



Government initiatives to realize automated driving in Japan

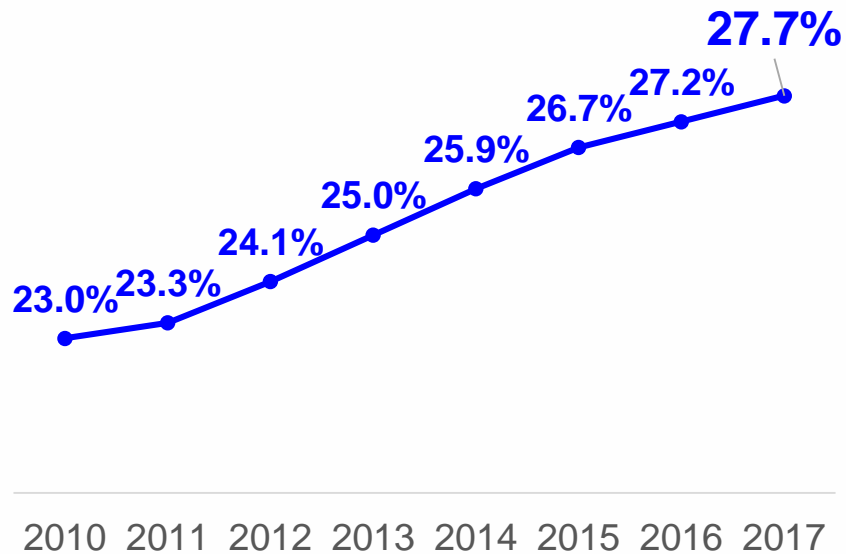
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Background

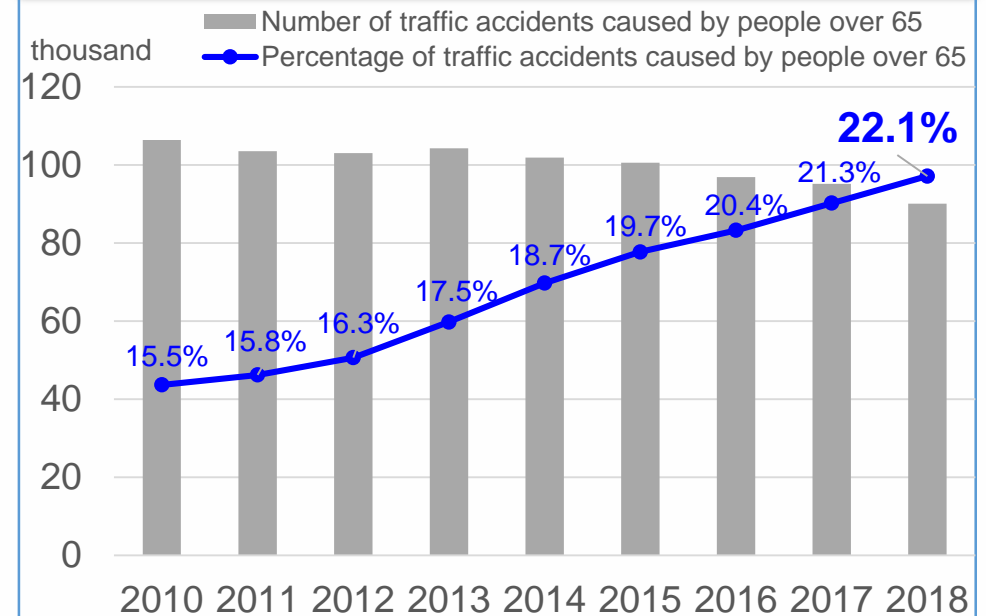
Problems such as aging population, increase in the rate of accidents caused by the elderly, and drivers shortages are getting serious in current road traffic in Japan.

Percentage of elderly people over 65 years old in Japan



Source: Statistics Bureau, Ministry of Internal Affairs and Communications "Japan's elderly people (65 years and over) based on statistics" (FY2017)

Number of traffic accidents caused by elderly drivers over 65 years old in Japan



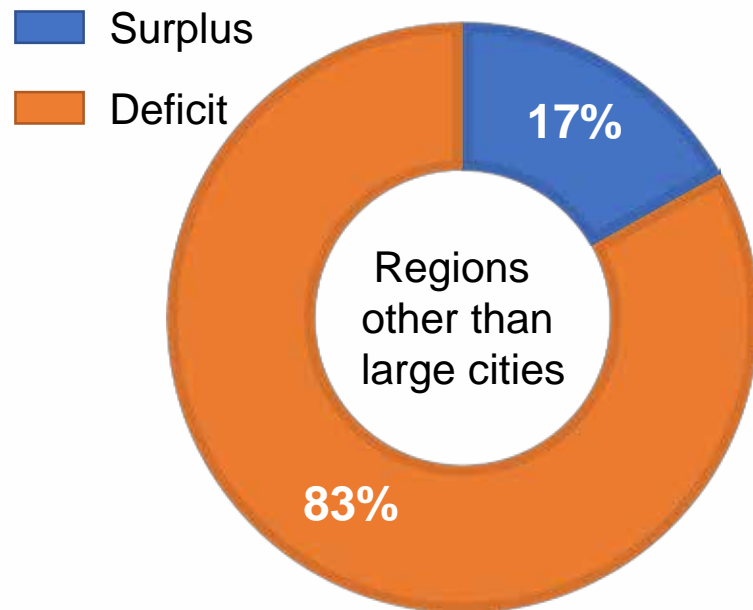
source: National Police Agency "Occurrence of traffic accidents" (FY2018)

Background

- Revenue status of shared bus in small cities is serious.
- Getting harder to find shared bus driver.

Income and expenditure status of shared bus

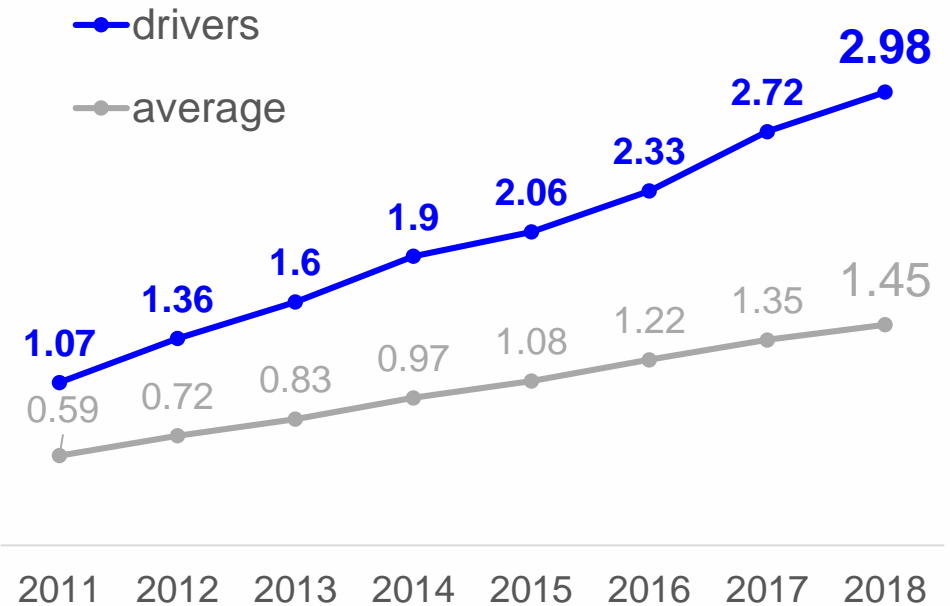
in Japan



Resorce: Japan Bus Association 'Overview of Japanese bus business and Japan Bus Association', - Shared bus balance status (FY2015)

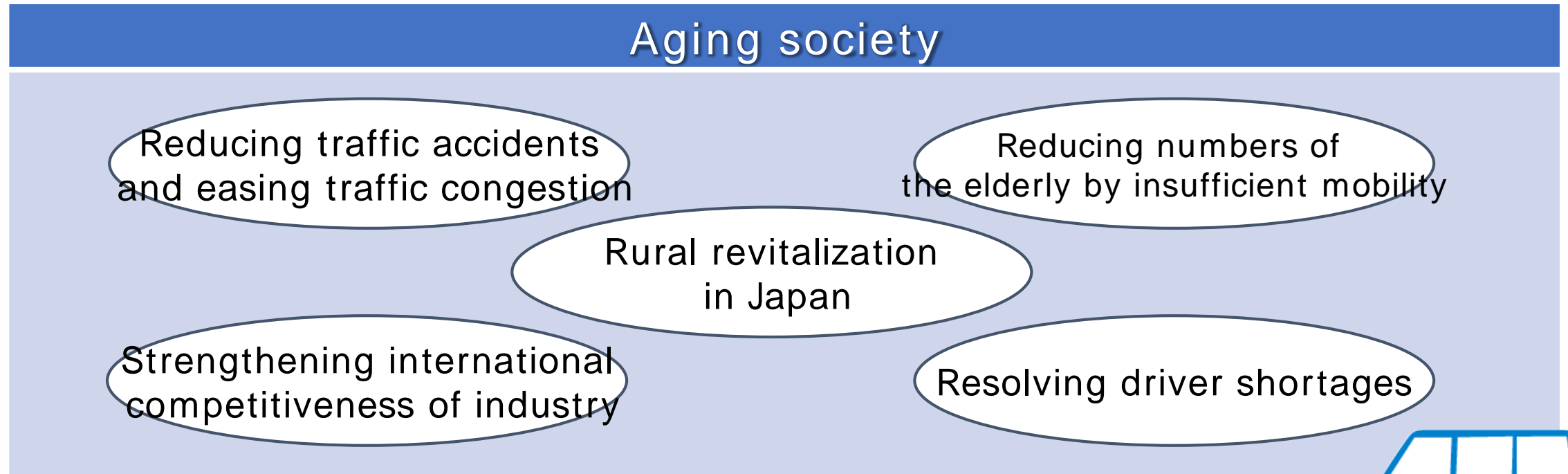
Changes in the ratio of active job offers

in Japan



Resorce: Ministry of Health, Labor and Welfare 'General employment status,

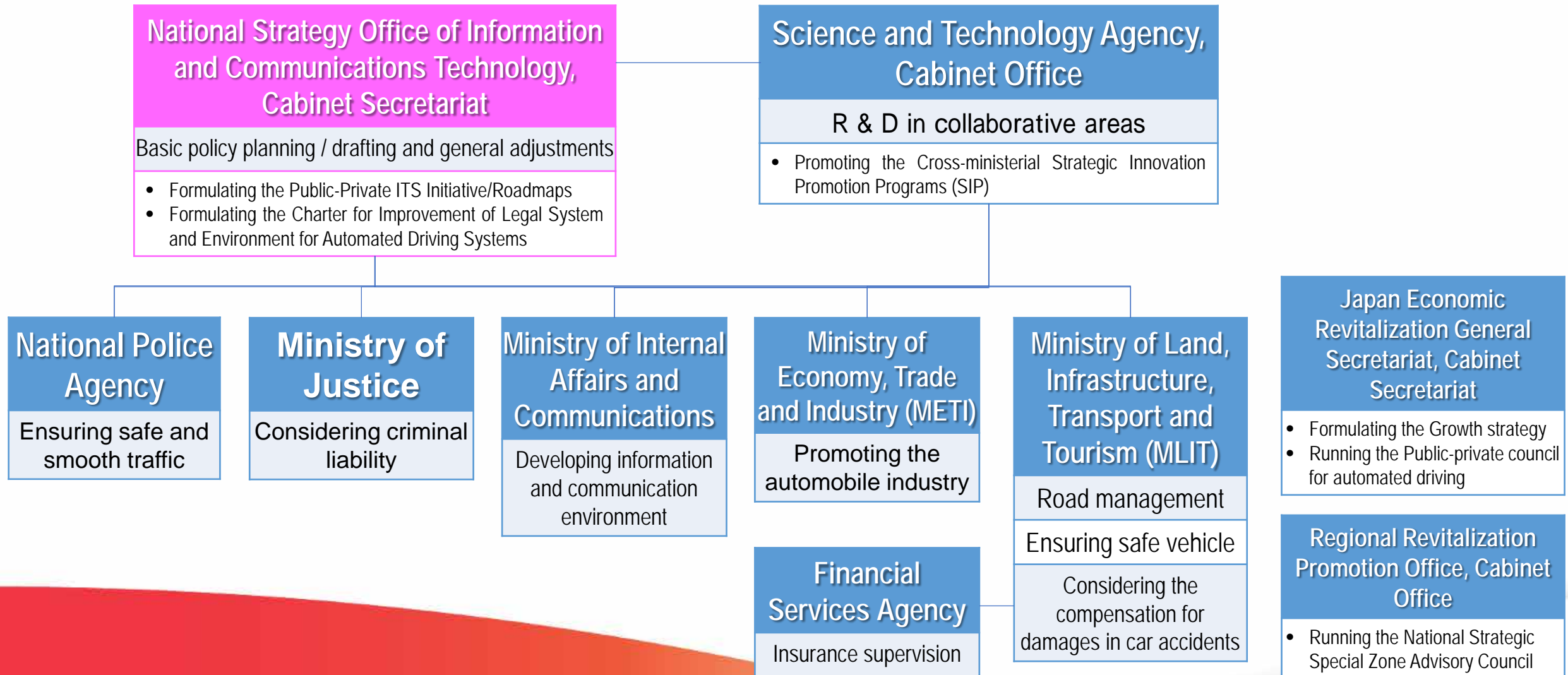
Social expectations for automated driving



Automated driving will make a “transportation revolution” by providing support of new modes of mobility and logistics, by which realize “affluent lives” by solving social issues.



Roles of ministries about automated driving



Digest of the Public-Private ITS Initiative/Roadmaps 2019

The Public-Private ITS Initiative/Roadmaps has been updated annually since 2014 when it was formulated by IT Strategic Headquarters, based on environmental changes in ITS and automated driving systems.

2020

2022 ~

Automated Driving on expressways



Driverless autonomous driving transport service In specified areas



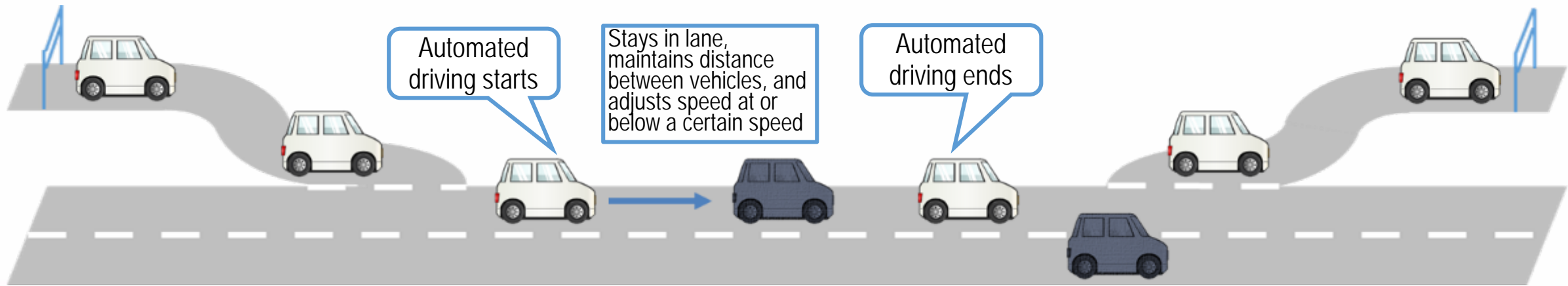
Track platooning on expressways



Vision of automated driving in 2020: Level 3 on expressways

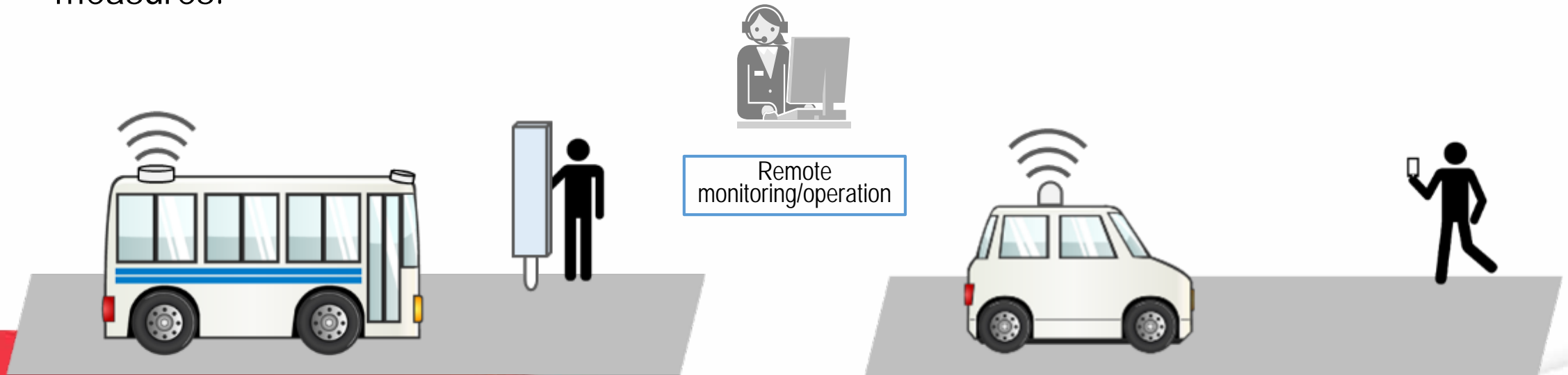
n Automated driving on expressways (Level 3)

- ∅ Automated driving on a main roadway
- ∅ Staying in lane, maintaining distance between vehicles, and adjusting speed, at or below setting speeds
- ∅ Automated driving on a main roadway end to exit



Vision of automated driving in 2020: Automated-driving transportation service

- n Automated-driving transportation service utilizing the Field Operational Test framework
 - ∅ Relatively simple limited domain (ODD : Operational Design Domain)
 - ∅ Remote monitoring and operation of one or multiple units by one person
 - ∅ When the ODD is exceeded, operation of the vehicle stops swiftly and the remote monitoring, controlling party, service provider inside the vehicle, or another party implements necessary measures.

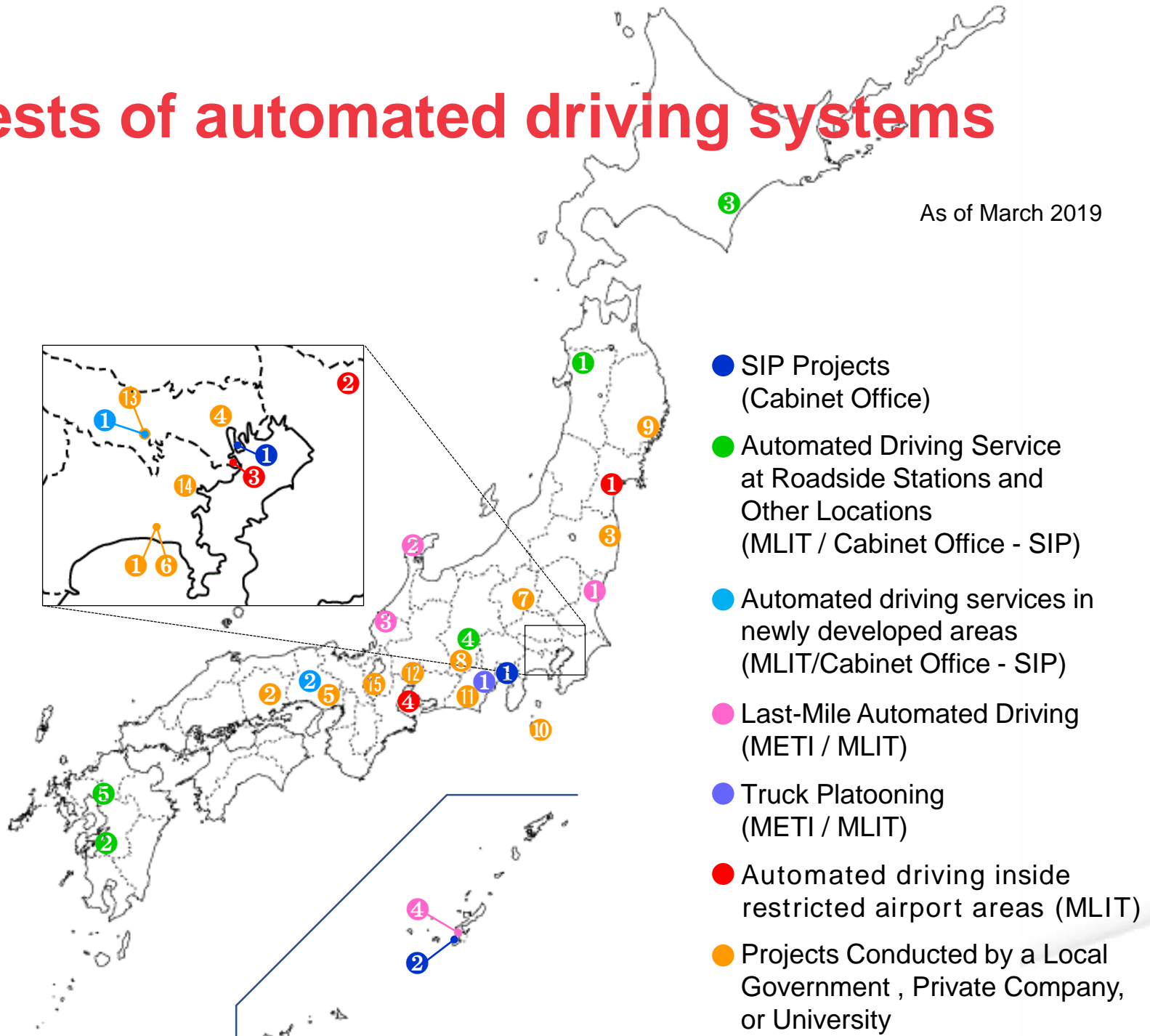


Field operational tests of automated driving systems (After FY2018)

As of March 2019

n Main verification items

- ∅ Verify vehicle performance
- ∅ Verify the impact of weather conditions on vehicle performance
- ∅ Verify issues concerning technologies comprising automated driving
- ∅ Verifying the configuration, maintenance, and management of roads and surrounding facilities
- ∅ Verifying service contents
- ∅ Verifying service operations
- ∅ Verifying social receptivity



Progress based on Charter for Improvement of Legal System and Environment for Automated Driving Systems

n To review the legal system necessary for the realization of automated driving, "Charter for Improvement of Legal System and Environment for Automated Driving Systems" was formulated in April 2018.

Main action items

- ∅ Securing the safety of vehicles
- ∅ Traffic rules
- ∅ Securing safety on an integrated basis (setting of driving environments conditions)
- ∅ Liability for the accident

n Each ministries and agencies have proceeded with examinations, and had following progress, including legal revisions since the formulation of the Charter.

Main progress

- ∅ "Safety-technology guidelines for automated-driving vehicles" were formulated and announced in September 2018.
- ∅ Partial revision to "the Road Transport Vehicle Act" to ensure safety uniformly from the design and manufacturing processes through the use processes of automated driving vehicles and other vehicles passed in ordinary session of the Diet.
- ∅ Partial revision to the Road Traffic Act to develop provisions related to driver obligations in response to practical implementation of automated driving technologies passed in ordinary session of the Diet.
- ∅ The existing concept that a person that puts an automobile into operational use is liable to compensate for damage arising from the operation of the automobile if this results in the death or bodily injury of another person in Act on Securing Compensation for Automobile

The background features three stylized trees with canopies that resemble complex network graphs. The trees are rendered in a light red color against a darker red background. The canopies are composed of numerous interconnected lines, suggesting a network structure. The trees are positioned on the left, center, and right sides of the frame, with the central one being smaller than the two flanking it.

Smart Mobility, Empowering Cities