Promotion Policy on Automated Driving Systems and Introduction of Autonomous Vehicle Project in Japan

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Contents

• Target of Automated Driving in Japan
• FOT of Automated Vehicles in Japan
• Introduction of one FOT project supported by METI and MLIT
Automated driving system is aiming…

1. To realize a safe and smooth road traffic society
2. To create a new mobility service
3. To revitalize regional community and economy
4. To strengthen international competitiveness of the auto industry
Target to achieve for automated driving

~FY2020

- Automated driving on expressways
- Unmanned autonomous driving transport system in limited areas

✓ Image diagram
✓ Currently under consideration

FY2022~

Truck platooning on expressways

Currently under consideration
Challenges to achieve goals

1. Research and development
   - Dynamic map, etc.

2. Field Operational Test (FOT)

3. Charter for Improvement of legal system and environment for automated driving systems
According to a survey conducted by the IT Office. Not necessarily exhaustively stated

Automated driving services at roadside stations and other sites (MLIT, Cabinet Office)

1～13

Social implementation of terminal traffic systems (METI, MLIT)

1～4

National strategic special zone project (Cabinet Office)

1～4

Truck platooning (METI, MLIT)

1

Independently by a local government, private-sector actor, or university

1～12
Charter for Improvement of legal system and environment for automated driving systems
(decided in the IT Headquarters on April 17th, 2018)

- **Setting Conditions of driving environment**
  - To set conditions of driving environment (limited speed, route, time, etc.) to secure safety of automated driving

Secure safety (Human driver, Technology, Infra)
Establishment of Safety standard for automated driving vehicles

(Japan is leading the discussion to formulate international standards of automated vehicle safety)

- To establish vehicle safety requirements etc. as guideline by this summer
- To establish safety standard for automated driving vehicles
■ Improvement of traffic rules

- (Japan is leading the international discussion of traffic rules for automated driving)
- To improve domestic traffic rules based on the progress of technology development and international discussion
- To consider necessary measures in order to make automated driving systems observe traffic rules
- For the time being, unmanned autonomous driving transport system can be commercialized to utilize the current FOT framework
Major action

Liability issues

- To relief victims rapidly using compulsory automobile liability insurance when an accident occurs
- To consider of criminal liability
- To consider obligation to install of driving record devices
Automated driving Field Operational Test (FOT)

According to a survey conducted by the IT Office. Not necessarily exhaustively stated

- Social implementation of terminal traffic systems (METI, MLIT)
  - Independently by a local government, private-sector actor, or university

Automated driving services at roadside stations and other sites (MLIT, Cabinet Office)
First/Last Mile Project

- Service Image and Electric Vehicle -

1) Users (elderly, etc.) call automated driving vehicles and get on board

2) Automated driving

3) Users get off at a stop near the destination

4) Autonomous forwarding

Nearest station etc.

Final Destination (Near home etc.)

“Smart E Cart”
Small EV

Small Electric Vehicle (EV) with autonomous function

Advantage
- Available where no gas station in rural area
- EV can be charged during waiting time
- Easy and high efficiency at low speed
- Useful inside building

Disadvantage
- Range anxiety (depending on conditions)
Objective

• Social implementation of new transportation system for public use by a small EV

Automated driving technology for first/last mile mobility

– Support for short distances between transportation hub (railway, bus, etc.) and home, or final destination or in areas
– Reduction of labor costs and Drivers shortage issue
– Demonstrating transportation service of the last mile automated driving at the level 4 (SAE J3016) and a remote type automated driving systems (remote control operator and dispatcher)

• Sponsor: Ministry of Economy, Trade and Industry (METI) and Ministry of Land, Infrastructure, Transport and Tourism (MLIT)

  – 3 years from 2016FY, approximately 400 million yen per year.
    (Partly excludes development cost of automated bus)

  – AIST is conducting with companies and university.
Key points of project

• Establishment of automated driving technology
  – Demonstration of automated driving, safety and reliability of remote operation in real environment

• Clarification of business model (business feasibility)
  – Demonstrating the feasibility of service business and the way of continuity in the real regional model

• Establishment of social system
  – Discussion on institutional approach of technology and business aspects with relevant ministries, demonstration of infrastructure development

• Establishment of public acceptance
  – Demonstration for the high utility value and user acceptance for the stakeholders in the actual area
Technology development of smart E cart

Focus on application of technologies and operations with high safety, reliability, business viability, and continuity suitable for installation region (YouTube “Smart e-cart”)

Coverage of First/Last Mile Mobility System

Efficient operation by management system

Snow and indoor by electromagnetic induction line

Obstacle detection and safe stop

Avoid obstacles by remote monitoring / steering system
Demonstration areas (FOT areas)

- Public offering for demonstration areas and selected 3 areas from 23 municipalities

“Small electric cart”

- 3 regional models
- 4 key points verified by field operation test

Eiheiji-cho, Fukui-Pref.: Depopulated area model
Wajima-city, Ishikawa-Pref.: City area model
Chatan-cho, Okinawa-Pref.: Sightseeing area model
First Trial in Japan Automated Vehicle without Safety Drivers on Public Road (Remote type Automated Driving System)