# Integrated Approach to Reduce Traffic Fatality and Injury

November 18, 2014

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# Contents

# Traffic Accident Trends and Significance of UTMS

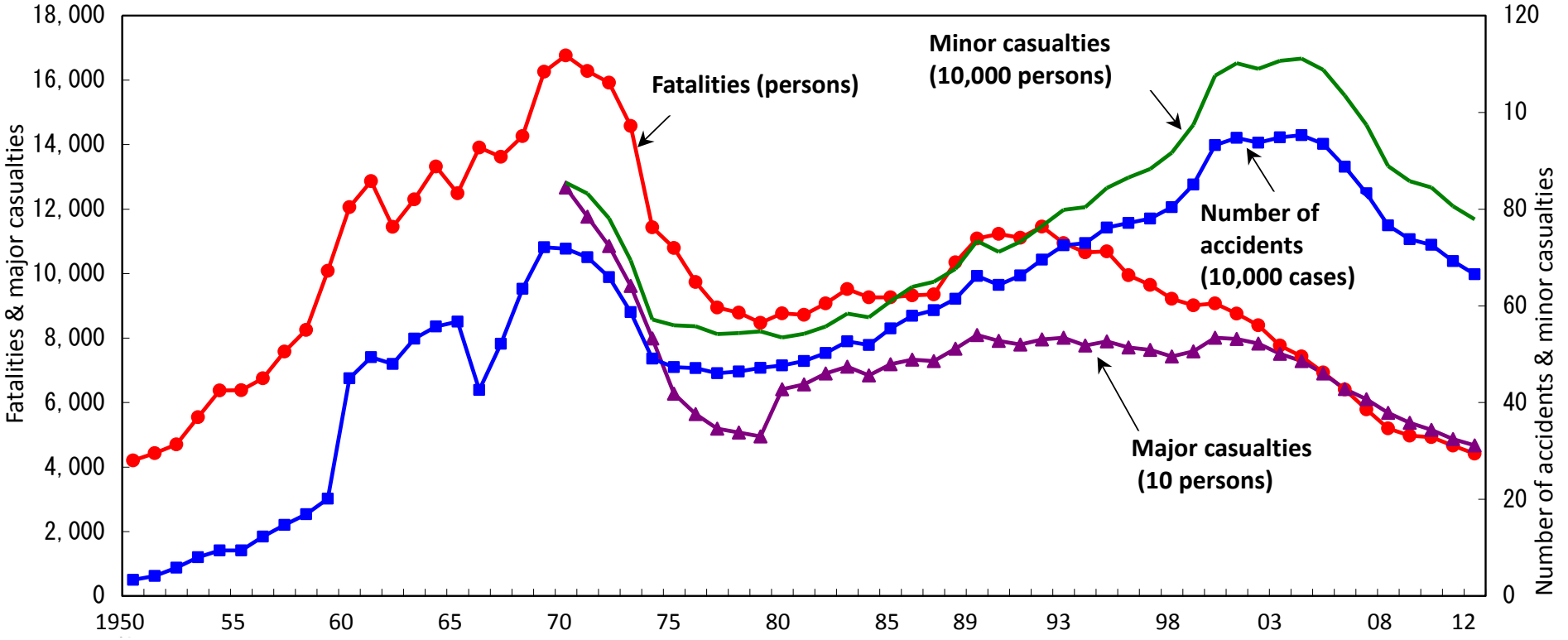
# Traffic Accident Trend

**(2013)**

- **Traffic Accidents:** 629, 021(−5. 4%)
- **Fatalities within 24hrs:** 4, 373(−0. 9%)
- **Casualties:** 781, 494(−5. 3%)

## Trend in numbers of traffic accidents, fatalities, and casualties

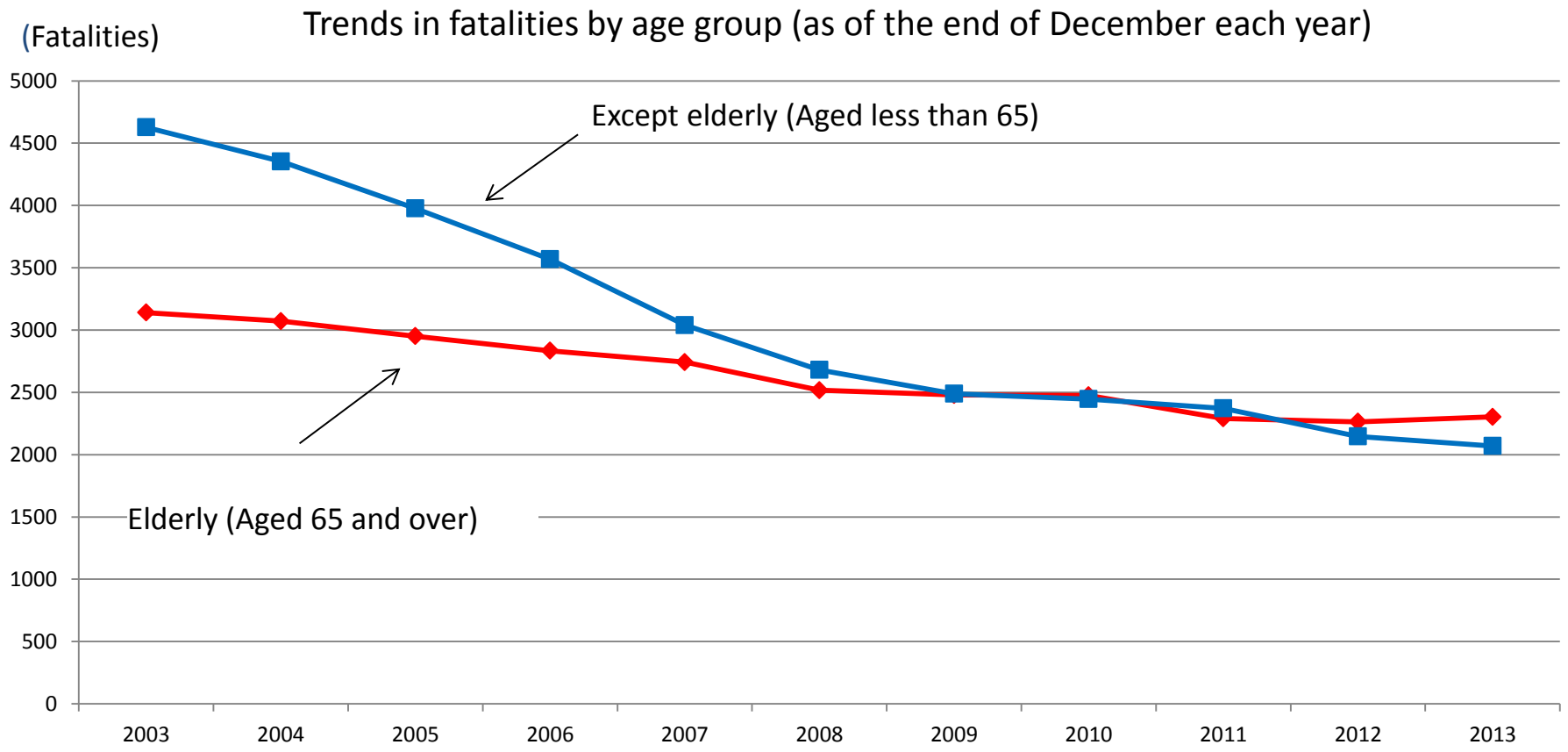
(as of the end of December each year)



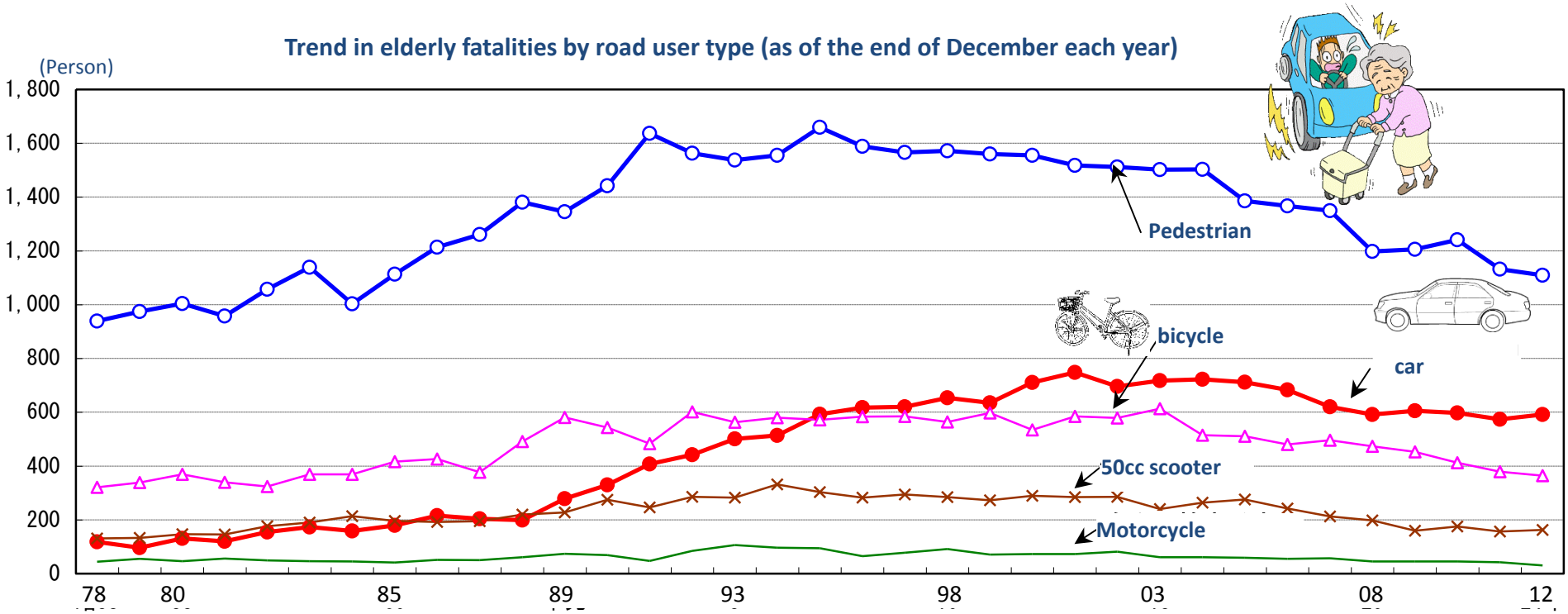

Note: 1. Until 1959, minor accidents (short term injury less than 8 days; property damage equal to or up to 20,000 yen) were not included
2 The number of accidents until 1965 includes traffic accidents resulting in property damage.
3. Until 1971, Okinawa prefecture was not included.

# Trend in Fatalities by Age Group

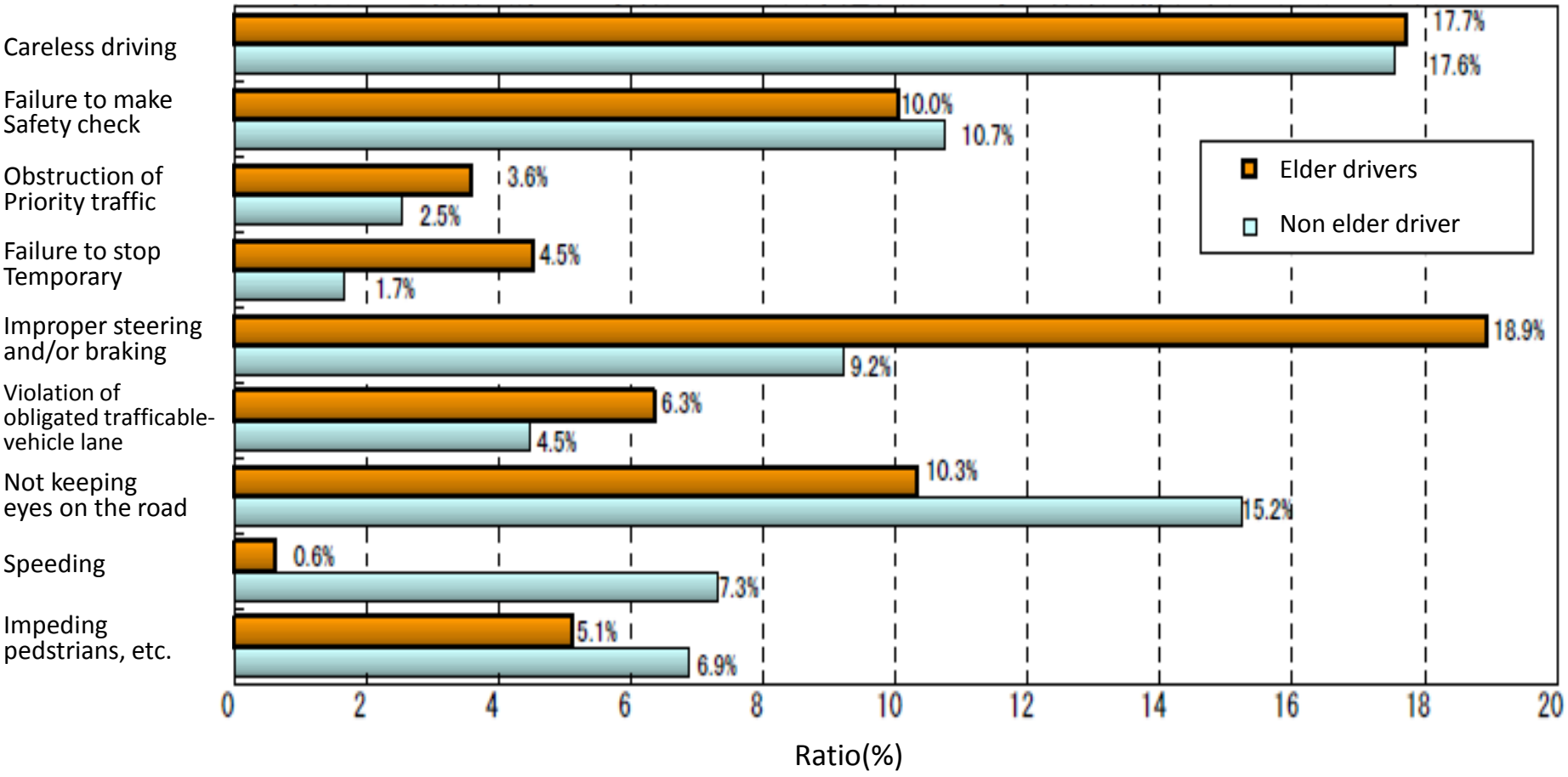
The ratio of the elderly to the total reached 52.7% in 2013.



# Trend in Elderly Fatalities by Road User Type



# Type of Traffic Violations of Elder Drivers and Non-Elder Drivers Caused Traffic Accidents with Fatalities in2013(ratio)



# Government Target of the Number of Fatalities Originating in Traffic Accidents (January 2, 2009)

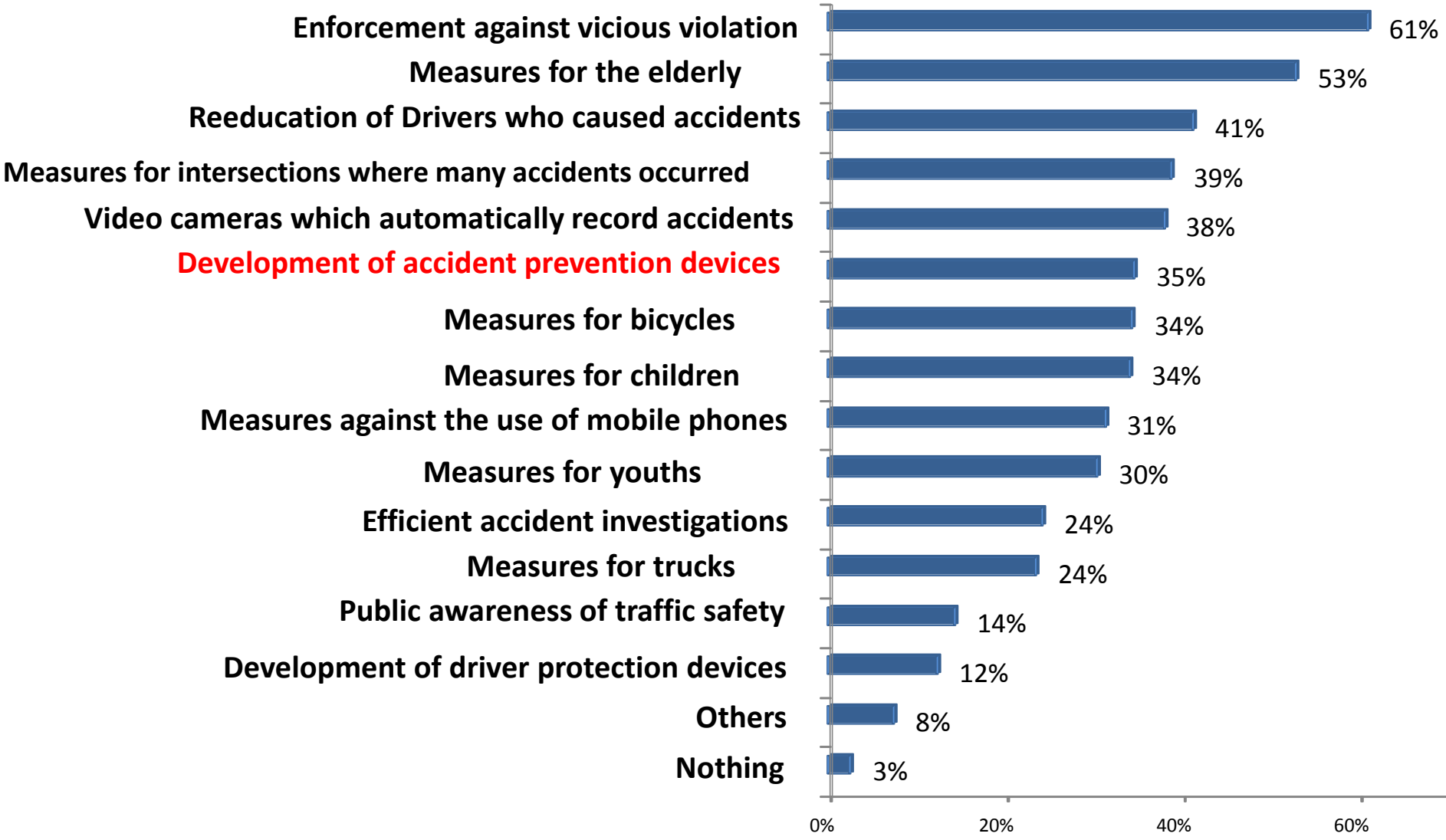
The government has declared a target of the number of fatalities originating in traffic accidents needing to be reduced by half, i.e. to below 5,000, in ten years starting in 2003. Its realization is near at hand.

However, it would still appear serious that so many people have still died in traffic accidents.

A new year has arrived and I determined to further reduce the number of fatalities originating in traffic accidents by half in about ten years from now.

# Requests for Traffic Accident Prevention by the Bereaved

"Accident prevention devices" is the 6th highest request from the bereaved.

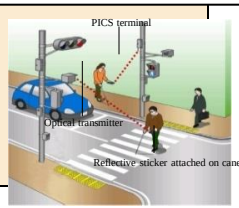


# New Development of UTMS

# New Development of UTMS (Universal Traffic Management Systems)

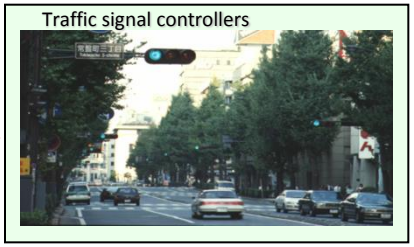
**PICS**

Pedestrian Information and Communication Systems




**Deployment:**
**36 prefectures**

**ITCS** Integrated Traffic Control System

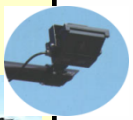



**PTPS**

Public Transportation Priority Systems

**Deployment:**
**40 prefectures**

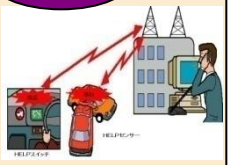
**Infrared Beacons**



**Deployment: across the country**

**HELP**

Help System for Emergency Life Saving and Public Safety



**AMIS**

Advanced Mobile Information Systems

**Deployment:**
**across the country**

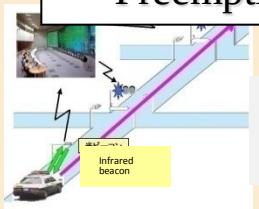
**EPMS**

**Deployment: 3 prefectures**

Environmental Protection Management Systems

**FAST**

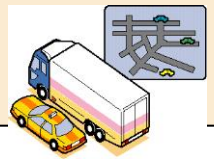
Fast Emergency Vehicle Preemption Systems




**Deployment:**
**15 prefectures**

**MOCS**

Mobile Operation Control Systems



**Deployment:**
**8 prefectures**

**DSSS**

Driving Safety Support Systems


**Deployment:**
**6 prefectures**

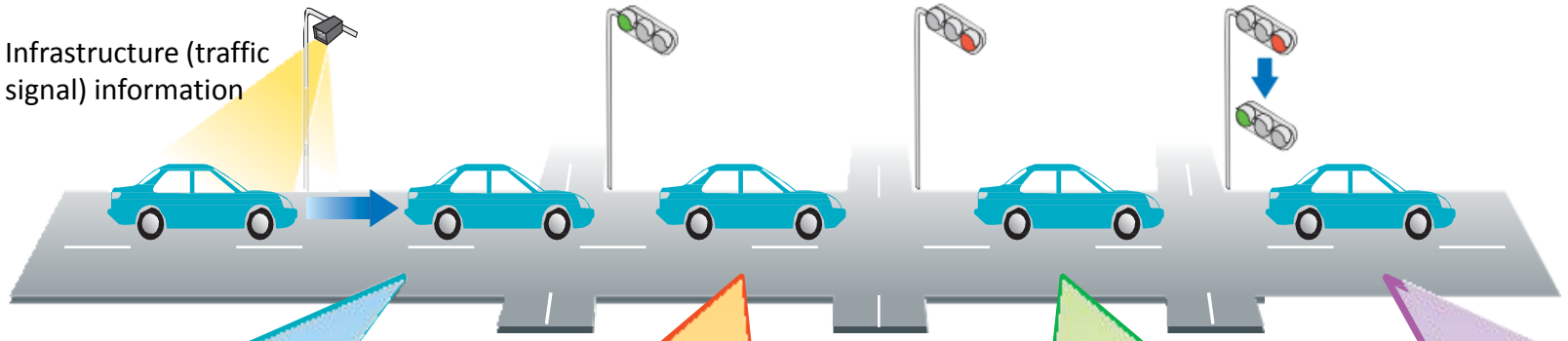
As of the end of FY2013

# Function of Signal Information Drive Systems

This system promotes safe driving with enough psychological comfort and economical driving to drivers, such as

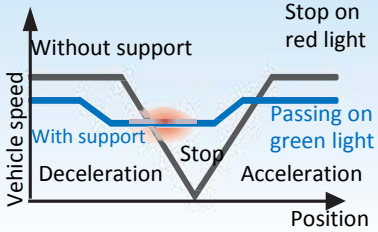
- decrease in vehicle stop at red signal
- early decelerating and gentle accelerating

And finally enables the reduction of traffic accidents and CO2 emissions from cars and optimizes traffic flow.



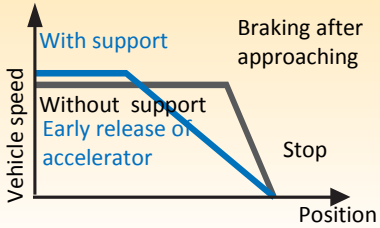

## Signal passing support

Indicates the range of recommended speed so that the vehicle can pass the next signal on green



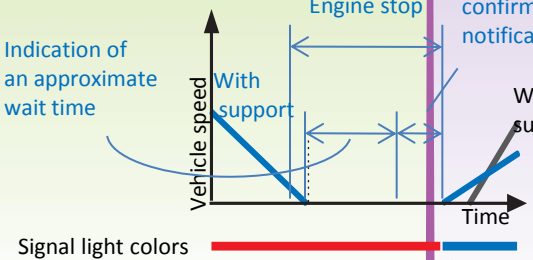

## Signal stopping support

Indicates early release of accelerator so that the vehicle can approach and stop at the intersection moderately.




## Idling stop support

Optimizes the length of engine stop according to the remaining time of the red signal.

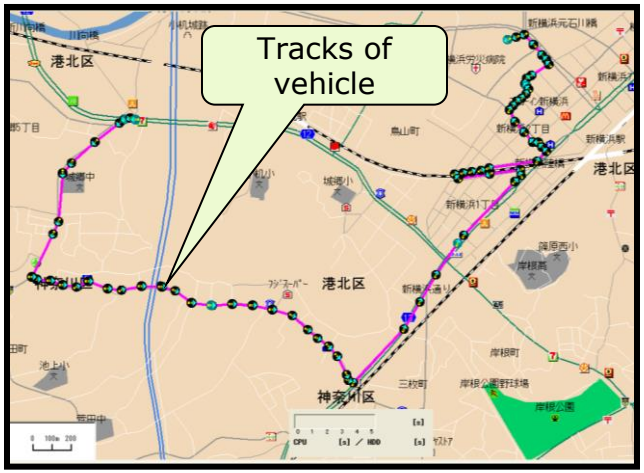



## Signal change starting support

Forward confirmation notification

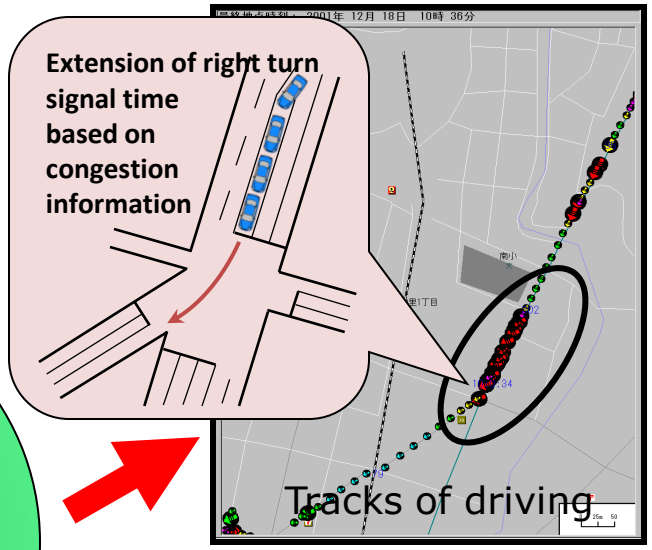
Indicates an approximate number of seconds left for the red signal so that the vehicle can start without delay.

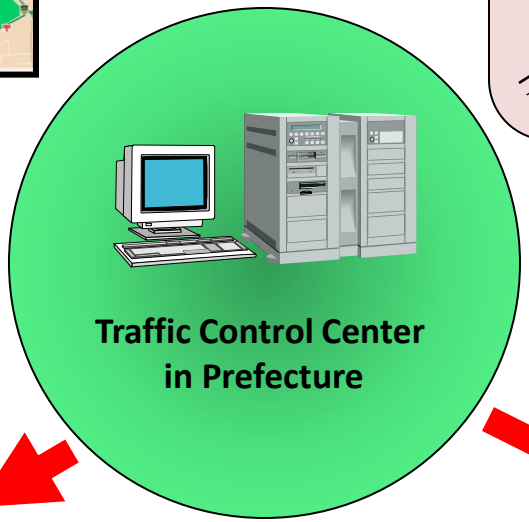
# Advanced Traffic Control System with Probe Data



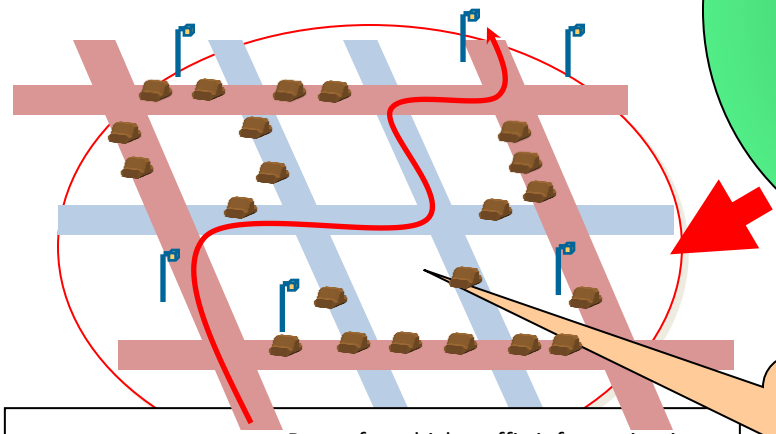

**Collection of probe information**

**Use for signal control**




**Offering congestion information in detail**



**Accurate selection of a route which is not congested**

**Use for management of vehicle operation**

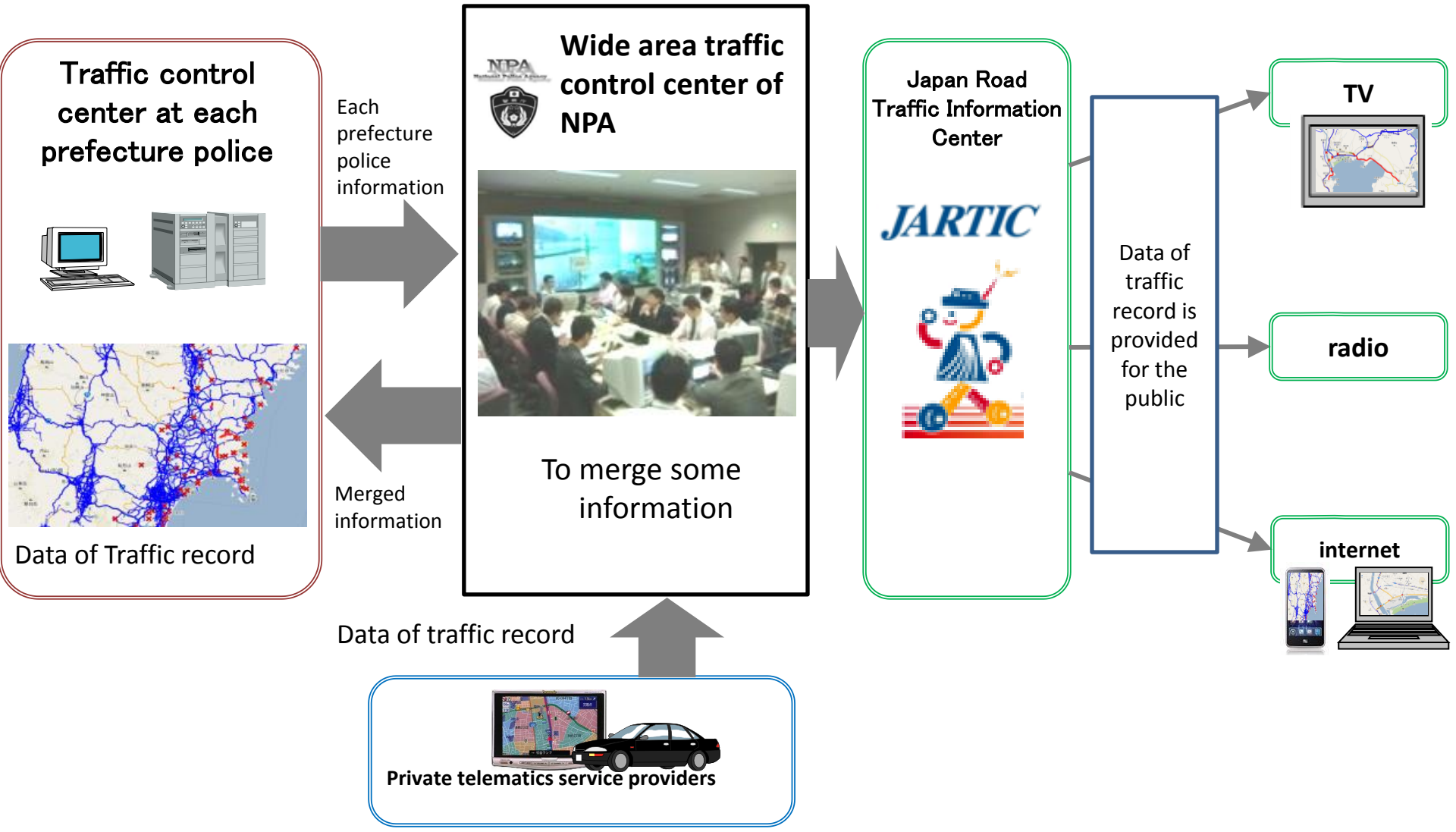
Infrared beacon

Route for which traffic information is collected by existing detectors

Route whose traffic information is newly collected according to probe information

# Preparation of the environment necessary for providing traffic information services in the event of disasters using probe information

- To grasp traffic situation in detail by merging the data of private sector into the data of police.
- To use the merged data for speedy police activities and to provide it to the people quickly



# R & D on Driving Safety Support Systems and Automated Driving Systems

# Japan Revitalization Strategy (June 14, 2013)

◎ A society where people and goods are provided with safe and convenient transportation

The government will promote safe and comfortable transportation of people and goods as a national project, by developing and building driving safety support devices and driving safety support systems utilizing inter-vehicle communication, road-to-vehicle communication, etc., self-driving system, traffic congestion prediction system and distribution system.

- Developing driving safety support and self-driving systems and creating environment
- Creating information service environment by big data relating to vehicles

# Organization for Promotion of ITS

**Japan Revitalization Strategy (June 14, 2013)**

Declaration to be the World's Most Advanced IT Nation (June 14, 2013)

Comprehensive Science Technology Innovation Strategy(June 7, 2013)

Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society
（Director-general：Prime Minister）

**Public-Private ITS Initiatives and Roadmap (June 3, 2014)**

Council for Science and Technology Policy
（Chairperson：Prime Minister）

**Four ITS related ministries**

**ITS Japan**

National Police Agency

UTMS Society
VICS Center
JARTIC

Ministry of Internal Affairs and Communications

Ministry of Economy, Trade and Industry

Ministry of Land, Infrastructure and Transport

**Cross-ministerial Strategic Innovation Promotion Program (SIP), Automated Driving Systems (May23, 2014)**

# Ref. Trend of Amendments of the Convention on Road Traffic (1968)

- WP. 1 of UNECE adopted proposal amendments of the Convention on Road Traffic (1968) as follows in March, 2014. These amendments were asked to all Contracting Parties by the Secretary-General of the United Nations.
- Amendments of the Convention on Road Traffic (1949) as same as the above amendments were proposed on WP. 1 in September 2014, and will be proposed and discussed again on next session in March, 2015.

## Amendments of the Convention on Road Traffic (1968) (extract)

Article 8：Drivers

1. Every moving vehicle or combination of vehicles shall have a driver.

5. Every driver shall at all times be able to control his vehicle or to guide his animals.

(a) Vehicle systems which influence the way vehicles are driven shall be deemed to be in conformity with the first sentence of this paragraph and with paragraph 1 of Article 13, when they are in conformity with the conditions of construction, fitting and utilization according to international legal instruments concerning wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles.

(b) Vehicle systems which influence the way vehicles are driven and are not in conformity with the aforementioned conditions of construction, fitting and utilization, shall be deemed to be in conformity with the first sentence of this paragraph and with paragraph 1 of Article 13, when such systems can be overridden or switched off by the driver.

Article 13： Speed and distance between vehicles

1. Every driver of a vehicle shall in all circumstances have his vehicle under control so as to be able to exercise due and proper care and to be at all times in a position to perform all manoeuvres required of him.

Ref. The Road Traffic Law in Japan

Article 70: Duties of safe driving

The driver of any vehicle shall firmly operate steering wheels, brakes and other devices of said vehicle and shall drive at such speed and in such way as may cause no injury to others, taking the conditions of the road, traffic and his vehicle, etc. into consideration.

# Public-Private ITS Initiatives and Roadmap (June 3, 2014)

| | | Function of vehicle | Expected time of commercialization |
|---|---|---|---|
| Informational | | No-automated driving | On the market |
| Automated | Level 1 | Specific function automated driving | On the market |
| | Level 2 | Combined function automated driving | Middle of 2010's～2017 |
| | Level 3 | Limited automated driving | First half of 2020's |
| | Level 4 | Full automated driving | On or after second half of 2020's (to be reconsidered in the future) |

# Cross-Ministerial Strategic Innovation Promotion Program (SIP) , Automated Driving Systems (May 23, 2014)

- Upgrading DSSS with signal and traffic regulation
- Upgrading DSSS with radio wave
- Developing PTPS and PICS for the Tokyo 2020 Olympics and Paralympics
- Organizing International Open Research Institute
- Estimating the effect of automated driving technologies on the decrease in fatalities

# Upgrading DSSS with Traffic Regulation

**Prefectural police**

Traffic regulation information document

Data

Stop

(330)


Closed to All Vehicles

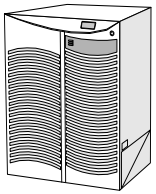
(302)

**To make a data base of traffic regulation information**

**Agent company**

**NPA**

Data accumulation equipment



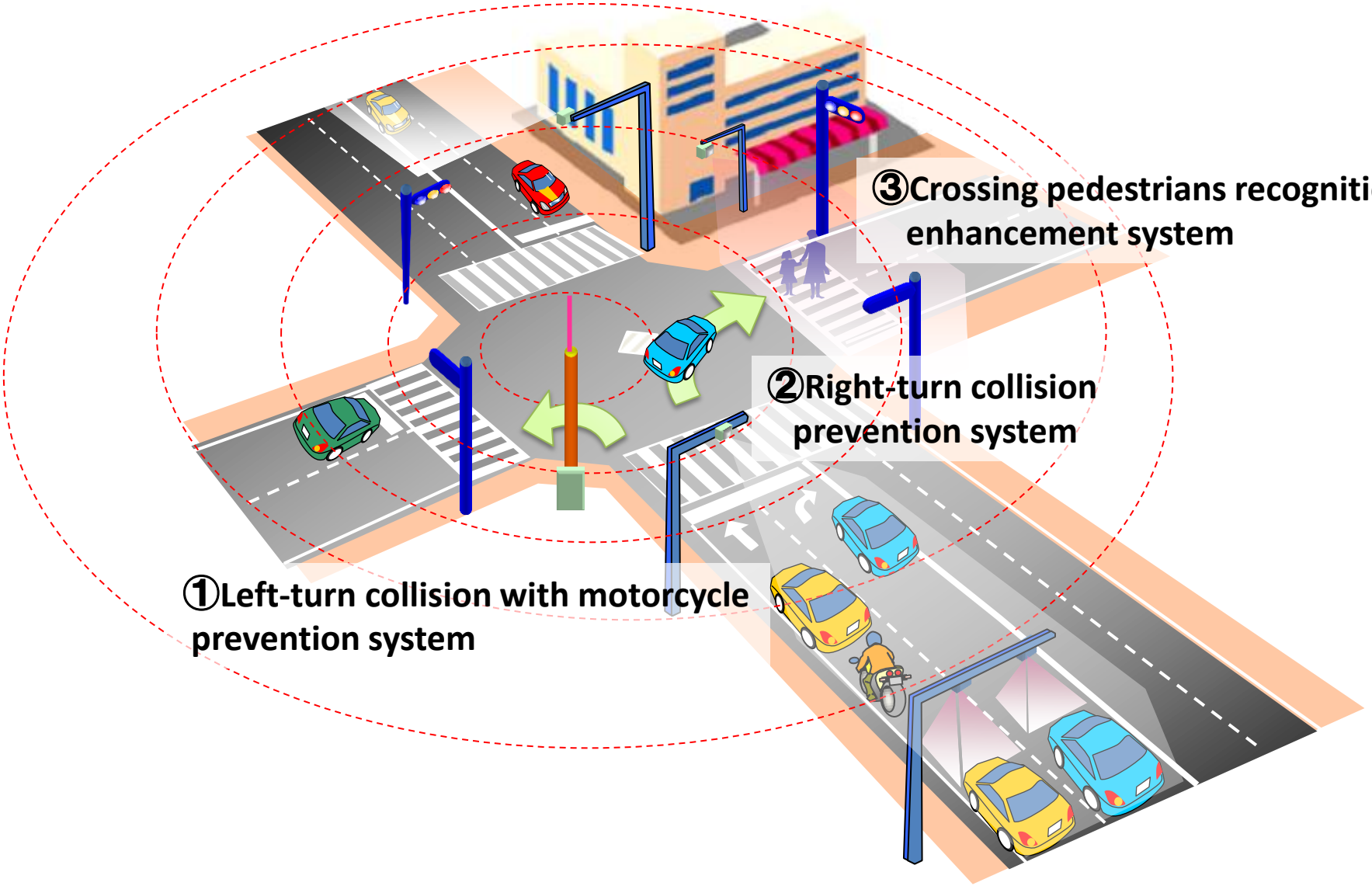
New traffic regulation information management system

Data

**Traffic regulation information**

**To control automatically**

# Upgrading DSSS with Radio Wave(700MHz)



# Developing PTPS and PICS for the Tokyo 2020 Olympics and Paralympics

**32nd Olympics**

July 24-August 9, 2020
17days, 28games

**16th Paralympics**

August 25-September 6, 2020
13days, 22games

**＊London 2012 participants**

Olympics 10,500 persons
Paralympics 4,310 persons

**＊Tokyo 2020 participants and guests (estimate)**

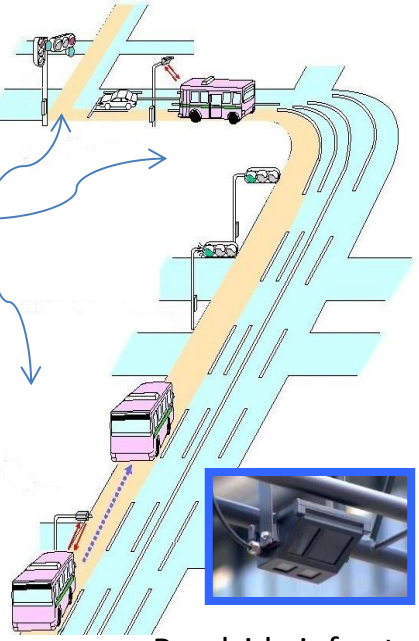
10 million people
max. 920,000 persons/day

# Developing PTPS for the Tokyo 2020 Olympics and Paralympics

**Objectives:** Ensuring safe and smooth operation of official vehicles involved
Promoting next generation transportation systems all over the country

## PTPS (Public Transportation Priority Systems)

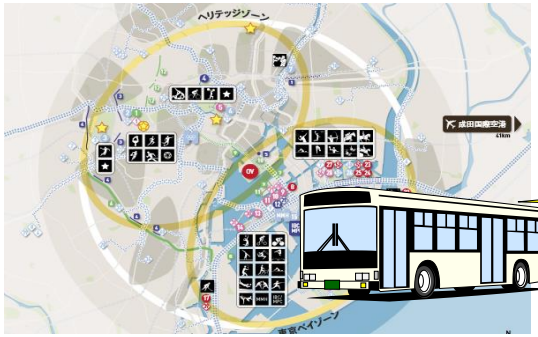
- Priority signal control for mass public transportation





Roadside infrastructure

## Next generation Transportation systems



**(SIP Working Group)**

- Case studies
- Research in needs

**(Tokyo government)**

- Olympics hosting plan
- Transportation policy

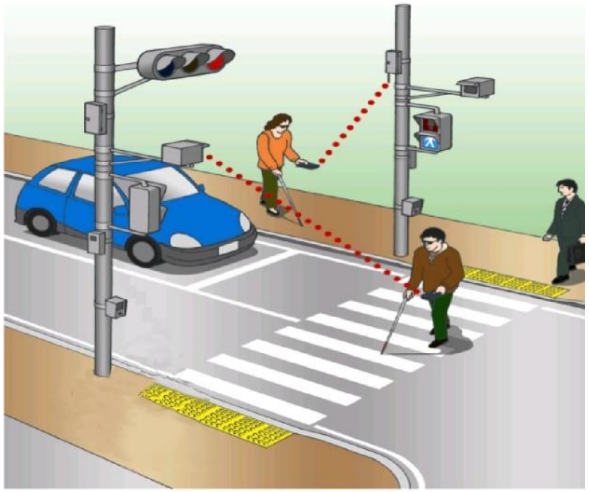
**( NPA )**

- R&D of new systems utilizing radio waves

# Developing PICS for the Tokyo 2020 Olympics and Paralympics

**Objectives:** Ensuring safe and smooth operation of official vehicles involved
Promoting next generation transportation systems all over the country

## PICS (Pedestrian Information and Communication Systems)



''The traffic light changed to green .''

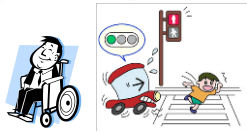
## Next generation Transportation systems

**(SIP Working Group)**
- Case studies
- Research in needs

**(Tokyo government)**
- Olympics host plan
- Transportation policy

**( NPA )**

- Field study of pedestrians
- Accident analysis of the disabled



- R&D of new Systems utilizing radio waves

# Thank you for your kind attention.

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