



SINGAPORE
2019

26th ITS World Congress
21-25 October



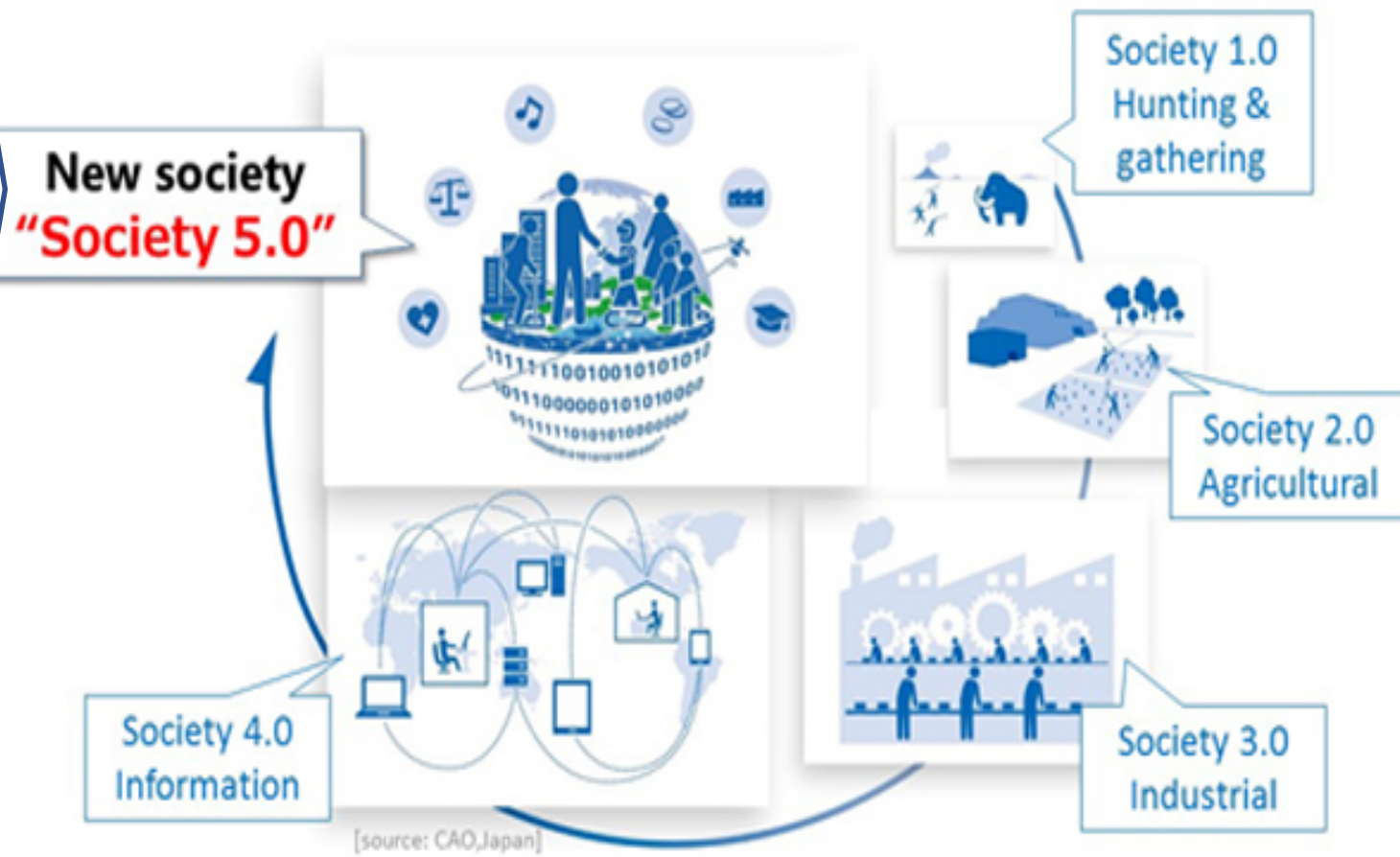
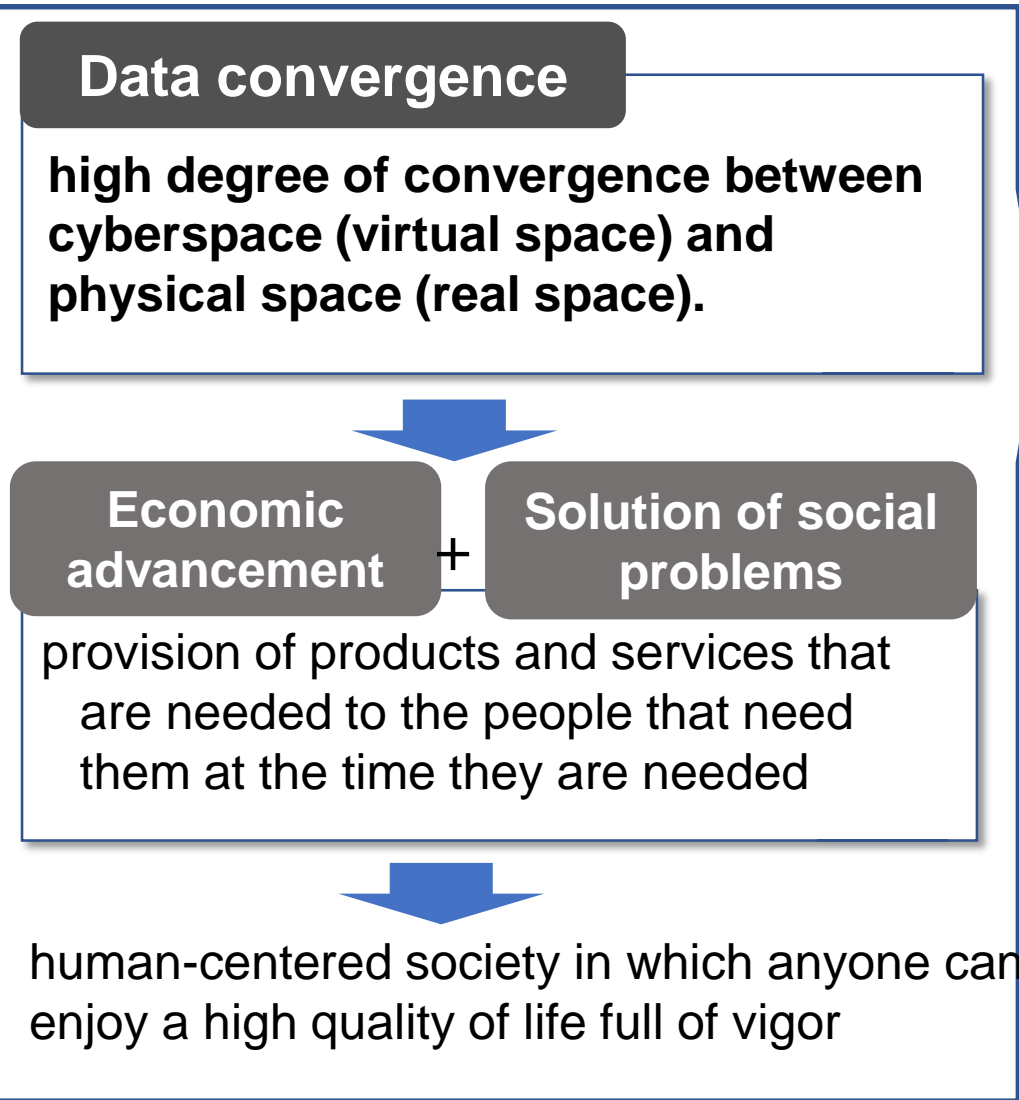
National Research Project on Automated Driving to realize Society 5.0 JAPAN

KOGA, YASUYUKI

Counsellor for SIP-adus,

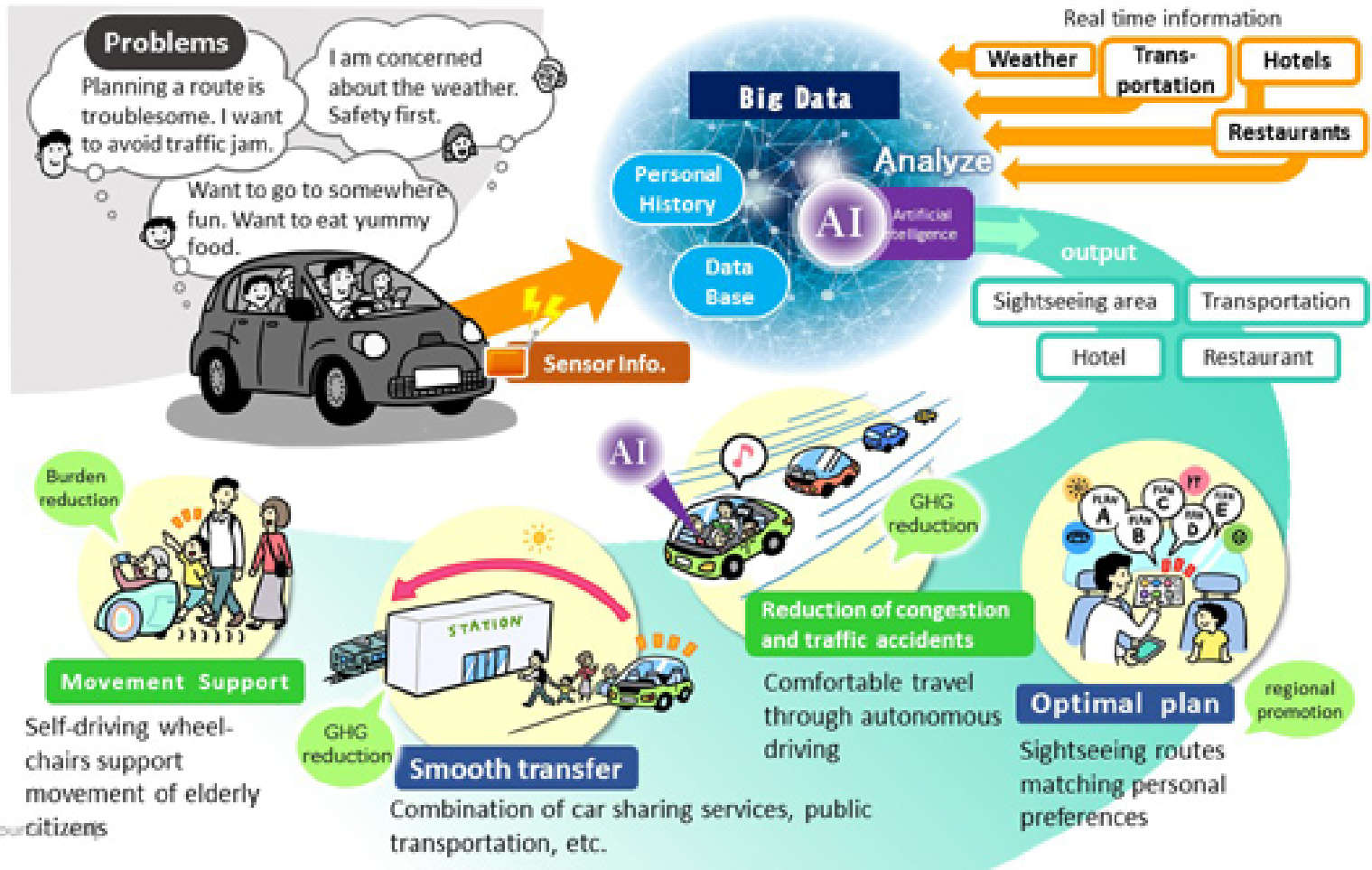
Cabinet Office, Government of Japan

Society 5.0



(Cabinet office HP)

New value in the field of mobility



Optimal plan

Reduction of congestion and traffic accident

Smooth transfer

Movement support

Outline of SIP



➤ Intensive R&D program

- ✓ promote 5-years R&D (FY2018 - FY2022)
- ✓ from fundamental research to practical and commercialization

➤ Promote cross-sector collaboration

- ✓ enhancing cross-ministerial cooperation
- ✓ promote industry-academia-government collaboration

➤ Leadership and total Budget

- ✓ CSTI appointed Program Directors and allocates the budget for each research theme.*

* ¥28bil in total per yea for SIP 12 themes



Cross-Ministerial Strategic Innovation Promotion Program

Council for Science, Technology, and Innovation

Governing board
(CSTI Executive Members)

← Outside experts

Executive Director of SIP (Assigned from 2018)

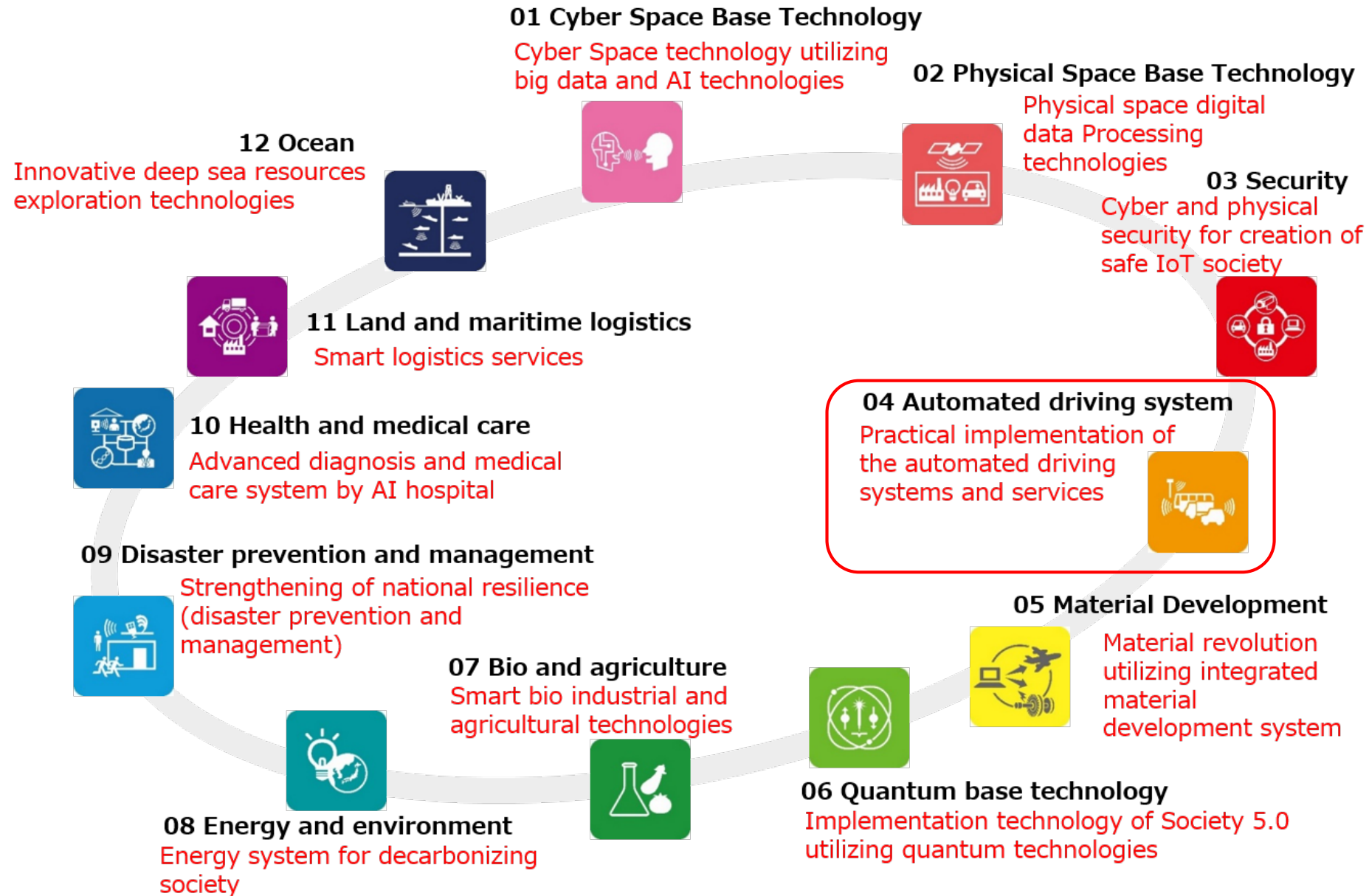
Program Director (PD)
(assigned to Cabinet Office for each policy issue)

Steering Committee
PD (Chairman), relevant ministries, experts, corporations, Cabinet Office (secretariat)

Relevant ministries and management corporations and other researchers



2nd phase of SIP (FY2018-2022) - 12 Programs





Cross-Ministerial **S**trategic **I**nnovation **P**romotion Program (SIP)

SIP-adus ; **A**utomated **D**riving System for **u**niversal **s**ervice

Promoting structure



HQ
coordination

Cabinet Secretariat
IT Strategic Headquarters

Cabinet Office

PD

Steering Committee
Chair: Program Director (Seigo Kuzumaki)
Secretariat: Cabinet Office
Cabinet Secretariat, NPA, MIC, METI, MLIT,
industry and academia, etc.

**System
implementation WG**

**Business
promotion WG**

**International
cooperation WG**

**Transport
information
infrastructure TF**

**V2X communications
& cooperative
system TF**

**FOTs in the Tokyo
Waterfront area TF**

**National Police
Agency (NPA)**

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

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

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

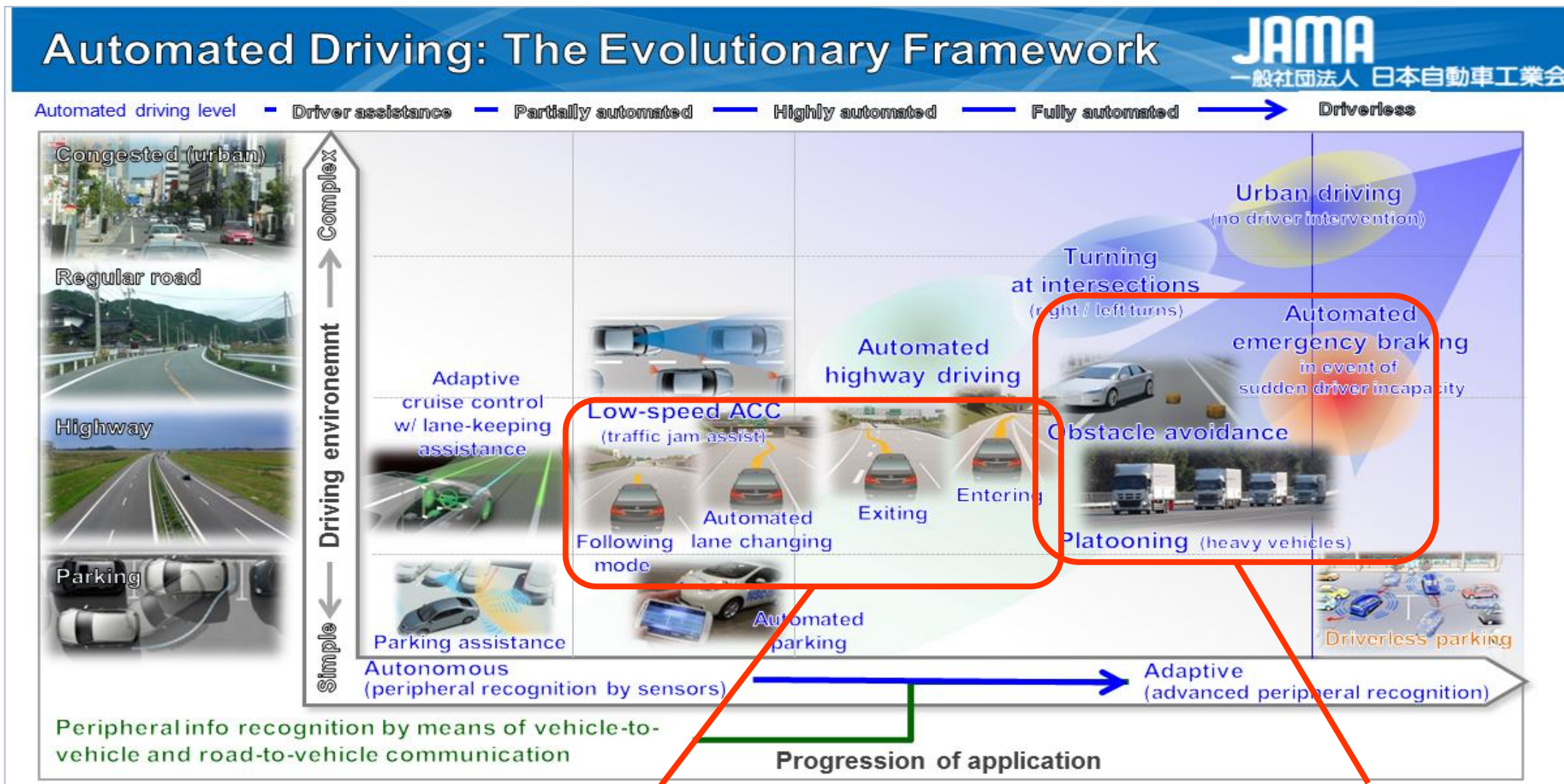
**Other related ministries and
agencies**

NEDO

Research Groups



Cooperative Automated Driving with ITS



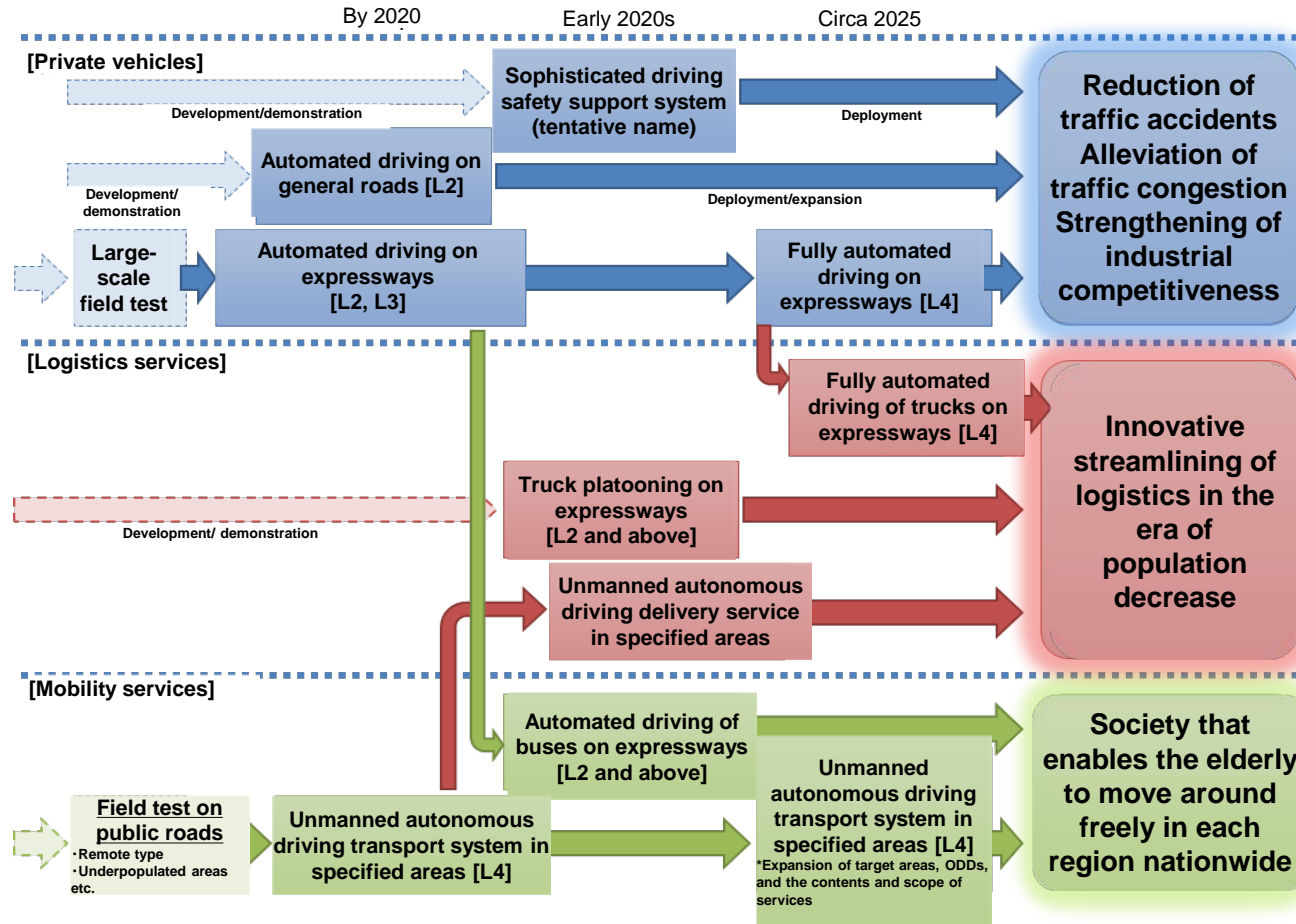
1st Phase of SIP-adus (2014~2018)

2nd Phase of SIP-adus (2018~2022)

Objectives

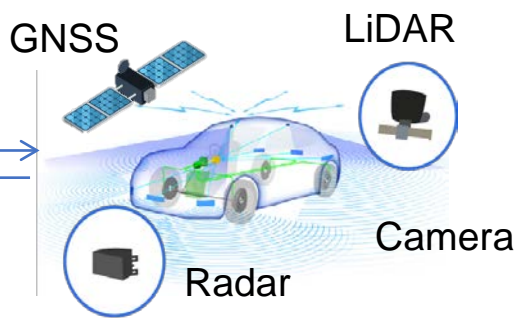
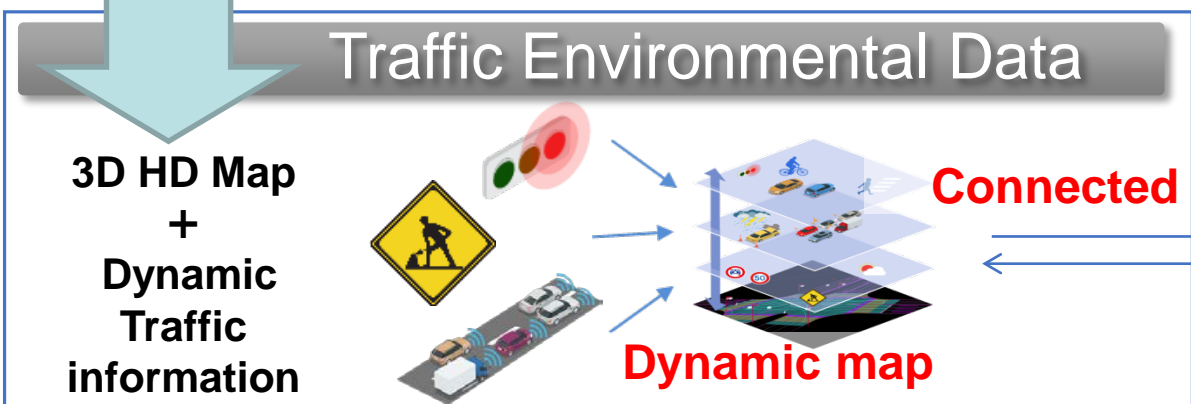
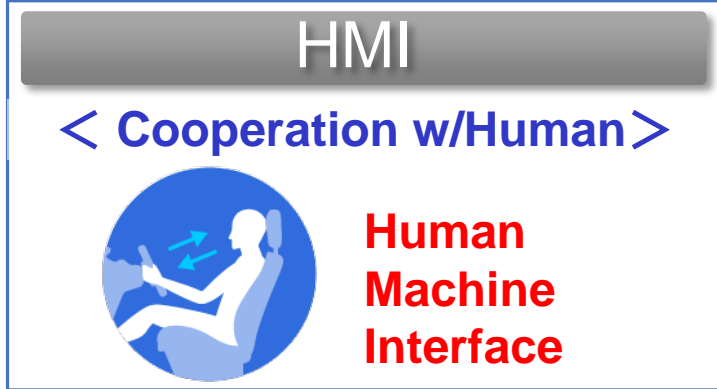
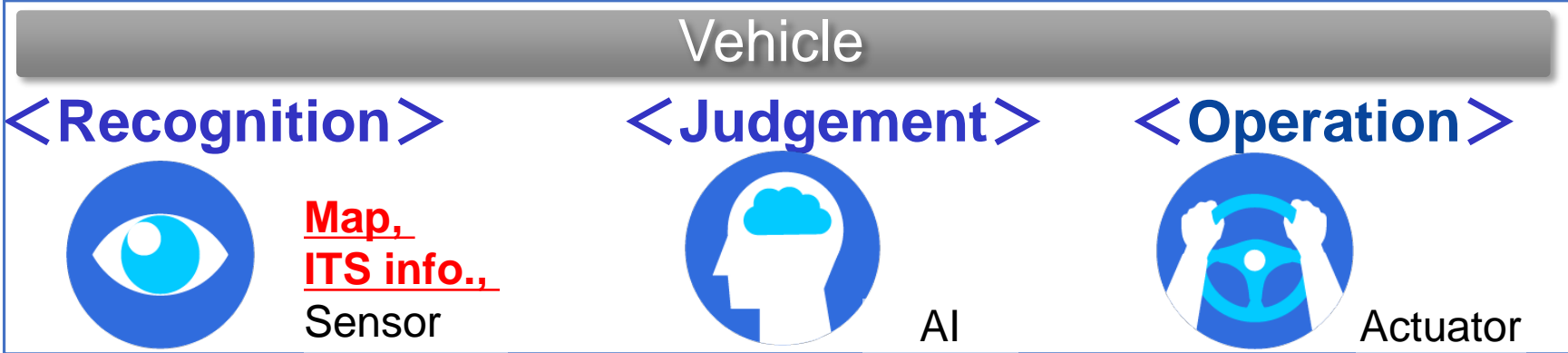
Public-Private ITS Initiative/Roadmaps 2019

Scenario for the commercialization and service of fully automated driving by 2025



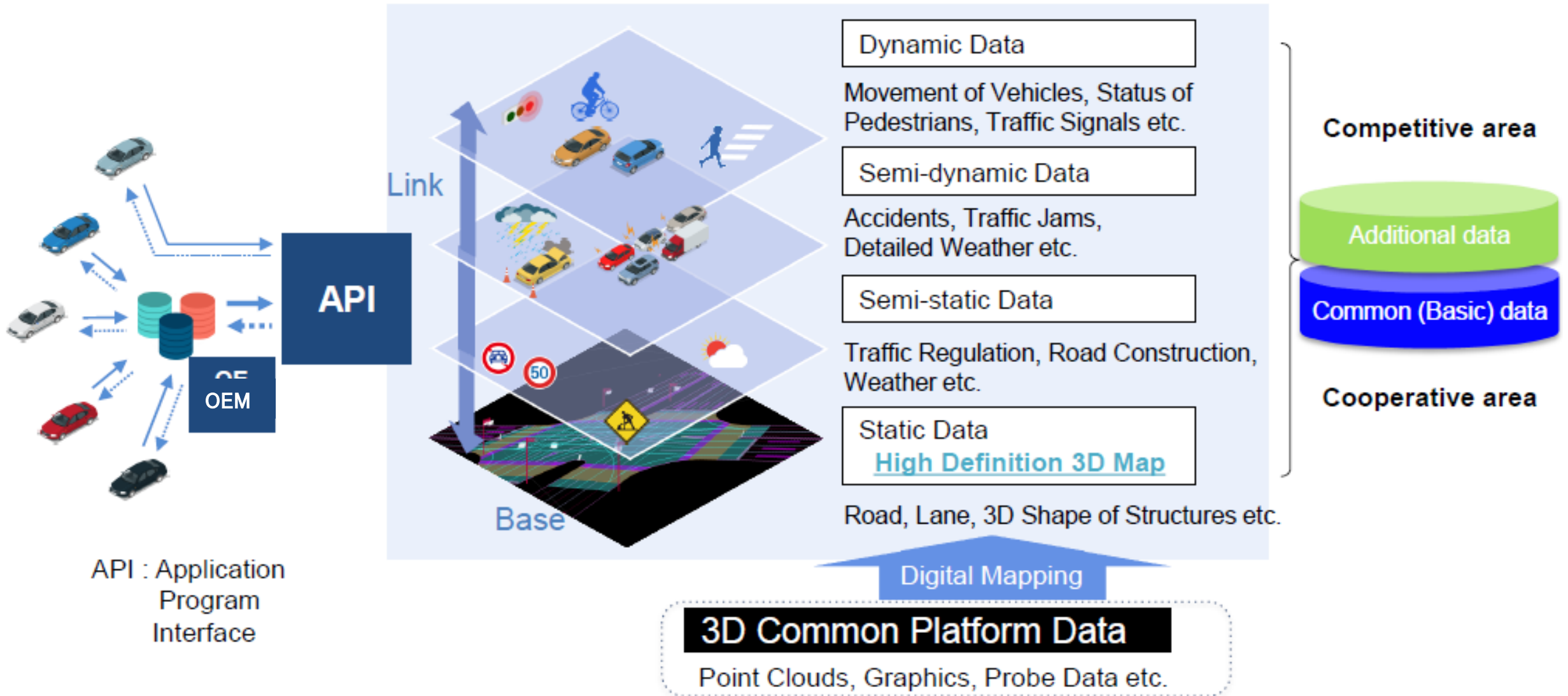
- To establish the **cooperative areas** technologies essential for implementation by 2023
- To create **multiple example cases for commercialization through FOTs** by involving various **businesses and local government**

Main domain of SIP-adus' R&D



In red :
Main Domain of SIP-adus
(Area of Cooperation)

Dynamic Map



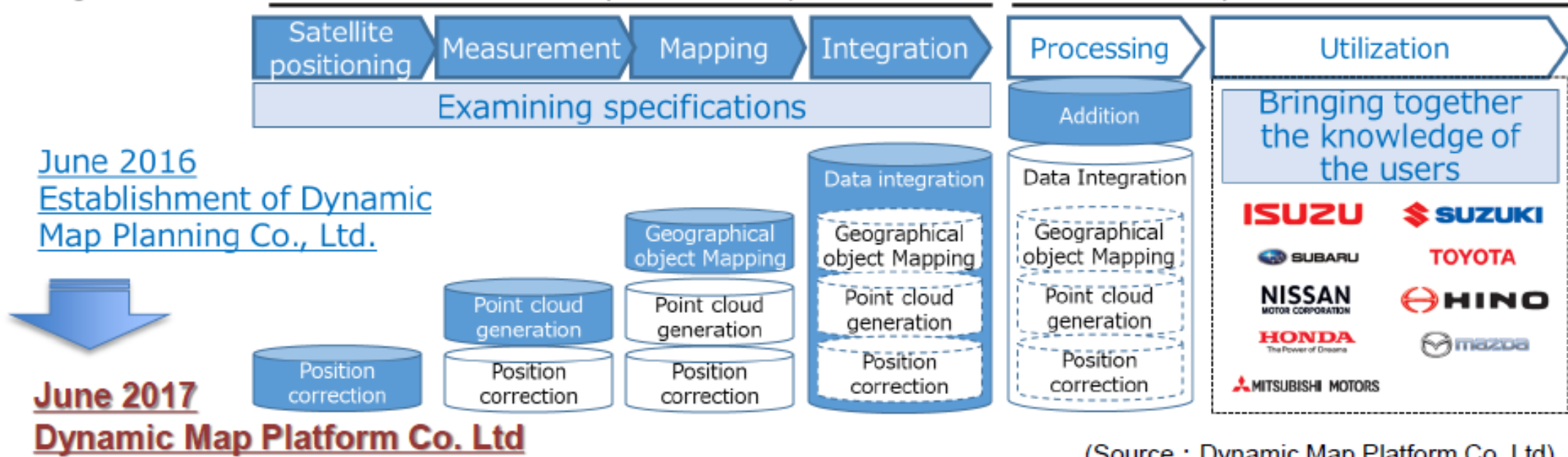
Dynamic Map Platform Co.Ltd

- The knowledge of the companies were brought together for the practical application of three-dimensional high-precision maps



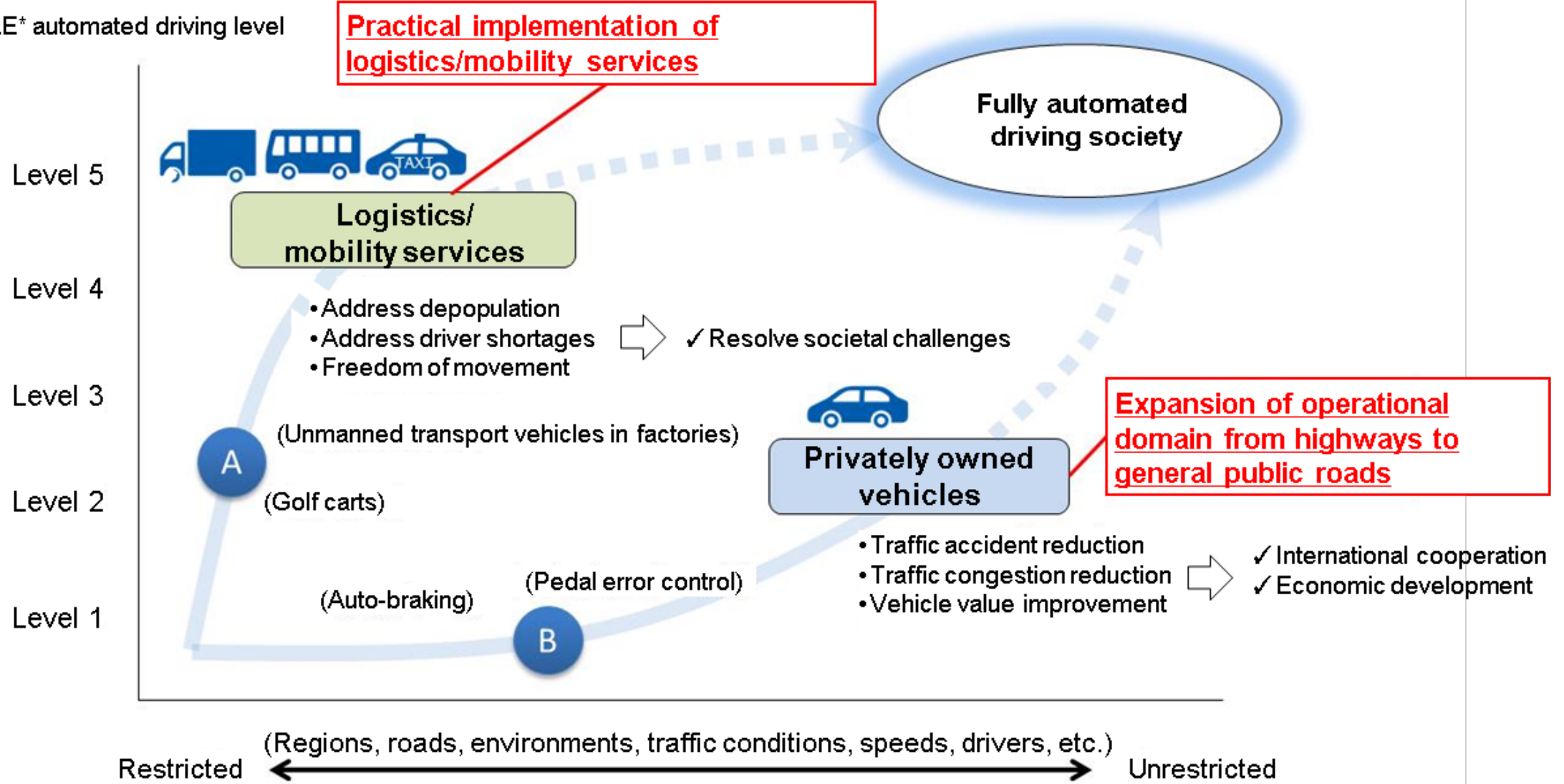
“High-Precision Three-Dimensional Map Data” Cooperation Areas

Competitive Areas

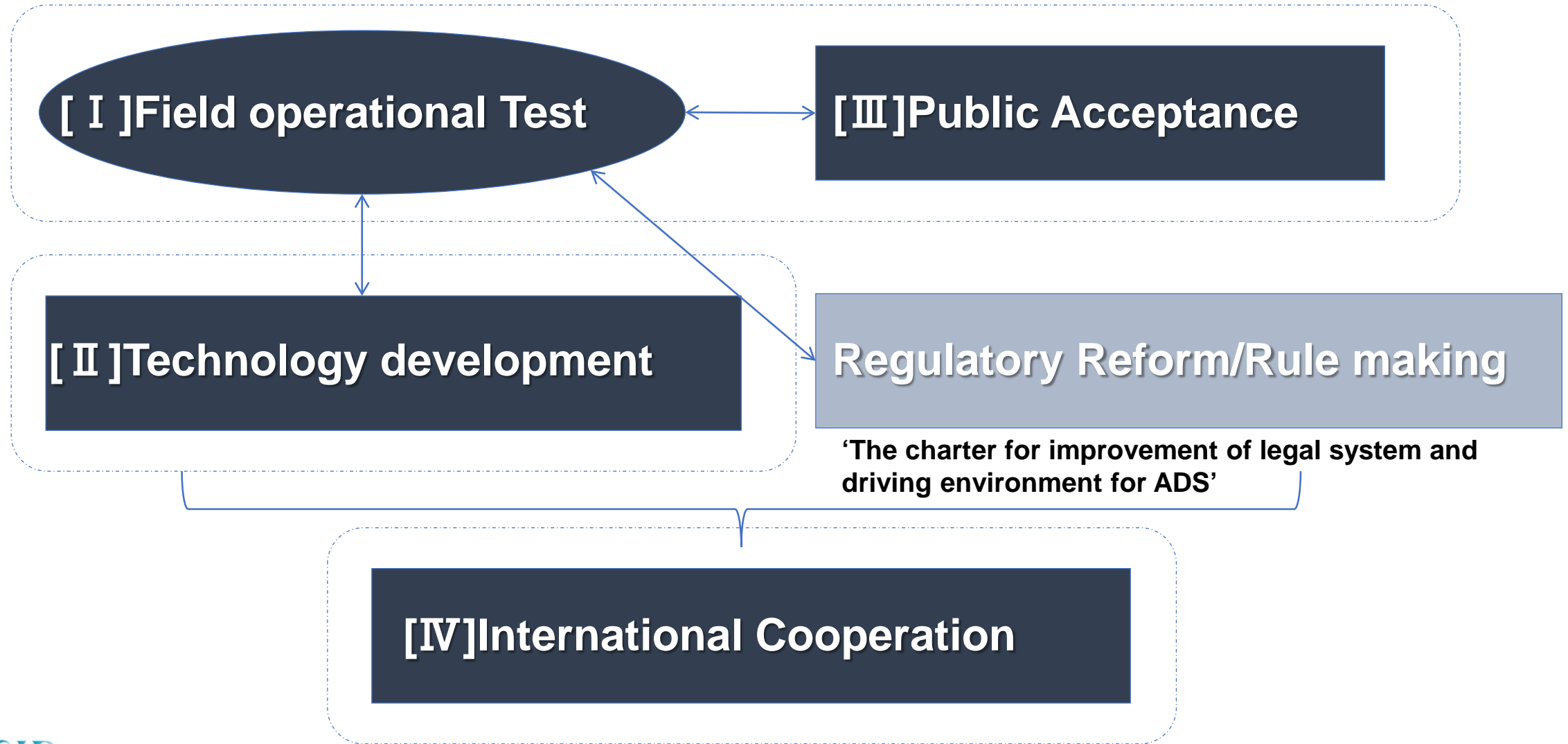


Overview of 2nd Phase of SIP-adus

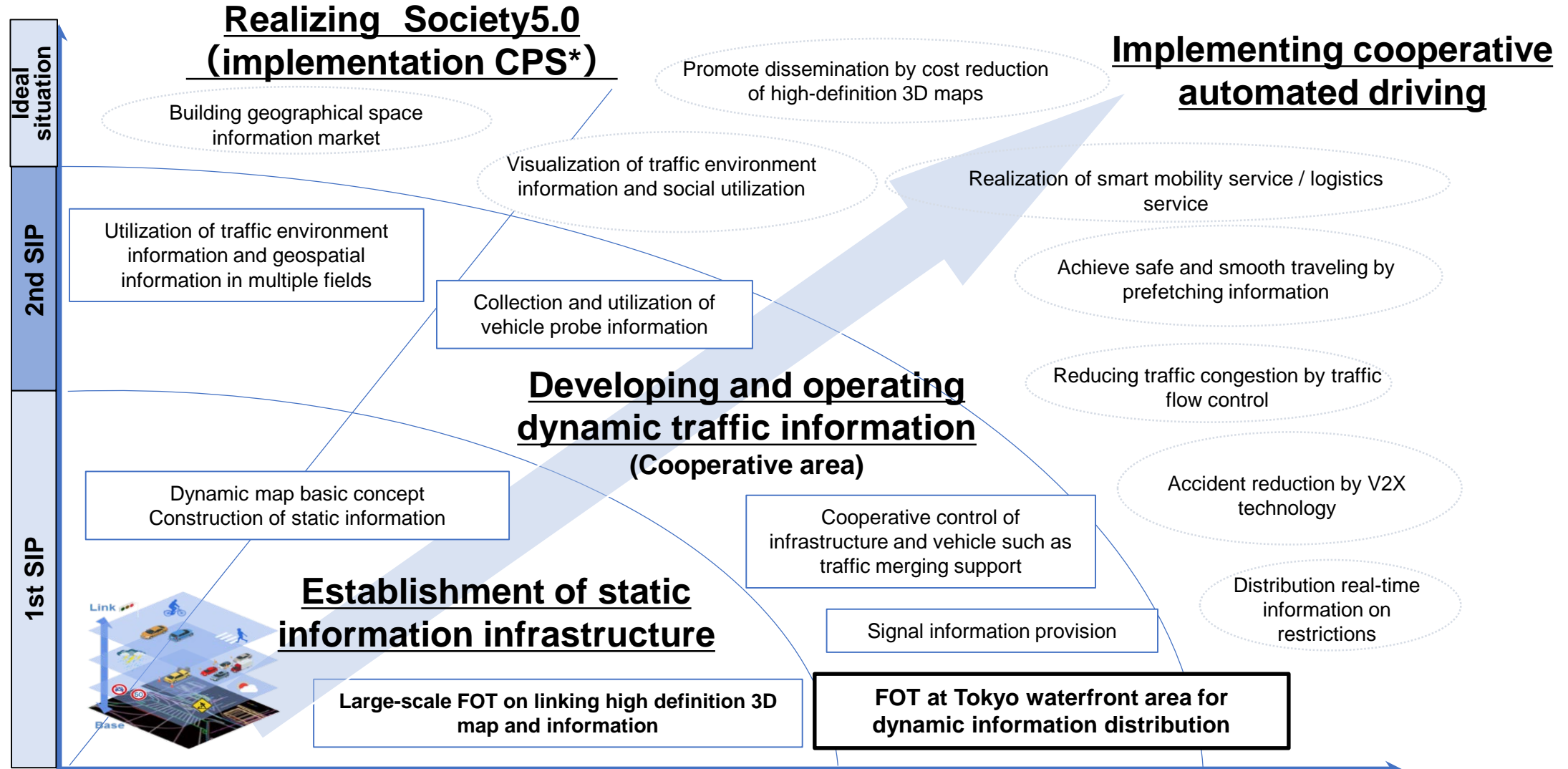
SAE* automated driving level



4 Pillars of SIP-adus

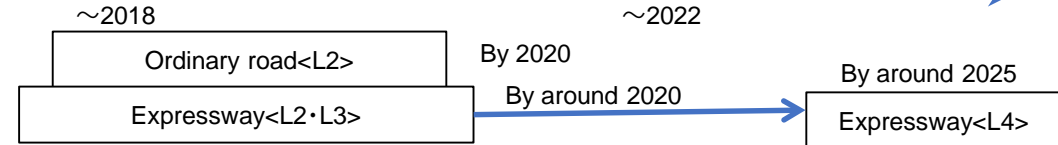


Building the Traffic Environmental Info. Framework



*CPS : Cyber Physical System

[Scenario for private car]

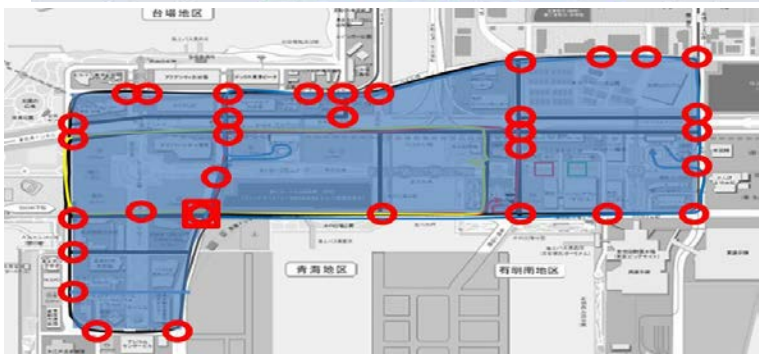


FOTs (Tokyo Waterfront City–Haneda Area)

■ FOTs started in October 2019 in the Tokyo waterfront city area (general roads and Metropolitan Expressway / Haneda area) with 28 participants widely

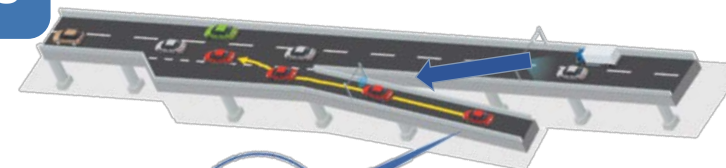
Providing traffic signal information

Providing the signal display and change timing information even in environments where recognition is difficult using in-vehicle cameras.



Merging assistance on the main lane of highways

Providing vehicle information on the main lane



The speed and timing are automatically adjusted to ensure safe merging.

Public transport system (self-driving buses)

PTPS (Public Transportation Priority System)

Precise Docking to the platform

FOTs for the next-generation ART by using automated driving technology in mixed traffic flow.



Participants of FOT in Tokyo waterfront area

- Total 28 entities including OEMs, suppliers, venture companies and universities with about 100 vehicles will participate in our FOT in Tokyo.



Challenging themes in FOT

- Prioritize and focus on essential information in order to realize highly advanced ADS

Automated driving
under various
traffic environment



Surroundings Info.
which **is difficult to
be detected by
onboard sensors**

Info. which is
**useful not only for
ADS but for ADAS**

Developing traffic info.

Traffic Signal
Info.



Open closed info. of ETC
gate /Merging assistance info.

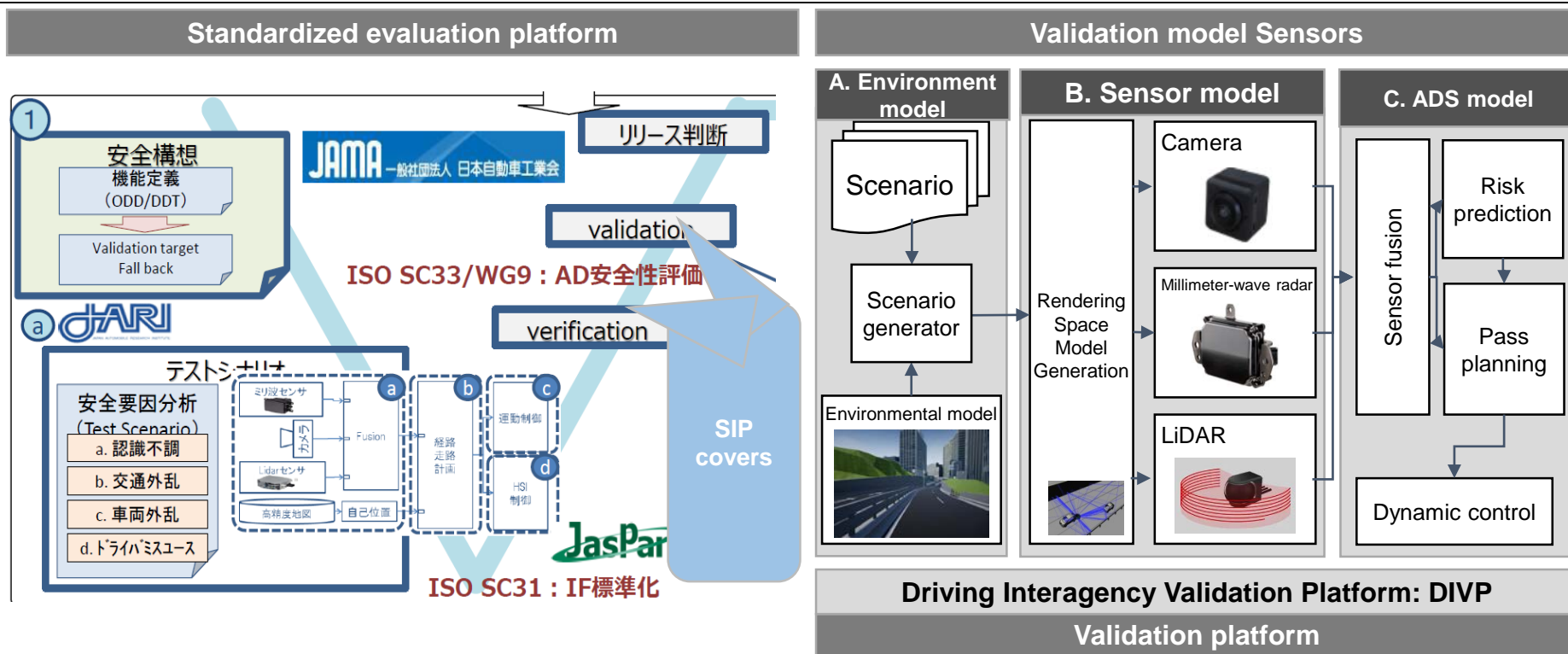


Lane level traffic
environmental info.



Safety Assurance

■ To develop **simulation tool and method** which can evaluate safety assurance of ADS under various traffic conditions



Disclose standardized evaluation platform

By establishing the simulation tool for sensor evaluation, enhance both safety of ADS and developing capability of OEMs and suppliers



International cooperation



SIP-adus Workshop 2019

November 12-14 @ Tokyo International Exchange Center

Regular annual international conference for Info. Sharing & discussion



Main themes of International Cooperation

Dynamic map

Connected Vehicle

Human Factors

Cybersecurity

Safety Assurance

Field Operational Test

Impact Assessment



Welcome Speech
Noriyuki Koda
Vice-Minister for Policy Coordination,
Cabinet Office, Japan



Keynote Speaker
1 Kenneth M. Leonard: US Department of Transportation, USA
2 Clara de la Torre: European Commission, Belgium
3 Seigo Kuzumaki: SIP-adus Program Director, Japan



Breakout Workshop

SIP-adus Workshop in Tokyo



Date : November 12-14, 2019

**Venue : Tokyo International Exchange Center
2-2-1 Aomi, Koto-ku, Tokyo 135-8630**

Program	Tuesday, November 12	Wednesday, November 13	Thursday, November 14
AM	Opening Session	Cybersecurity	Breakout Workshop
	Regional Activities	Safety Assurance	
	Poster Session		
PM	FOTs and Next Generation Transport	Dynamic Map	Breakout Workshop Summary
	Human Factors	Connected Vehicle	Closing Session

Thank you

