



National Research Project on Automated Driving to realize Society 5.0 - SIP-adus in Japan -

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TRANSFORMATION BY TRANSPORTATION | #ITSWC2022

In Partnership With:



Built By:



In the business of
building businesses

Overview



SIP

Cross-ministerial **S**trategic **I**nnovation promotion **P**rogram

SIP 2nd FY2018~FY2022

One of 12 SIP themes ▲

Data convergence

High degree of convergence between cyberspace and physical space.

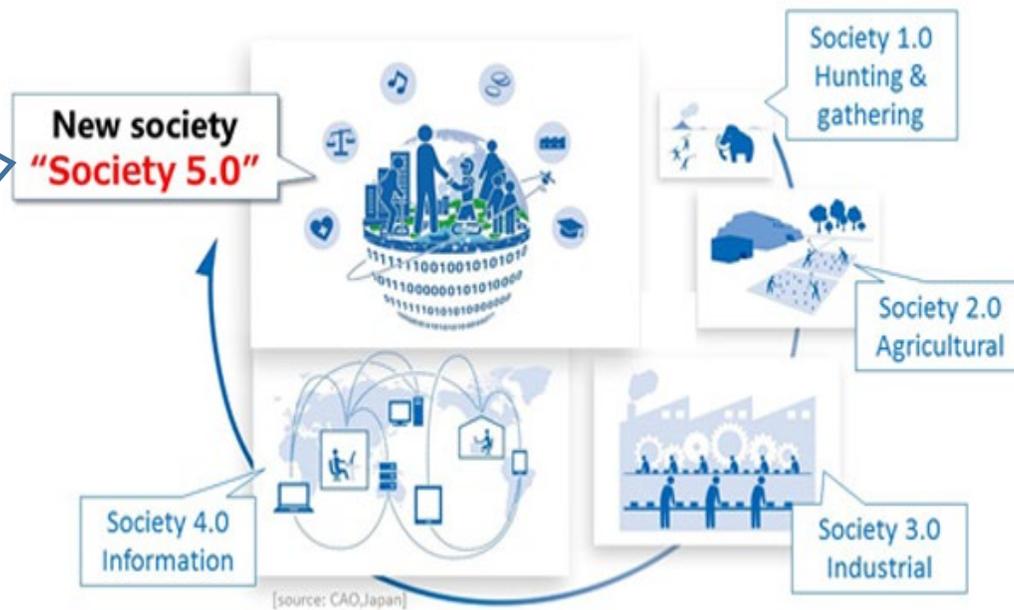
Economic advancement

+

Solution of social problems

Provision of products and services that are needed to the people that need them at the time they are needed.

Human-centered society in which anyone can enjoy a high quality of life full of vigor.



SIP-adus Initiative



SIP-adus

Automated driving for universal service

Cross-ministerial Strategic Innovation promotion Program

ADS (Automated Driving Systems)

Safe and secure mobility for all



Competition

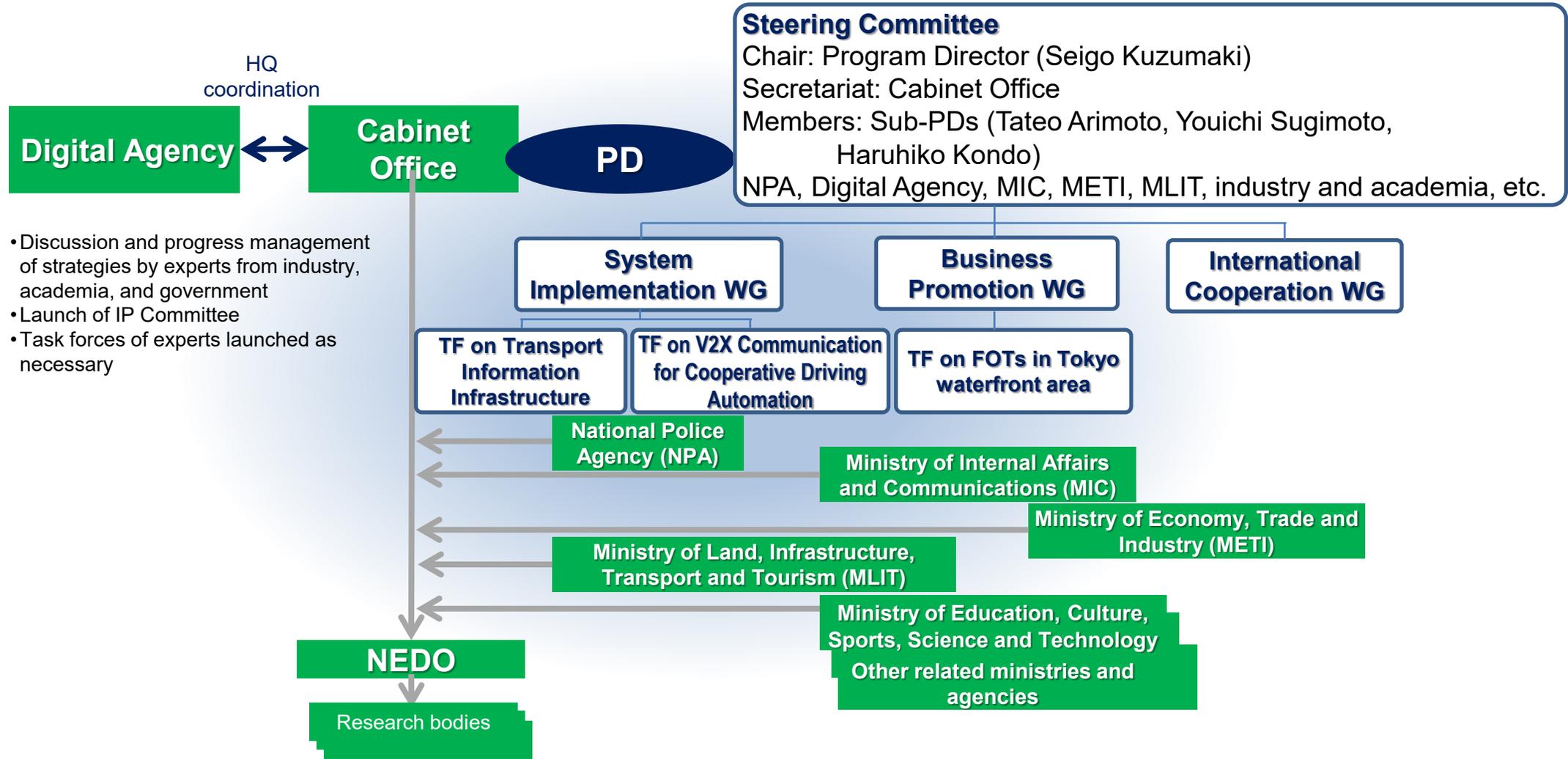


Cooperation

Realization of Society 5.0

- Technology
 - Dynamic Map
 - Safety Assurance
 - Cybersecurity
 - etc.
- International cooperation /Standardization
- Public acceptance
- Deregulation/Regulatory reform

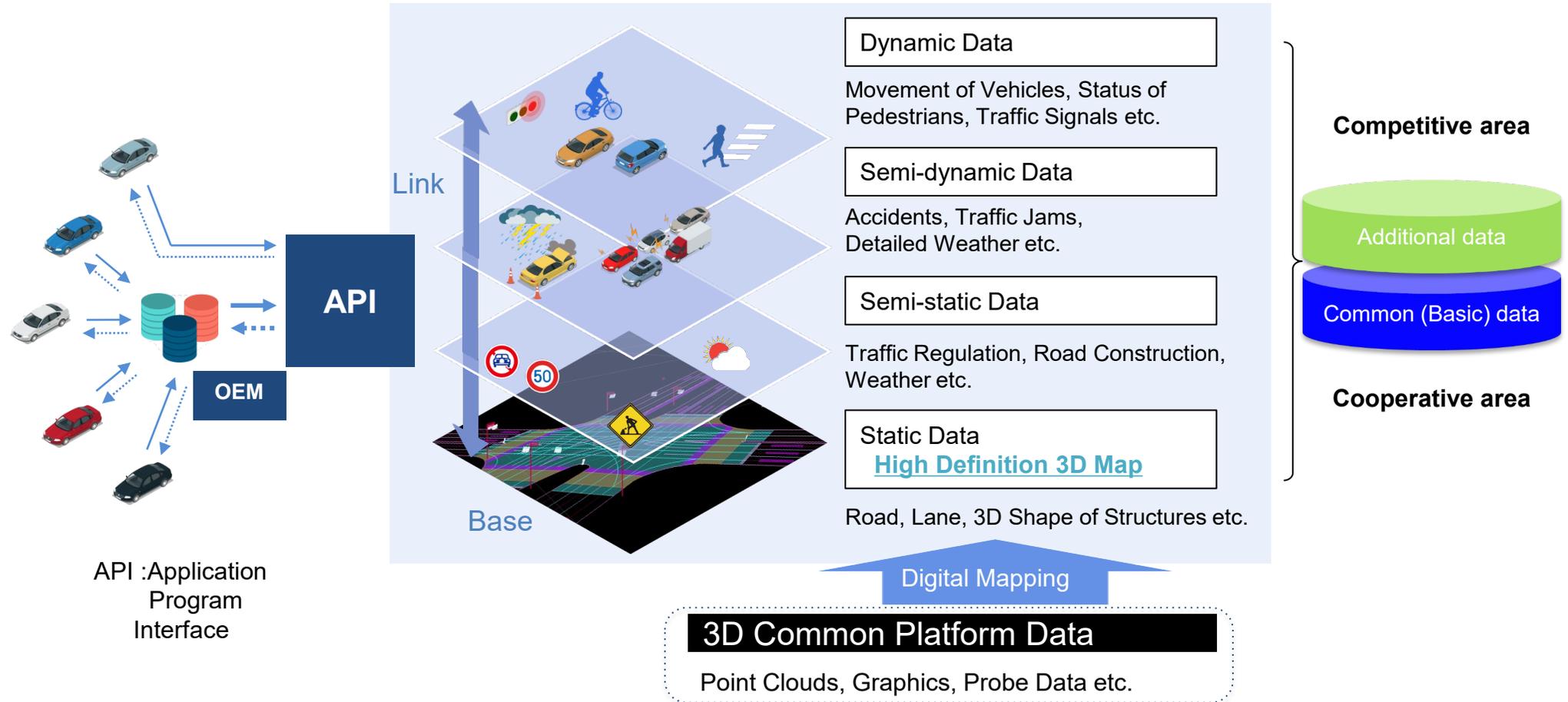
Promoting structure of SIP-adus



- Discussion and progress management of strategies by experts from industry, academia, and government
- Launch of IP Committee
- Task forces of experts launched as necessary

Dynamic map

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



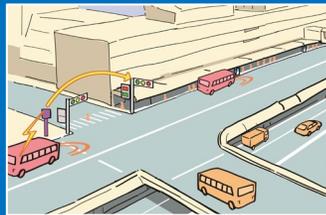
Field Operational Tests in Tokyo

- Promoting standardization in an internationally open experimental environment on public roads with mixed traffic
- Promoting R&D by drawing out private investment through a matching fund format with industry-academia-government collaboration
- Improving measures to foster public acceptance with planning test drive events, etc.



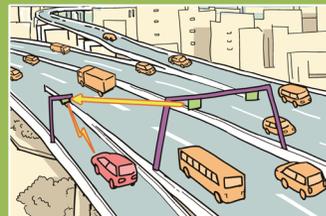
(a)Tokyo Waterfront City area

- Traffic signal info. via V2I and V2N
- Emergency vehicle info. via V2N, etc.



(b)Haneda Airport area

- Traffic signal info. via V2I
- Magnetic marker
- Bus stop, designated lane for bus service



(c)Metropolitan Expressway

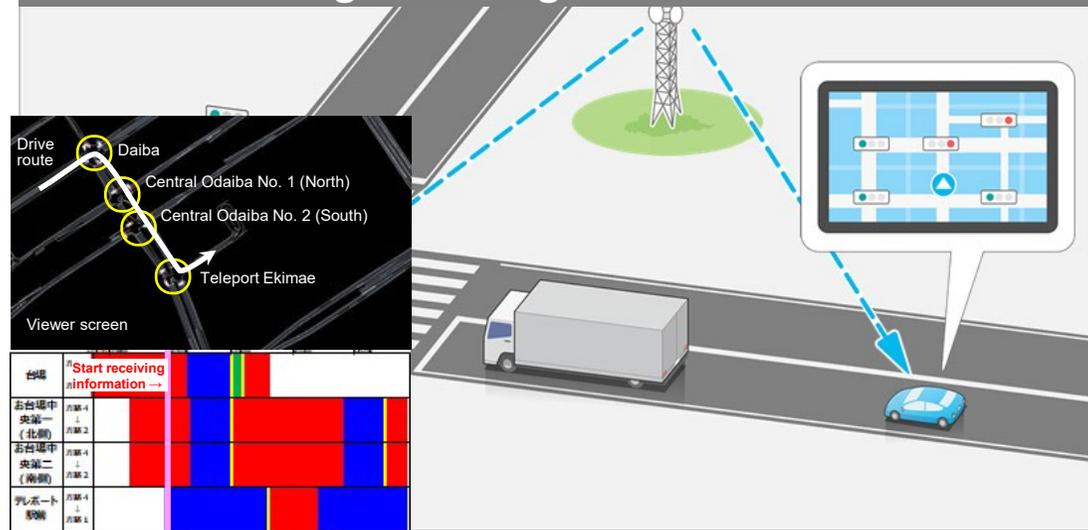
- Merging assistance info. via V2I
- Lane-level traffic congestion info. via V2N
- Precise & detailed weather info. via V2N, etc.



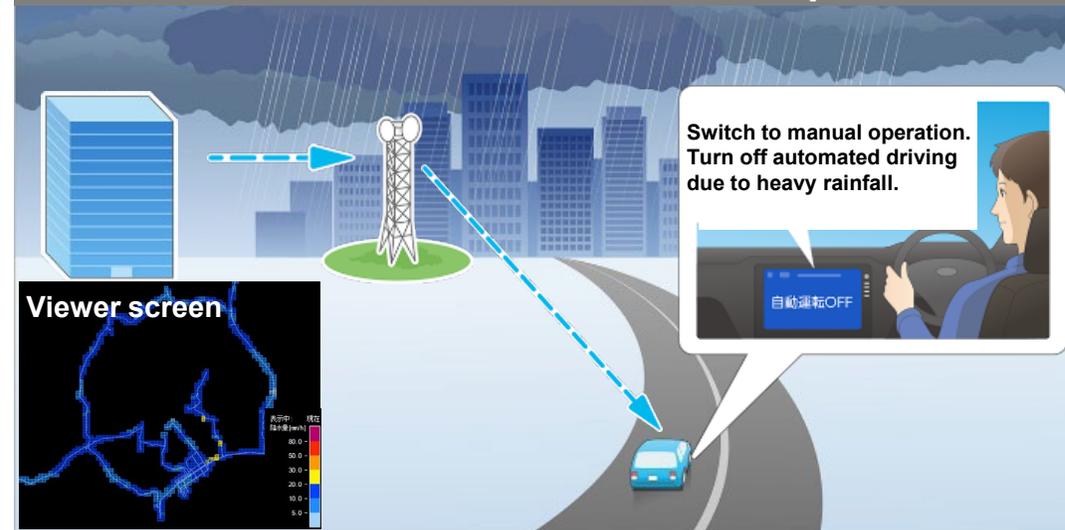
✓ 29 entities with 100 vehicles

Traffic environment information via V2N

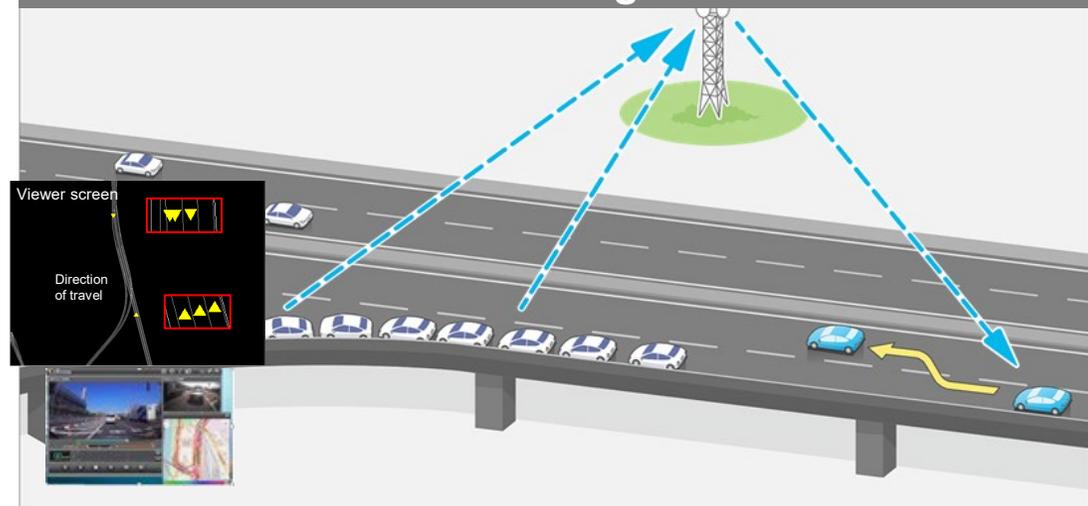
Driving assistance and automated driving using traffic signal information



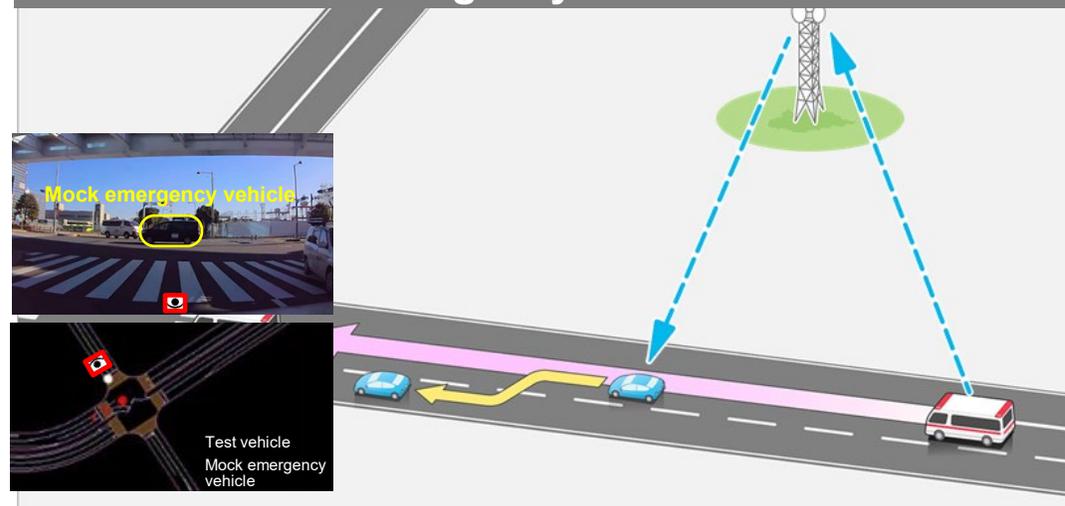
Early preparation based on forecasts of sudden downpours, etc.



Smooth lane change with lane-level traffic congestion information



Alert and evacuation of approaching emergency vehicles



Safety Assurance

- Developing a simulation platform that replaces real vehicle evaluations with sensor modelling that is highly consistent with real phenomena, in order to perform reproducible safety evaluations of automated driving in various traffic environments.

Real experimental test



Virtual test



Highly consistent sensor modeling

Camera Recognition Evaluation Example

- Perform DIVP® simulation for scenario defined in SDM-Generator: Correct value Bounding box (BBox) and camera recognition outcome are compared, and recognition performance validated

■ Recognition performance validation by DIVP® simulation

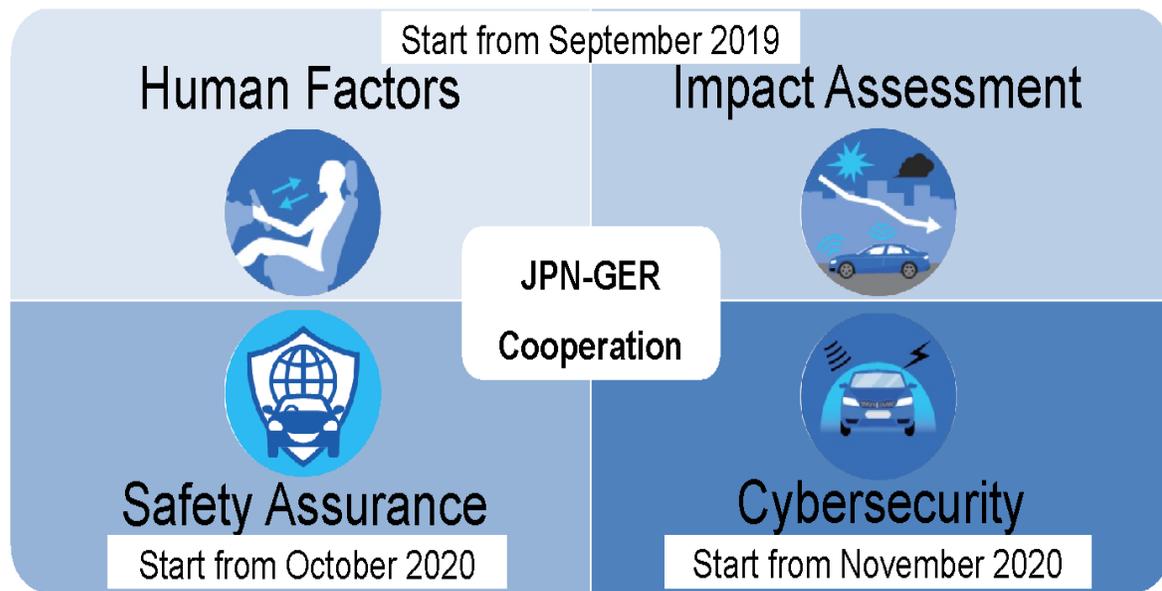
※ Recognition algorithm uses NVIDIA sample

Waiting for
right turn
at intersection



International cooperation

➤ Japan-Germany research cooperation



➤ Japan-EU research cooperation

Examples of cooperation between projects

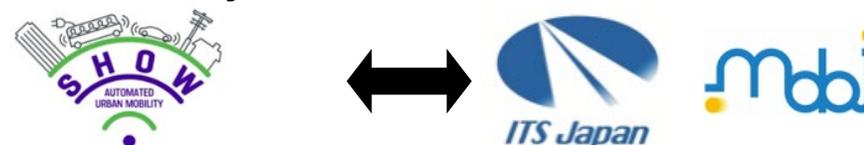
▪ Human Factors



▪ Safety Assurance



▪ Automated Mobility Services



➤ SIP-adus Workshop 2022

✓ **Date : October 11-13, 2022**

✓ **Venue : Doshisha University Kyoto, Japan**

For the latest Information: <https://en.sip-adus.go.jp/evt/workshop2022/>

Check!

