

Vehicle-Highway Automation Committee (ACP30)



Towards Social Deployment of Automated Driving
- SIP-adus Activity in Japan -

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SIP-adus Program Director
10 Jan. 2023





Strategic Innovation promotion Program

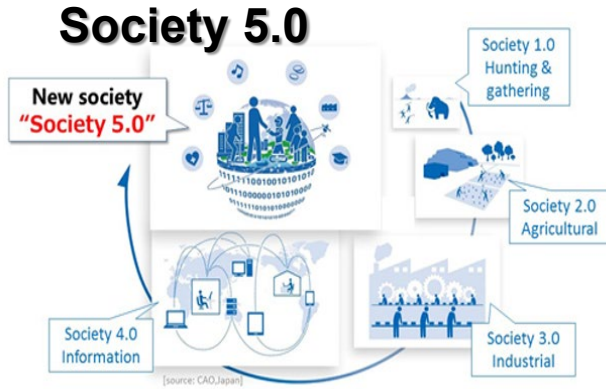
adus ; Automated driving system for universal service

SIP 1st

FY2014~FY2018

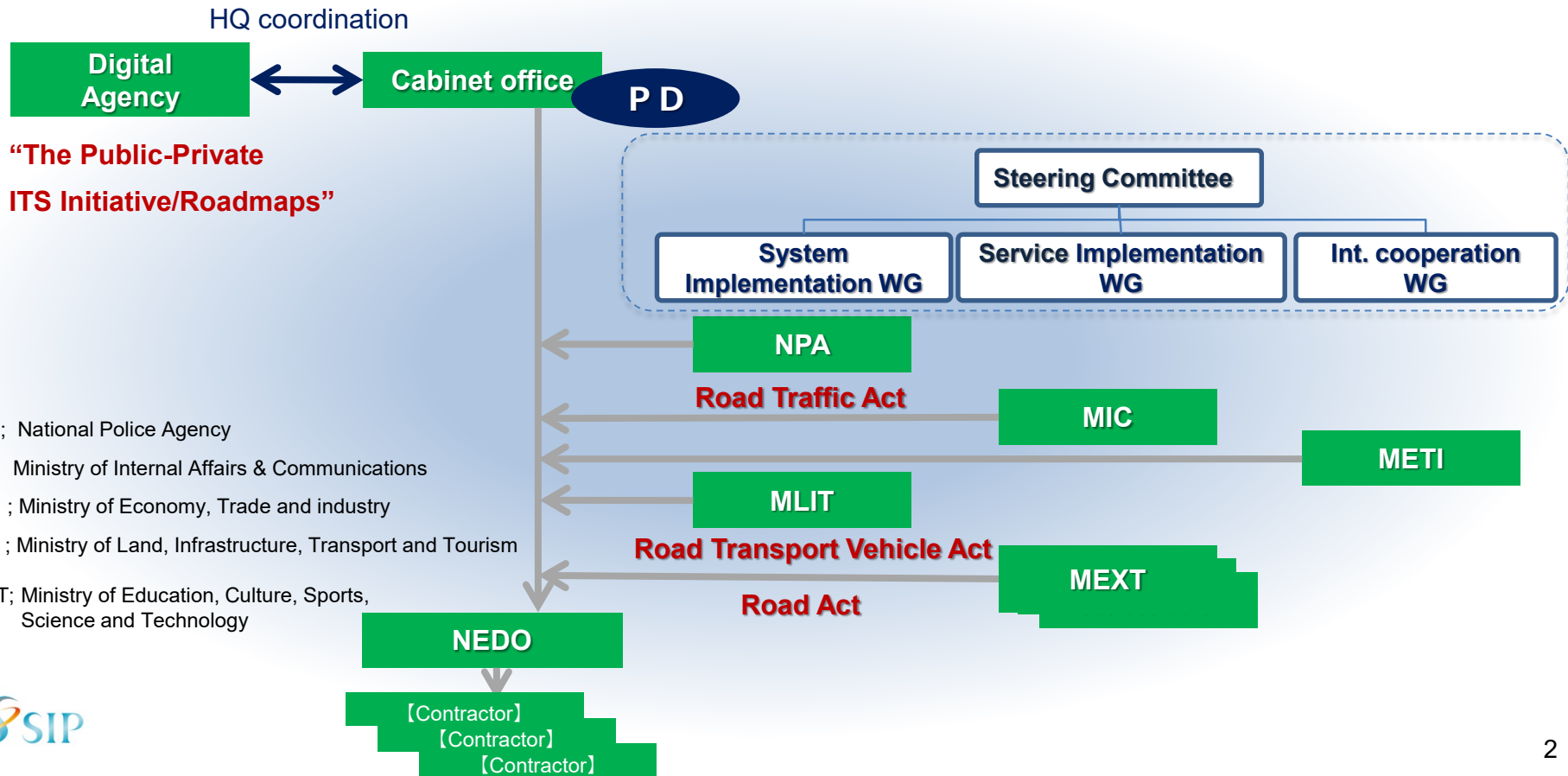
SIP 2nd

FY2018~FY2022



- **Promote cross-sector collaboration**
 - ✓ enhancing cross-ministerial cooperation
 - ✓ promote industry-academia-government collaboration
- **Intensive R&D program**
 - ✓ from fundamental research to practical and commercialization

Promotion framework



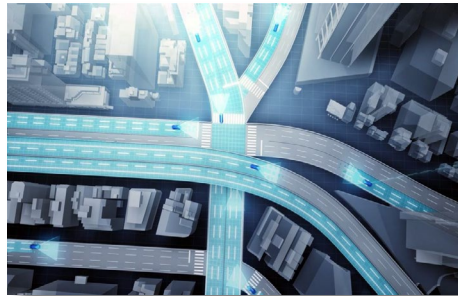
Scope of SIP-adus

ADS (Automated Driving Systems)

Safe and secure mobility for all



Competition



Cooperation

Realization of **S**ociety 5.0



➤ Technology

- ① Dynamic Map
- ② Safety Assurance
- ③ Cybersecurity
- ④ Geospatial dynamic data utilization etc.

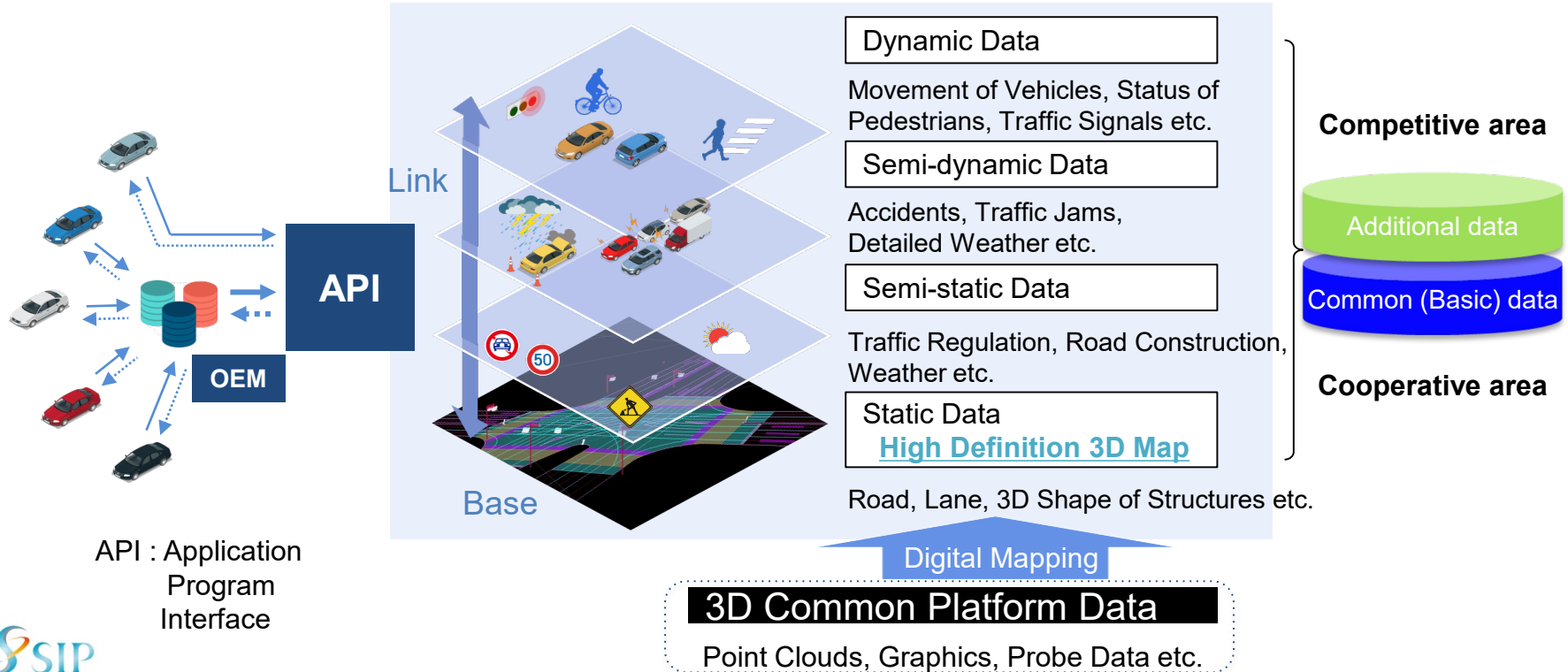
➤ Int. cooperation/Standardization

➤ Public acceptance

➤ Deregulation/Regulatory reform

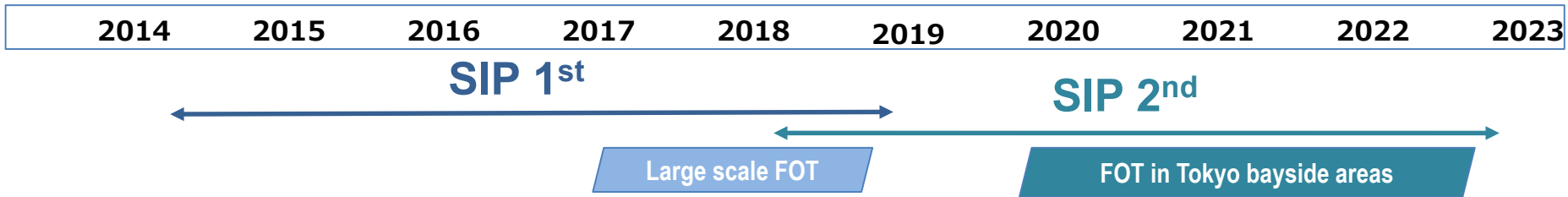
Dynamic Map

To use combination database of high definition 3D map data with dynamic data such as traffic jam, road construction info.

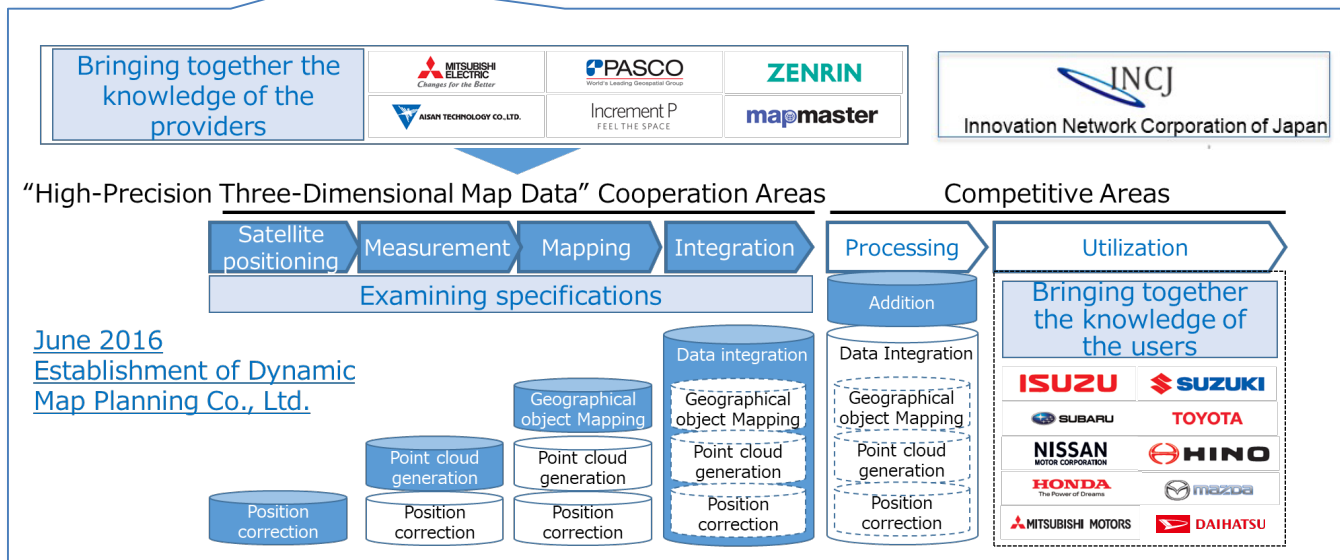


API : Application Program Interface

Dynamic Map Platform Co., Ltd



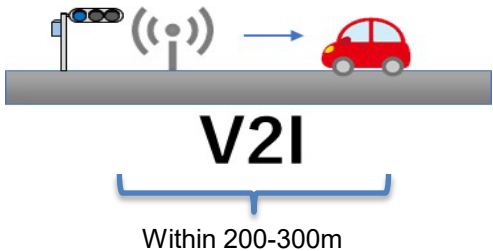
Dynamic Map Platform Co., Ltd (DMP)
Established in 2017



SIP 2nd Field Operational Tests in Tokyo

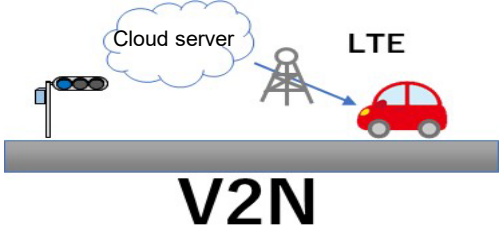

- ◆ To enlarge the application use cases of traffic environment info. via V2I & V2N

760MHz band



- Traffic signal info.

ISO/TS19091 meet the requirements for ADS



- Traffic signal info.
- Location of Emergency vehicles
- Lane level Traffic jam info.
- Precise & detail weather info.

Effective
But, remain open issue
such as delay, cyber security



*V2I : Vehicle to Infrastructure
**V2N:Vehicle to Network

Virtual validation platform for AD-safety assurance

Real vehicle test

Virtual test



Public Road



Proving Ground



SILS / MILS
(Software in the Loop / Model in the Loop)

Connect

Connect

HILS

(Hardware in the Loop)

VILS

(Vehicle in the Loop)

Camera



Radar



LiDAR



Highly Consistent Sensor Model

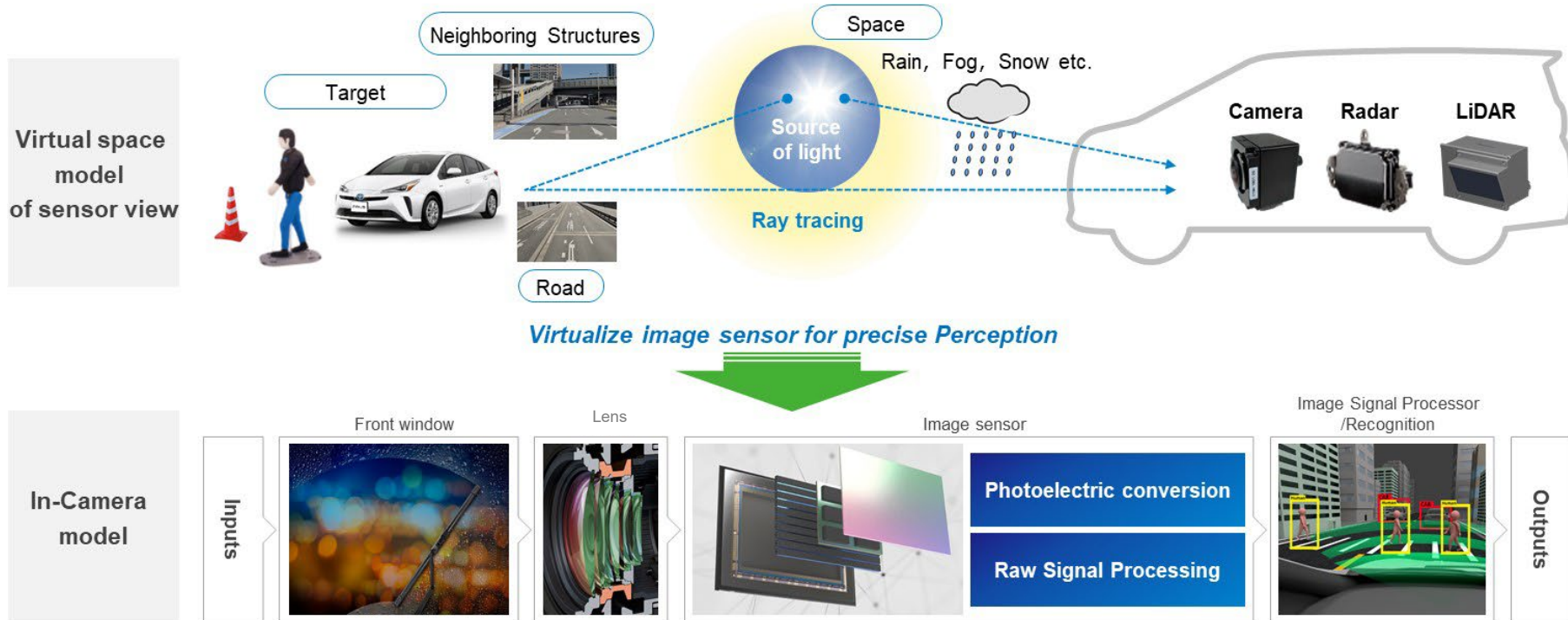
Source : Kanagawa Institute of technology, MITSUBISHI PRECISION CO.,LTD., DENSO Corporation, Pioneer Smart Sensing Innovations Corporation, Hitachi Automotive Systems, Ltd.



DIVP; Driving Intelligence Validation Platform

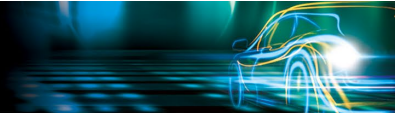
Driving Intelligence Validation Platform

Simulation model that is highly consistent with physical phenomena

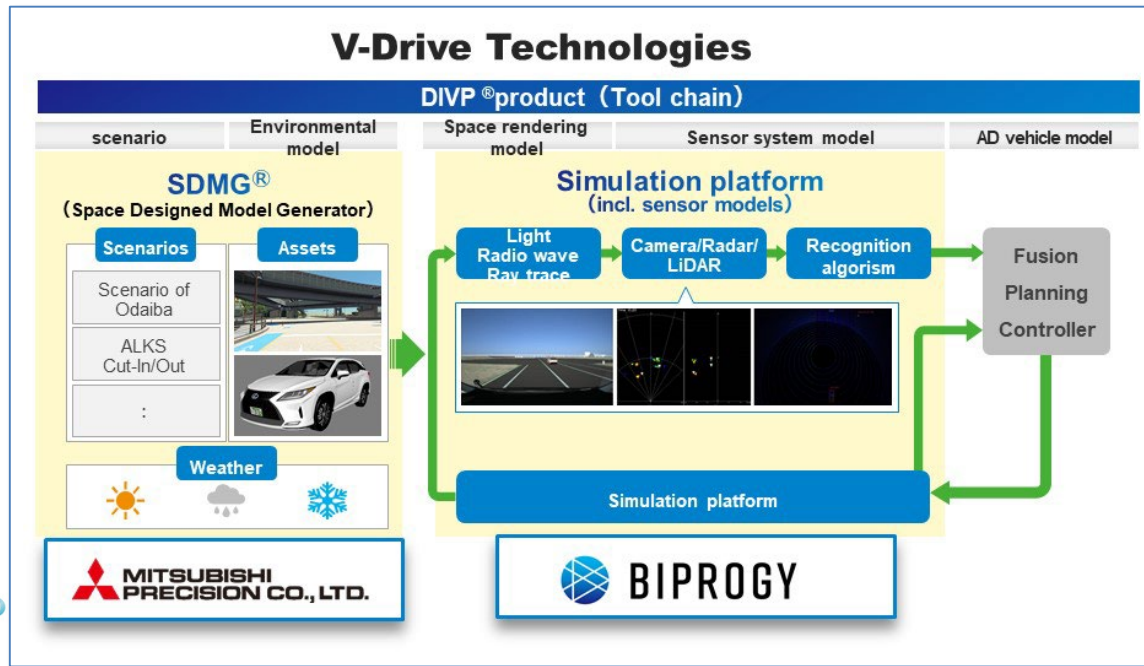
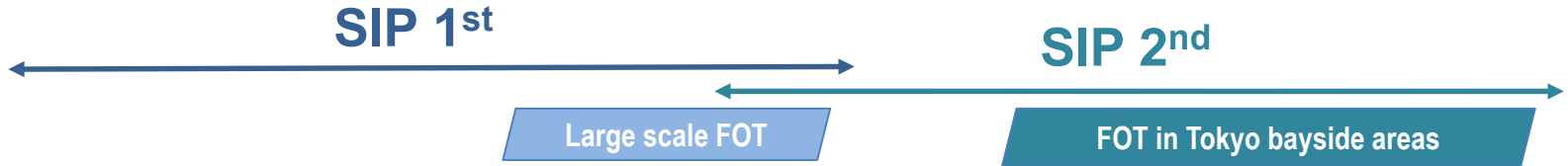


Source : MITSUBISHI PRECISION CO.,LTD., SOKEN, INC, Pioneer Corporation, Sony Semiconductor Solutions Corporation

V-Drive Technologies Inc.



2014 2015 2016 2017 2018 2019 2020 2021 2022 2023



★
V-Drive Technologies Inc.
Established in 2022



Process to commercialization of SAE Level 3

2014 2015 2016 2017 2018 2019 2020 2021 2022 2023

SIP 1st

SIP 2nd

Large scale FOT

FOT in Tokyo bayside areas

◆ The Public-Private ITS initiative Roadmap (Revise every year)

◆ Charter for Improvement of Legal System and Environment for Automated Driving Systems (Cabinet Secretariat)

◆ Amended Traffic Act (Police Agency)

◆ Amended Road Transport Vehicle Act (MLIT)

◇ World first SAE L3 POV

March 2021

Honda
SENSING
Elite



Initiatives for Next step

RoAD to the L4

Project on **R**esearch, Development, Demonstration and Deployment (RDD&D) of **A**utomated **D**riving **t**oward **the L**evel **4** and its Enhanced Mobility Services

- Project led by **METI** (Ministry of Economy, Trade and Industry) and **MLIT** (Ministry of Land, Infrastructure, Transport and Tourism) Road Transport Bureau
- Period : June 2021 - March 2026



Strategic **I**nnovation promotion **P**rogram

- Feasibility studies ongoing on 15 candidate themes for SIP 3rd Phase “Smart mobility platform establishment” is one of them
- Period : FY2023 – FY2027



Thank you

The background is a vibrant, abstract composition of blue and green light trails and gradients. A large, glowing sphere, resembling a planet or a globe, is the central focus, rendered in shades of cyan and blue. To the right, a glowing silhouette of a car is depicted, composed of bright blue and yellow light trails, suggesting motion and speed. The overall aesthetic is high-tech and futuristic.

<https://en.sip-adus.go.jp/>