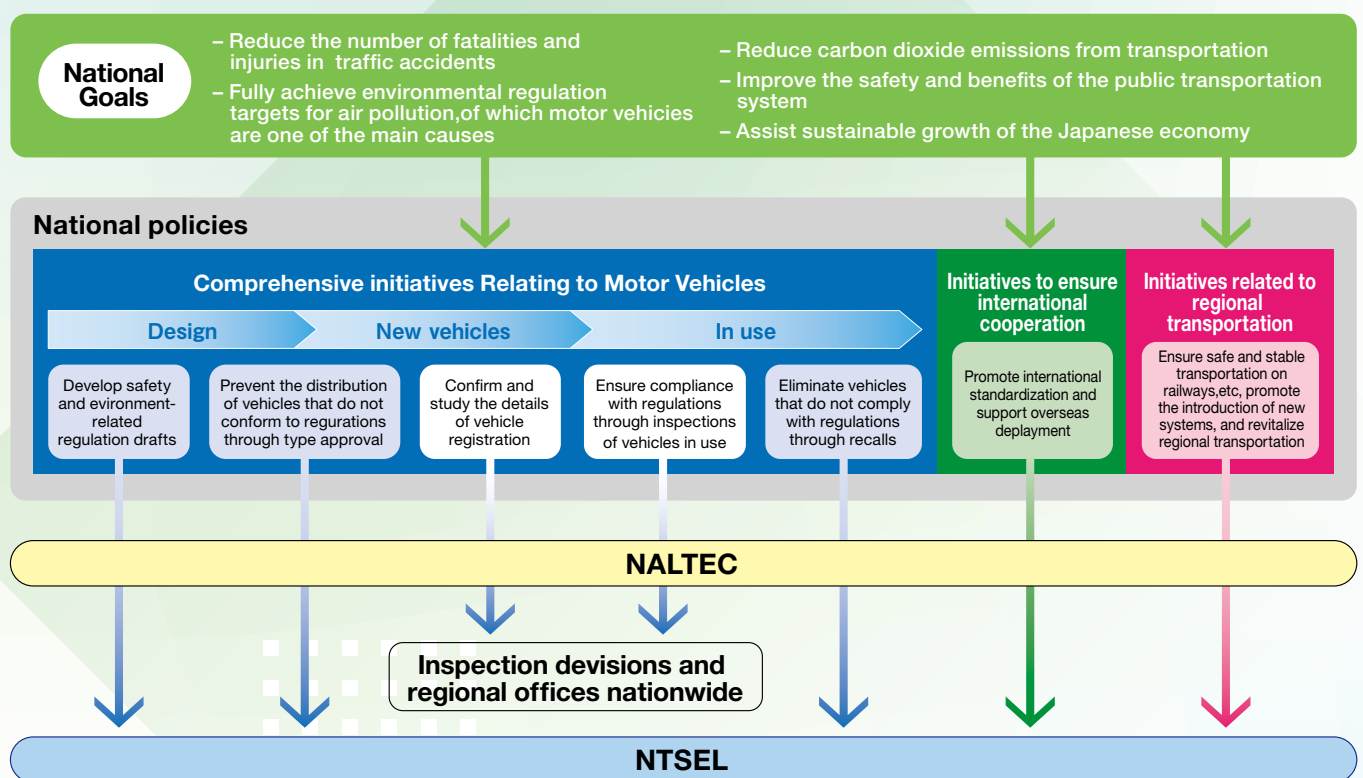
Creating a safe and environmentally friendly transportation system

Since its establishment in 1950 as a laboratory under the former Ministry of Transport, the National Traffic Safety and Environment Laboratory (NTSEL) has been working to help create a safe and environmentally friendly transport system through tests and studies supporting the government's policymaking and standardization efforts for motor vehicles and other means of land transportation, automobile type approval tests, technical validation for motor vehicle recalls, etc.

On April 1, 2016, NTSEL was integrated with the former National Agency of Vehicle Inspection (NAVI) to start afresh as the National Traffic Safety and Environment Laboratory of the National Agency

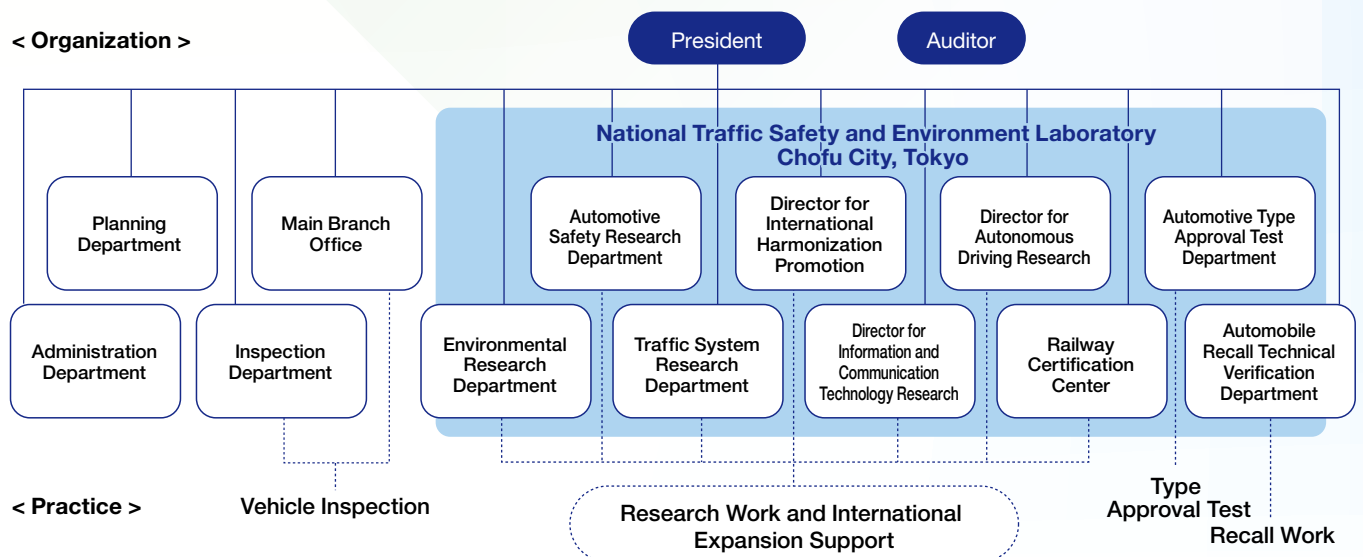
for Automobile and Land Transport Technology (NALTEC). After the integration, the NTSEL contributes to the development of national policies in an integrated manner, building on the strengths of the two organizations and addressing all aspects of issues relating to motor vehicles from the design stage to the in-use stage. It also actively conducts tests and research, as well as makes suggestions, as a central core in studies to help the government develop land transport-related regulations or standards, while providing technological support to the government's international standardization activities based on fair and impartial data and findings.

Positioning of our organization in Terms of the National Goals and Policies



Organization and Operations of NALTEC

< Organization >



The Role of National Traffic Safety

◆ Research on environmental issues

From the viewpoint of solving various environmental issues and implementing sophisticated and complex technologies of vehicles into social transport systems smoothly, we are conducting research to improve testing methods and formulate regulations, thereby contributing to the prevention of pollution.

From the viewpoint of analyzing issues and proposing measures related to the prevention of global warming, reduction of environmental impact, promotion of energy conservation, diversification of energy sources, etc., we are conducting research that contributes to environmentally friendly transportation systems and reduction of environmental impact, such as the sophistication of fuel efficiency regulations, as well as the sophistication of methods for evaluating hazardous substance emissions; and noise.



Environmental performance evaluation under low-temperature environment



Emission performance comparison of biodiesel fuel



Measurement of vehicle noise on public roads



Verification of battery performance



Portable emissions measurement systems (PEMS)

◆ Study automotive safety issues

We are researching test methods for evaluating the performance of various active safety technologies such as automated driving systems. Our research includes evaluating the actual effect of preventing pedestrian accidents by clarifying the operating conditions of an advanced emergency braking system with pedestrian detection.

We are also investigating driver behavior during automated driving and methods for assisting elderly drivers through various experiments on a test course and a driving simulator.

By analyzing traffic accident statistics, we classify types of traffic accidents that occur most frequently and explore measures to prevent them. In particular, we study methods for testing occupant protection in collisions between vehicles with large weight differences, such as between a heavy-duty truck and a kei car, which tend to cause serious injuries. We also study methods that help mitigate injury to children and elderly occupants, pedestrians, and cyclists upon collision.

The research results are reported to international conferences at the United Nations and used to help develop international regulations.



Driving simulator (cockpit)



Experiment of advanced emergency braking system



Driving simulator (exterior)



Collision experiment between a passenger vehicle and a cyclist

◆ Study transportation systems

To help ensure safe, secure, and stable operations for transportation systems such as railway and LRT (Light Rail Transit), the Department clarifies the causes of accidents, studies low cost and safer accident preventive measures, and conducts technical assessments of new systems and rolling stock, while promoting the use of public transportation, thus contributing to solving environmental issues.

Furthermore, works on general safety and environmental issues of land transportation, such as sustainable maintenance and revitalization of local transportation, safe and secure mobility of senior citizens and vulnerable road users, and technological coordination between motor vehicles and railways.



Test for sharing stops between trams and buses



Train operation safety evaluation simulator (driver's cab)



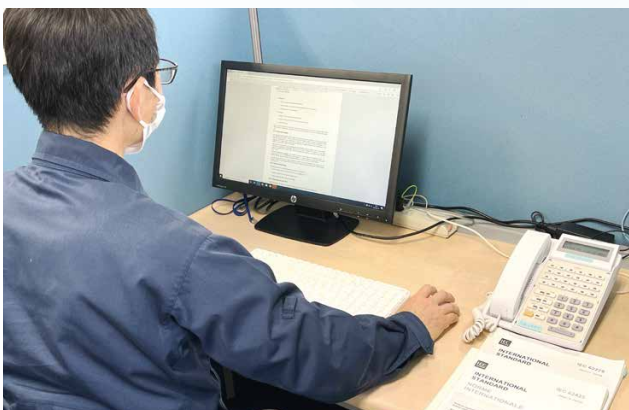
Bogie truck test plant

◆ Work on railway certification

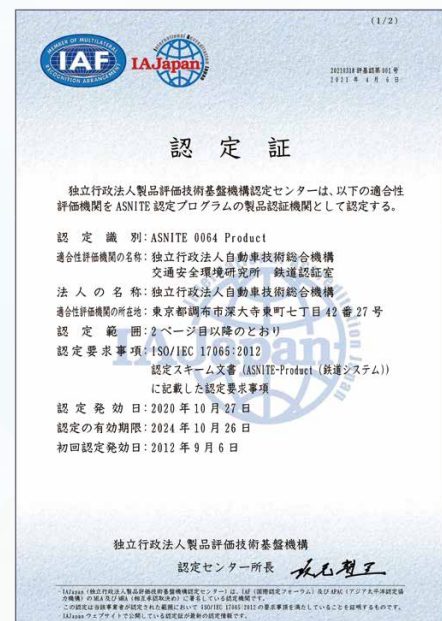
In 2012, the Railway Certification Center was accredited as the first Japanese certification body in railway sector for conformity with international standards.

The international standards with which the Department certifies the conformity are currently IEC 62278 (RAMS (Reliability, Availability, Maintainability and Safety)), IEC 62425 (Safety Case), IEC 62279 (Software) and IEC 62280 (Communication).

Through the certification activities based on ISO/IEC 17065 for conformity assessment, the Department contributes to international deployment of railway products and technologies.



Conformity Assessment



[Accreditation by IAJapan]

The Railway Certification Center is a product certification body accredited by International Accreditation Japan (IAJapan), National Institute of Technology and Evaluation, an Independent Administrative Institution.

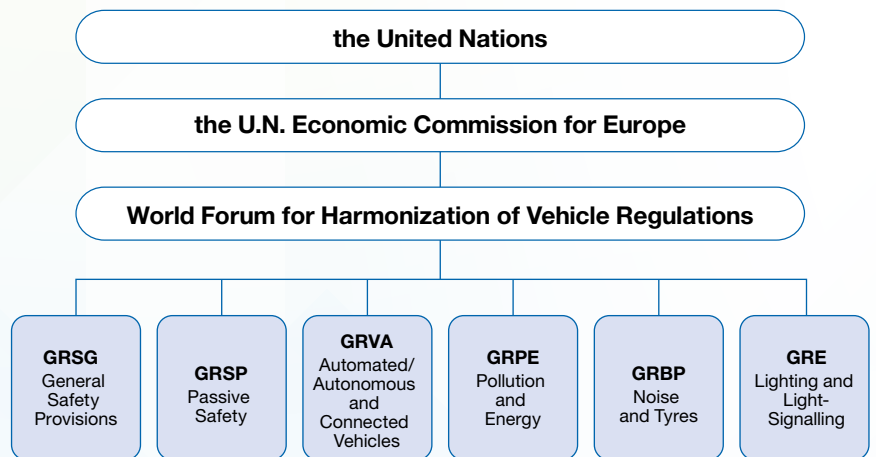
◆ Work on International harmonization of motor vehicle regulations

Efforts to internationally harmonize automobile technical regulations have been made by World Forum for Harmonization of Vehicle Regulations (WP.29) within the United Nations Economic Commission for Europe (UN-ECE). Japan has been actively working on the development and amendment of UN regulations and UN global technical regulations under the international agreements sponsored by UN-ECE/WP.29.

To support the Japanese government's efforts, experts of NTSEL participate in a variety of meetings organized under UN-ECE/WP.29 and actively proposes regulations and test procedures making best use of the results of its studies and type approval tests, and based on Japanese advanced automobile technology, thus contributing to promoting Japanese automobile technologies as part of international regulations.



United Nations office in Geneva



◆ Work on automated driving research

Automated driving technology is expected to not only improve safety but also help solve transportation problems in society, such as by reducing environmental impact and resolving labor shortages.

Our laboratory, which has expertise in both motor vehicles and railways, is working on various research projects for the utilization and spread of automated driving technology matching the characteristics of each means of transport.



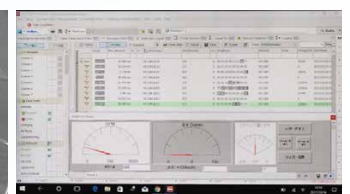
Evaluation experiments on automated vehicles' environment recognition performance in the rain



A train validating automated train operation technology

◆ Work on ICT studies

With the recent development of information and telecommunications technologies, vehicle systems have become highly digitalized. As such vehicles are spreading and the use of such functions is progressing, cybersecurity of vehicles has become a critical issue. We conduct broad research on a range of such cyber issues, from the aspects of both safety and the environment.



Vehicle communication testing

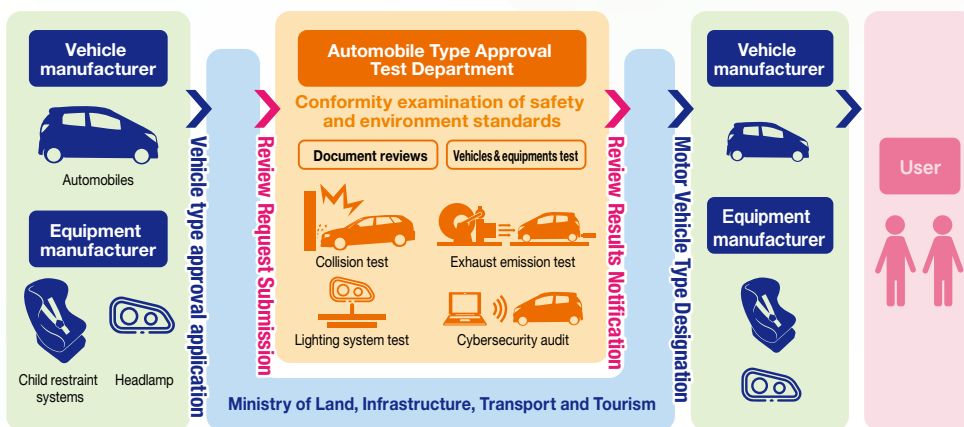
◆ Work on automobile type approval tests

The department is the only organization in Japan that certifies new vehicles' compliance with regulations under the Automobile Type Approval System.

Through the implementation of thorough type approval test, the department prevents the production and circulation of non-compliant vehicles, ensures public safety and security, and contributes to environmental preservation.

By improving its technological capabilities, the department actively responds to increasingly sophisticated and complex automotive technologies as well as to new international frameworks surrounding motor vehicles.

Type Designation System

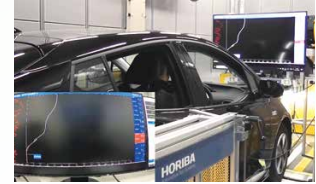


Principal tests

Collision test



Fuel consumption / exhaust gas measurement test (WLTC mode testing)



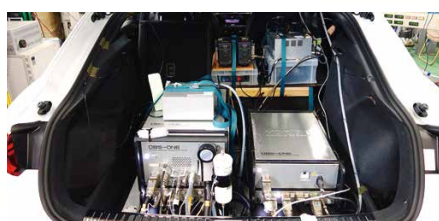
Brakes device test



◆ Work on recall-related technical verification

The Automobile Recall Technical Verification Department conducts technical verifications to check whether automobiles have any non-compliance with safety regulations due to design and manufacturing, and if a recall has already been carried out, whether the recall is appropriate. Thus, we contribute to the prompt and reliable implementation of recalls in order to ensure greater safety and security for automobile users.

Further, to respond to sophisticated and complex vehicle technologies as well as those defects, the Department develops its technical capabilities, coordinates with other organizations at home and abroad, and enhances its operations.



Portable Emissions Measurement System for Surveillance Work

Vehicle fire investigation



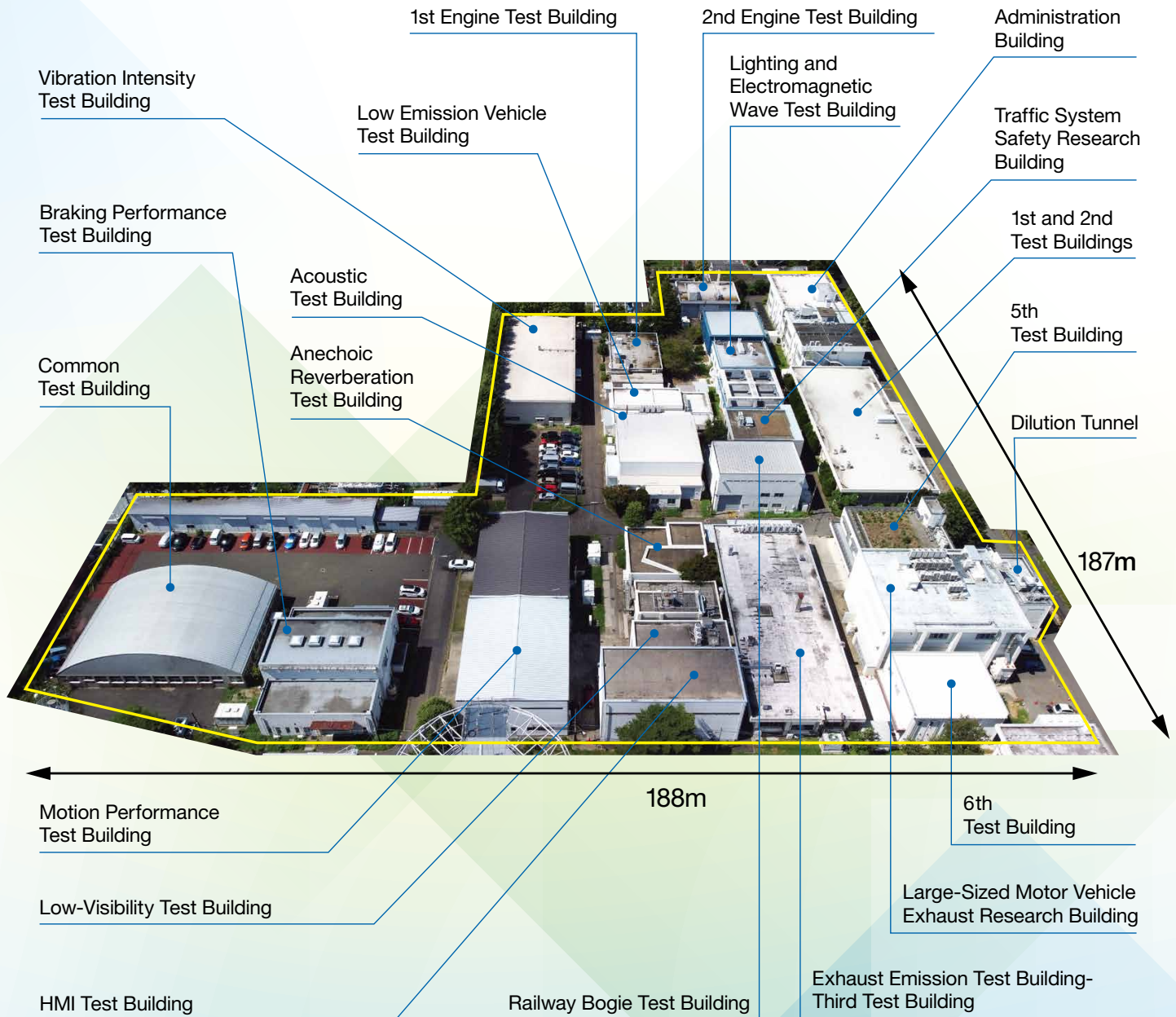
Fundamental experiment on vehicle fire when the electrical equipment of a passenger car is energized



Fire verification experiments

Main Facilities

Main Office and Facilities(Chofu City,Tokyo) / Total Land Area : 22,000m²



History

- April 1950** ● The Transportation Technical Research Institute was established as a general technical research organization of the Ministry of Transport.
- April 1963** ● The Transportation Technical Research Institute was reorganized as the Ship Research Institute.
- July 1970** ● Traffic Safety and Nuisance Research Institute was established by way of separation from the Ship Research Institute.
- January 2001** ● Due to realignment of central government agencies, the Traffic Safety and Nuisance Research Institute was placed under the control of the Ministry of Land, Infrastructure and Transport.
- April 2001** ● Inaugurated as the National Traffic Safety and Environment Laboratory(NTSEL), an Independent Administrative Institute.
- April 2016** ● NTSEL was integrated with NAVI, and NALTEC(National Agency for Automobile and Land Transport Technology) was established.

Transportation Guide



Access Map for National Traffic Safety and Environment Laboratory

◆Chofu Head Laboratory

42-27, Jindaiji-higashimachi 7-chome, Chofu, Tokyo 182-0012, Japan
Tel : +81-422-41-3207 Fax : +81-422-41-3233

[Public Transportation]

■ From the Park Exit of JR Kichijoji Station, take the Odakyu bus or Keio bus.

- No.3 boarding area, bound for Musashisakai Station South Exit
- No.4 boarding area, bound for Chofu Station North Exit
- No.8 boarding area, bound for Chofu Station North Exit

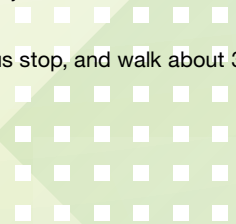
■ From the South Exit of JR Mitaka Station, take the Odakyu bus or Keio bus.

- No.3 boarding area, bound for Chofu Station North Exit
- No.7 boarding area, bound for Sengawa or Koka Gakuen Higashi
- No.8 boarding area, bound for Nogaya

■ From North Exit of Keio Line Chofu Station, take the Odakyu bus or Keio bus.

- No.11 boarding area, bound for Kichijoji Station or Mitaka Station
- No.12 boarding area, bound for Kichijoji Station.

Get off at the 'Mitaka Nokyo Mae' bus stop, and walk about 300m southward to the front gate



◆Automobile Proving Ground

1-1, Miizugahara, Kumagaya, Saitama 360-0844, Japan
Tel : +81-48-533-6811 Fax : +81-48-533-5534

[Access by car (No public transportation available.)]

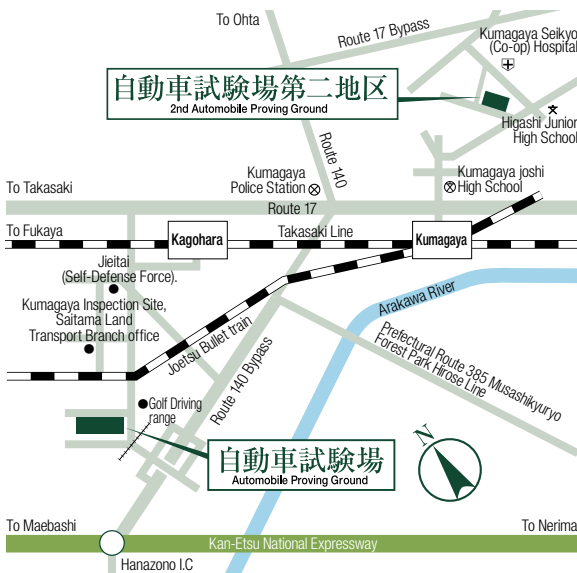
- About 4km from Kagohara Station of JR Takasaki Line
- About 8km from Hanazono Interchange of Kan-Etsu Expressway
About 4km from Jieitai (Self-Defense Force) Entrance Intersection on National Route 17

◆2nd Automobile Proving Ground

2959-22, Kamino, Kumagaya, Saitama 360-0012, Japan
Tel : +81-48-527-7157 Fax : +81-48-527-7159

[Access by car (No public transportation available.)]

- About 3km from Kumagaya Station of JR Takasaki Line



National Agency for Automobile and Land Transport Technology

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<https://www.naltec.go.jp/english/>



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