

# **SIP-adus Update**

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**June 19, 2017**

**Takahiko Uchimura**

**SIP-adus International Cooperation WG**

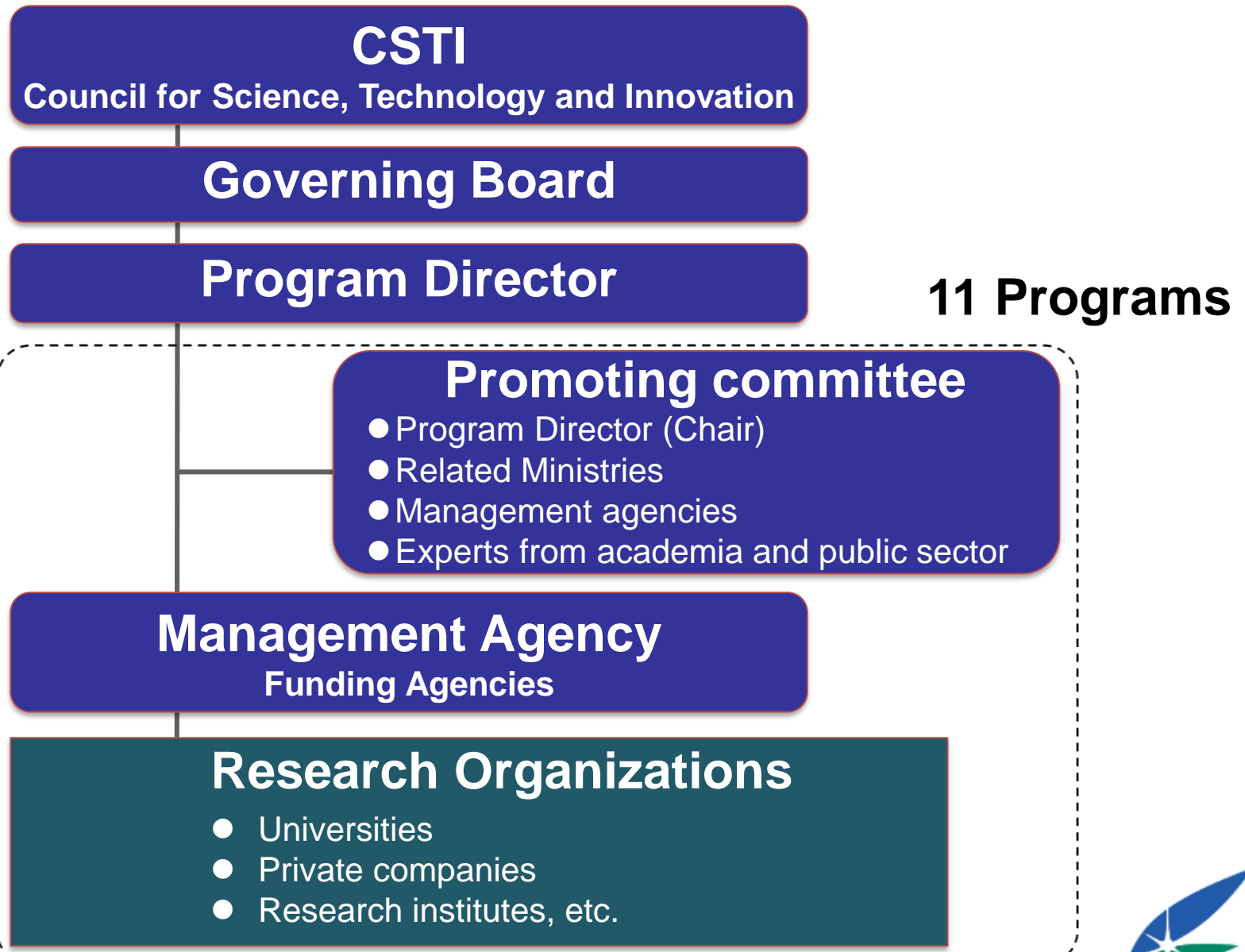


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# Cross-Ministerial Strategic Innovation Promotion Program

## ■ SIP Structure



# SIP- adus

## ■ SIP

➤ Cross-Ministerial **S**trategic **I**nnovation Promotion **P**rogram

## ■ SIP-adus: One of eleven SIP projects

➤ Innovation of **A**utomated **D**riving for **U**niversal **S**ervices

# “SIP- adus”

## - Mobility Bringing Everyone a Smile -



*SIP-adus*

*Innovation of Automated Driving for Universal Services*

<http://en.sip-adus.jp/>

# Development Structure

## ■ Three WGs under SIP-adus



# Government Structure

## ■ Governments structures for SIP-adus

**Cabinet Secretariat**  
IT Strategic Headquarters

**Cabinet Office**  
Council for Science,  
Technology and Innovation

**National Police  
Agency  
(NPA)**

**Road Traffic  
Safety**

**Ministry of  
Internal Affairs  
and  
Communications  
(MIC)**

**Communication  
Technology**

**Ministry of  
Economy, Trade  
and Industry  
(METI)**

**Economy and  
Industry**

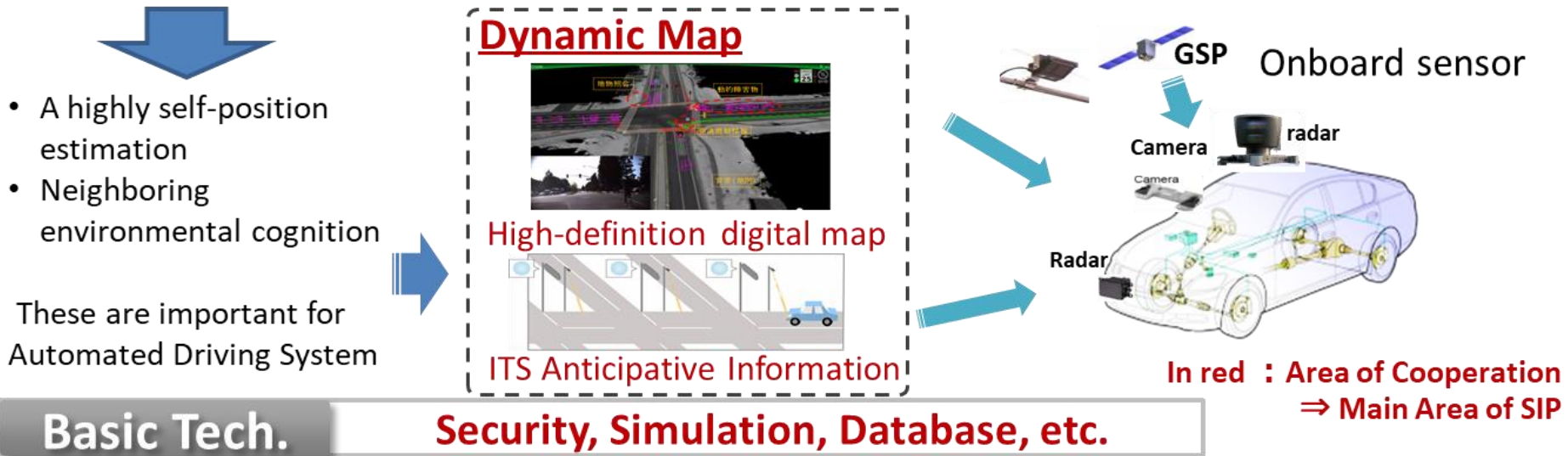
**Ministry of Land,  
Infrastructure,  
Transportation  
and Tourism  
(MLIT)**

**Road Bureau  
Road and  
Infrastructure**

**Road  
Transport  
Bureau  
Standards**

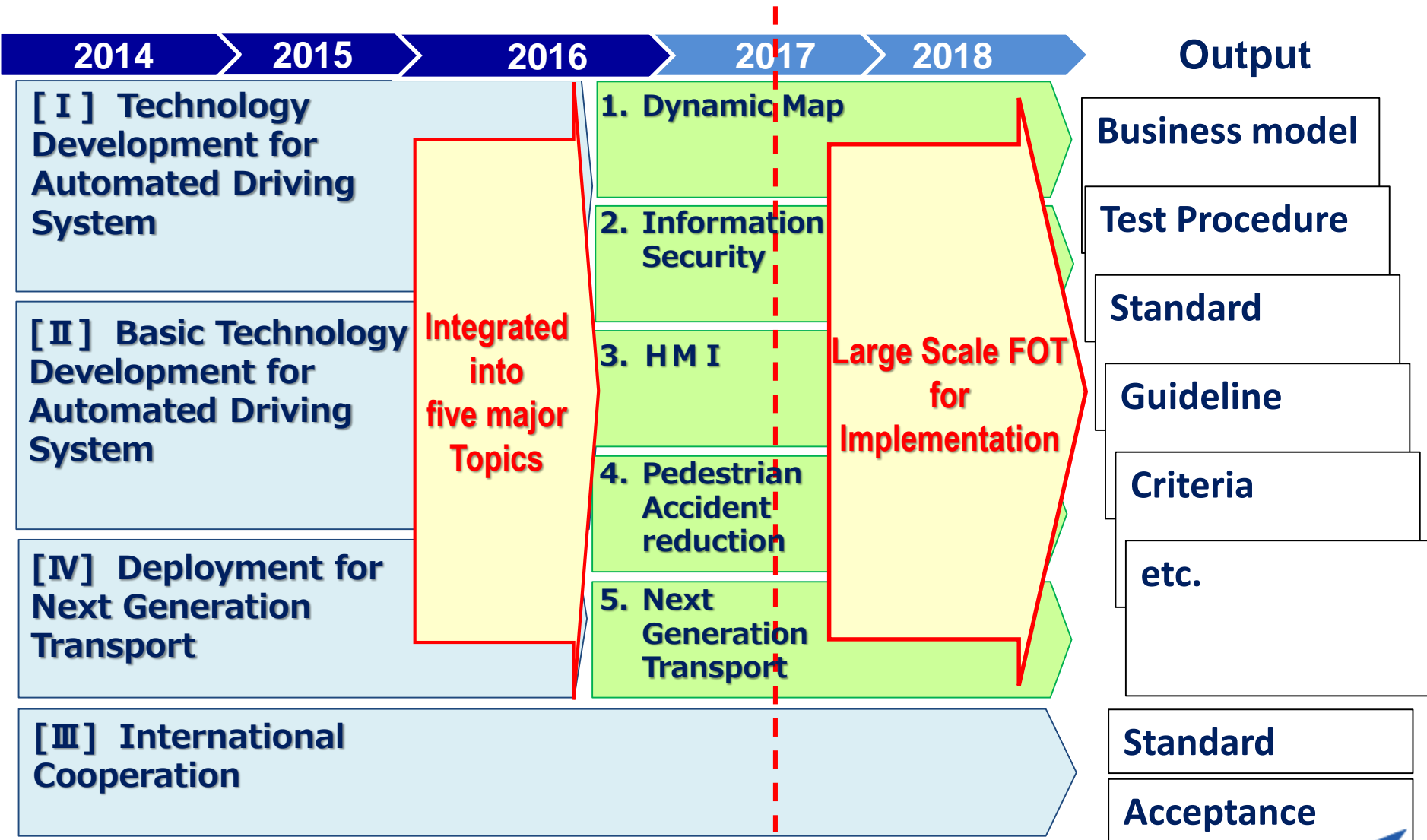
# Technologies for Automated driving systems

- SIP-adus focuses on the R&D in Cooperative area with Industry, Academia and Government



# Activities

## ■ Development to FOT





# Technology Developments

## ■ 20 to 30 projects per year

### Promoting Committee

System Implementation WG

Next Generation Urban Transportation WG

International Cooperation WG



### SIP-adus's Project (FY2015)

|  |                                |
|--|--------------------------------|
| <b>Dynamic Map</b>   |                                |
| Activity Plan of Dynamic Map Study   | <a href="#">co1-1.pdf</a>      |
| Research for the advancement of driving support by utilizing traffic regulation information                        | <a href="#">npa2.pdf</a>       |
| Development of Vehicle-to-pedestrian Communication Technology  | <a href="#">miac1-2.pdf</a>    |
| <b>Connected Vehicle</b>   |                                |
| Research for advanced Traffic Signal Prediction Systems  | <a href="#">npa1.pdf</a>       |
| Research for the advancement of DSSS, Driving Safety Support Systems, which utilize ITS radio communication        | <a href="#">npa3.pdf</a>       |
| Creation of an internationally open research and development environment   | <a href="#">npa6.pdf</a>       |
| Development of V2V,V2I Communication Technology Toward the Automated Driving Systems                               | <a href="#">miac1-1.pdf</a>    |
| Development of Infrastructure Radar System Technology  | <a href="#">miac1-3.pdf</a>    |
| Development and FOT of Traffic Signal Prediction Systems   | <a href="#">meti6-3.pdf</a>    |
| Next-Generation Intelligent Transport Systems (ITS) utilizing Information and Communication Technology (ICT)       | <a href="#">mlit_miac1.pdf</a> |
| <b>Human Factors</b>   |                                |
| Basic Research on Requirements for Safety and Reliability of Automated Driving System                              | <a href="#">mlit2.pdf</a>      |
| Research on Technical Requirements for Human Machine Interface (HMI) Related to Safety of Automated Driving System | <a href="#">mlit3.pdf</a>      |

## ■ Budget \100/\$

- FY 2014 : \$25 M
- FY 2015 : \$23 M
- FY 2016 : \$26 M
- FY 2017 : \$33 M

|  |                             |
|--|-----------------------------|
| Research project for Promoting International Cooperation on Automated and Connected Driving Systems. | <a href="#">co1-3.pdf</a>   |
| Development and verification of construction technology of driving video recognition database        | <a href="#">meti6-2.pdf</a> |
| Development and Verification of Lane Marker Detection System in All-weather Condition                | <a href="#">meti6-4.pdf</a> |
| Survey on basic evaluation for effective utilization of satellite positioning technology             | <a href="#">meti6-5.pdf</a> |

# Field Operational Test

## ■ Objective

- Provides an open forum for discussions and promote international standardization and R & D with 5 priority developments and social acceptability events

## ■ Expected Participants

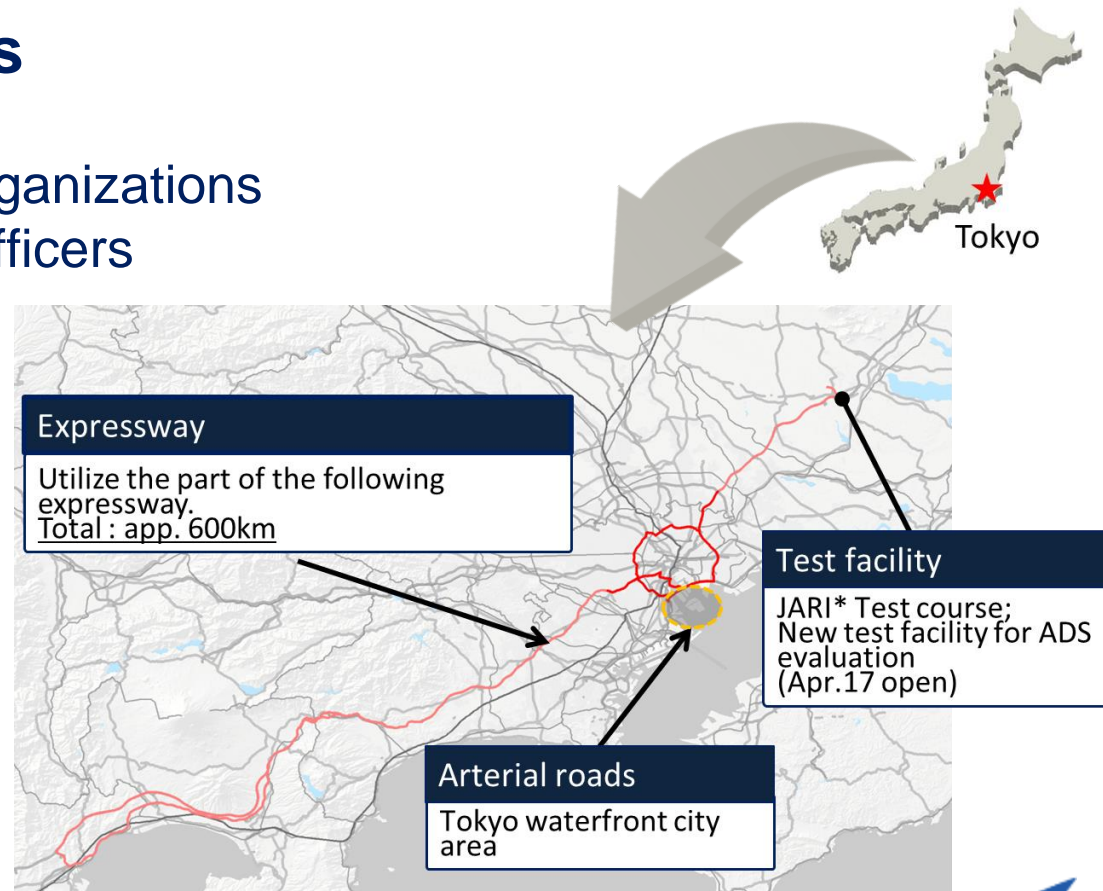
- OEMs/Suppliers
- Universities/Research organizations
- Ministries, government officers
- Foreign OEMs/Suppliers
- Journalists

## ■ Duration

- 2017/9 – 2019/3

## ■ Test Sites

- Expressway
- Arterial Roads
- Test Facility



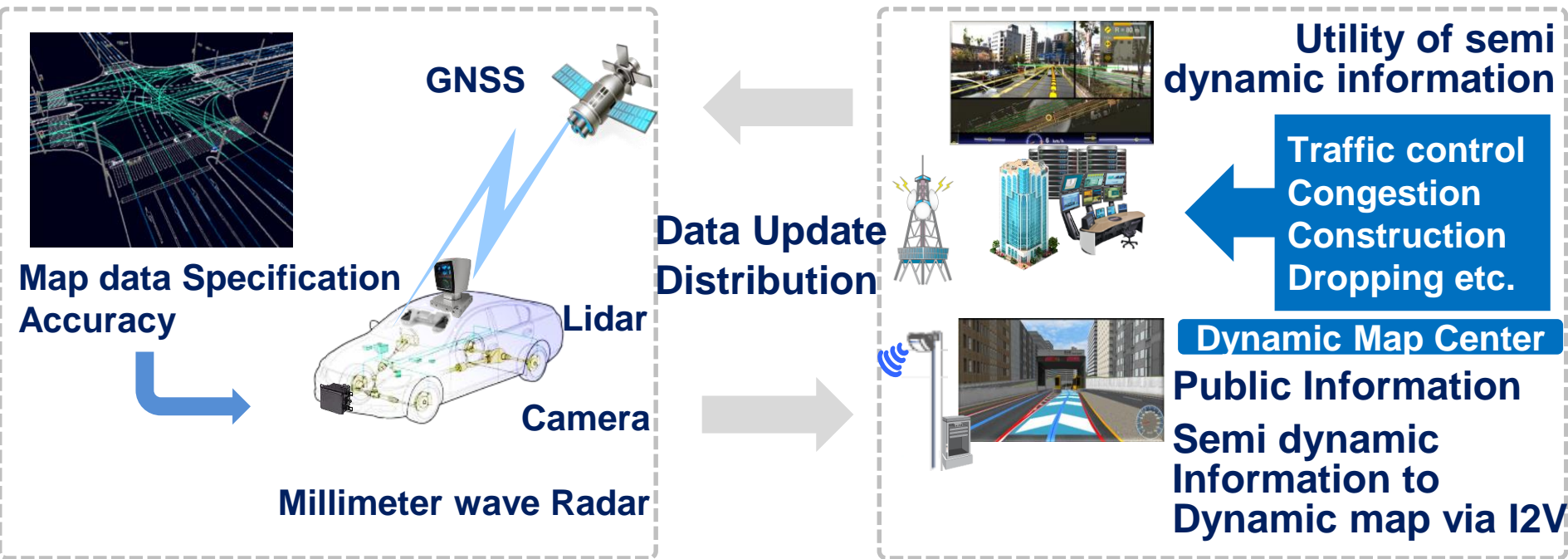
(\*JARI : Japan Automotive Research Institute)

# Field Operational Test Plan understudy

## ■ Dynamic Map

- Validate 3D high-resolution digital map data
- Validate data collection and distribution method
- Verify the utility of semi dynamic information

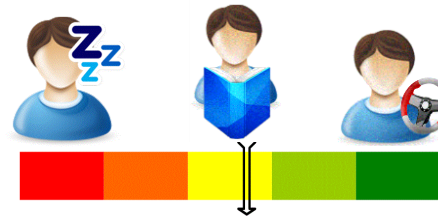
## ◆ The map data is provided by SIP-adus



# Field Operational Test Plan understudy

## ■ Human Factors

- Collect and analyze the driver state data
- Define driving readiness status
- Verify HMI and devices



## ■ Cyber Security

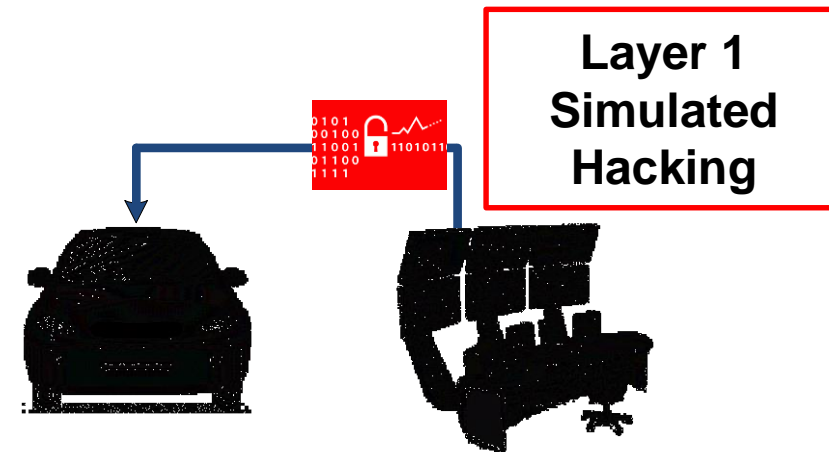
- Validate the evaluation method
- Inspect defense functions of ADV

**Layer1: Communication of Out Car**

**Layer2: E/E Architecture**

**Layer3: In Car Bus Protocol**

**Layer4: ECU Software Structure**



# Field Operational Test Plan understudy

## ■ Pedestrian Accident Reduction

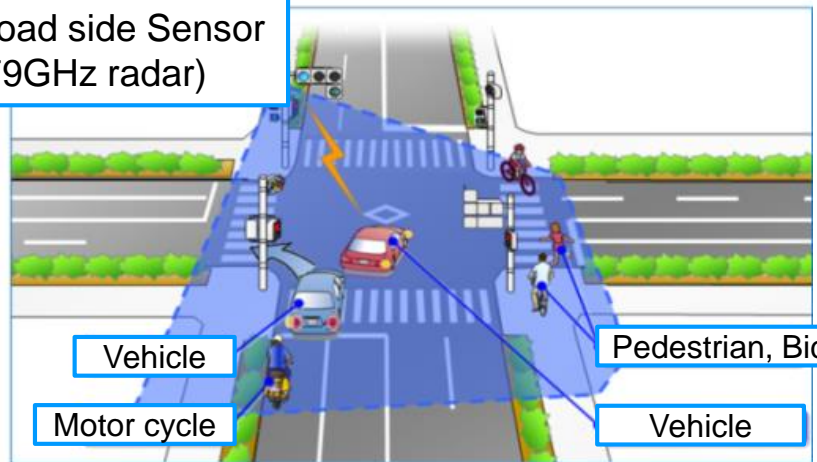
- Verification of suppression effect of unnecessary warning by high accuracy positioning technology
- Verification of pedestrian positioning information through V2P
- Verification of 79GHz radar detection accuracy in actual traffic environment

79GHz radar

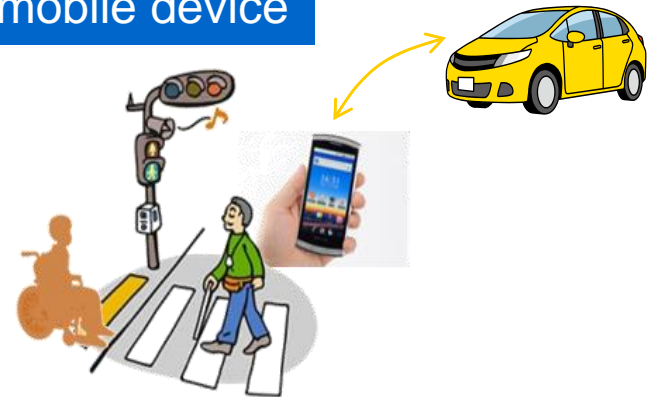
Wireless communication device

Control Unit

Road side Sensor (79GHz radar)



V2P with mobile device



# International Cooperation activities

## ■ Experts assigned in Focused areas

- Actively Participate Technical discussions

### Promoting Committee

System Implementation WG

Next Generation Urban Transportation WG

International Cooperation WG

1. Dynamic Map
2. Connected Vehicle
3. Human Factors
4. Impact Assessment
5. Next Generation Transport
6. Security



SIP-adus Workshop



# SIP-adus Workshop 2016



# SIP-adus Workshop 2016 Program

## ■ Plenary Sessions and Breakout Workshops

|    | Tuesday November 15  | Wednesday November 16                      | Thursday November 17<br>(Breakout Workshop)              |
|----|--|--|--|
| AM | 9:00 ~ 10:15<br>Opening & Keynote Session                        | 9:00 ~ 10:30<br>SIP-adus Report Session    | 9:00 ~ 12:00<br>Breakout Workshop-1<br>Breakout Workshop |
|    | 10:30 ~ 12:30<br>Special Session<br>Regional Activities and FOTs |  |  |
|    | SIP-adus Display   |  |  |
| PM | 13:30 ~ 15:00<br>Dynamic Map                                     | 13:30 ~ 15:15<br>Next Generation Transport | 13:00 ~ 15:00<br>Breakout Workshop-2                     |
|    | 15:20 ~ 16:35<br>Connected Vehicles                              |  |  |
|    | 16:50 ~ 18:05<br>Security  | 15:30 ~ 17:30<br>Human Factors             | 15:30 ~ 17:00<br>Breakout Workshop Summary               |
|    | Preparatory meeting for Breakout Workshop                        |  | 17:00 ~ 17:30<br>Closing Session                         |



# SIP-adus Workshop 2016

## ■ Recognized as a specialized international conference on Connected and Automated Driving in Japan

- Sharing latest information
- Intense discussion among experts
- building friendship among experts

- **Organizer** : Cross-Ministerial Strategic Innovation Promotion Program, Council for Science, Technology and Innovation, Cabinet Office, Government of Japan
- **Date** : November 15-17, 2016
- **Venue** : Tokyo International Exchange Center  
[http://www.jasso.go.jp/tiec/index\\_e.html](http://www.jasso.go.jp/tiec/index_e.html)
- **Attendees** : 425 from 17 countries
- **Speakers** : 61 includes 34 speakers and moderators from overseas

Snapshot with speakers from overseas after Minister Tsuruho made a welcome speech



# SIP-adus Home Page

■ <http://en.sip-adus.jp/>

HOME > Events & Conferences > List of Events > SIP-adus Workshop 2016

## SIP-adus Workshop 2016

Event outline

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# SIP-adus Workshop 2017


- **Date** : **November 14-16, 2017**
- **Venue** : Tokyo International Exchange Center  
[http://www.jasso.go.jp/tiec/index\\_e.html](http://www.jasso.go.jp/tiec/index_e.html)  
Tokyo Academic Park  
2-2-1 Aomi, Koto-ku, Tokyo 135-8630 Japan

## Special Event: AV Test Ride



Snapshots from SIP-adus Workshop 2015 Test Ride

# SIP-adus Workshop 2017 Draft Program

|       | 11/14                          | 11/15                          | 11/16                                 | 11/17   |
|-------|--------------------------------|--------------------------------|---------------------------------------|---|
| AM    | Opening Session                | SIP-adus Report Session        | 9:00~12:00<br>Breakout Workshop (BW)  |  |
|       | Regional Activities and FOTs   | Impact Assessment              |                                       |   |
| Lunch | Poster Session    Lunch        | Poster Session    Lunch        | Lunch                                 |   |
| PM    | Dynamic Map                    | Next Generation Transport      | 13:00~15:00<br>Breakout Workshop (BW) |   |
|       | Connected Vehicles             | Human Factors                  | 15:30~17:00<br>BW Presentation        |   |
|       | Security                       |                                | 17:00~17:30<br>Closing Session        |   |
|       | 18:00~20:00<br>Guest Reception | 18:00~20:00<br>Guest Reception | 17:30~19:30<br>BW Reception           |   |

# Breakout Workshop

## ■ Small Expert Group discussions on selected Topics

### ■ New Topic from 2017

- Field Operational Testing (FOT)

## ■ Focused six Topics

- Dynamic Map
- Connected Vehicles
- Security
- Impact Assessment
- Next Generation Transport
- Human Factors

## ■ Breakout Workshop Presentation

- Share the results from each Breakout Workshop

Leaders report the result of discussion for Breakout Workshop participants



# **SIP-adus Workshop 2017 November 14-16**

<http://en.sip-adus.jp/>

## **See you in Tokyo**

**END**