An overview of SIP-adus

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SIP
Cabinet Office

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

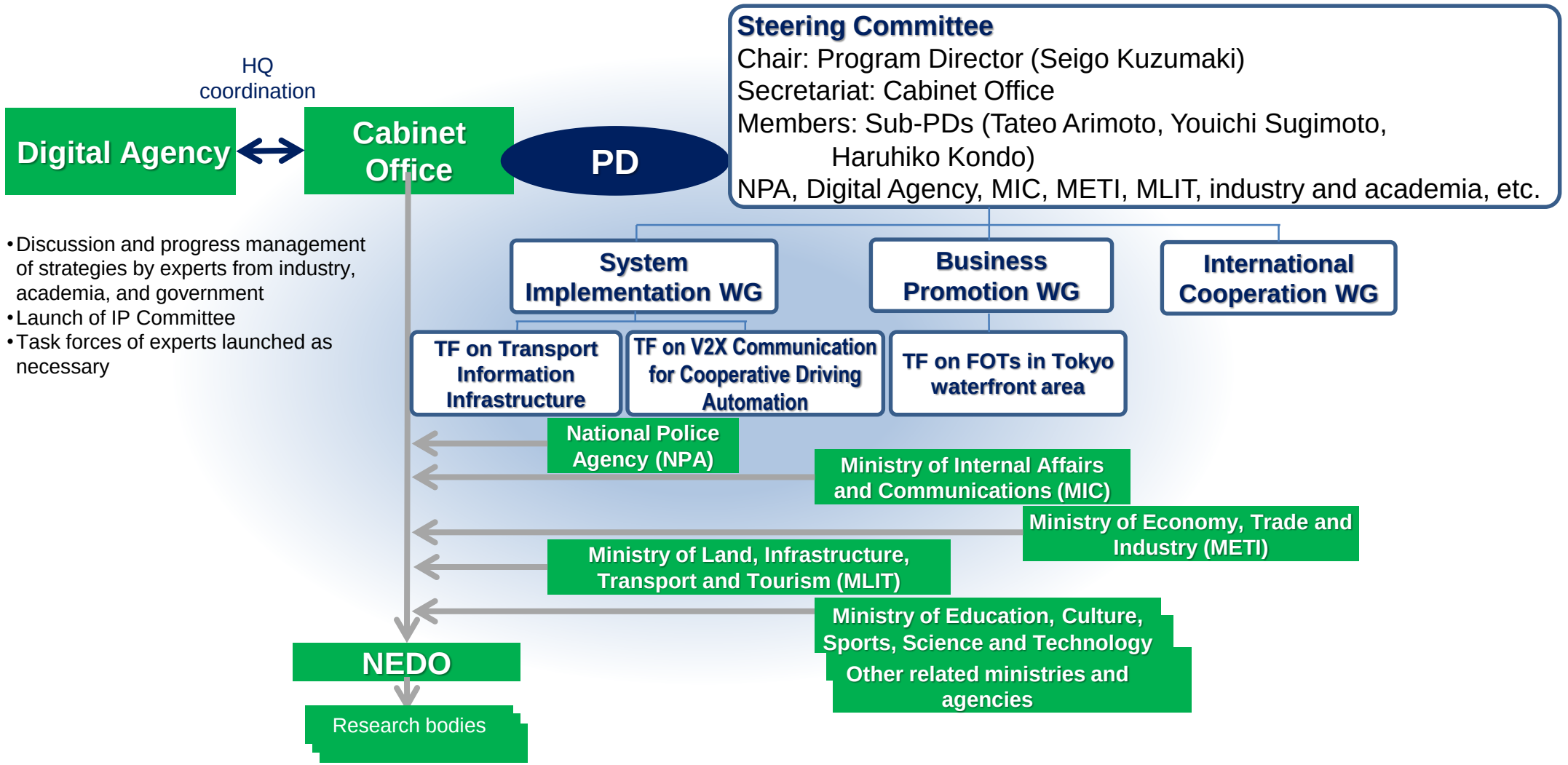
Realization of Society 5.0

- Technology
  - Dynamic Map
  - Safety Assurance
  - Cybersecurity

  etc.

- International cooperation /Standardization
- Public acceptance
- Deregulation/Regulatory reform

Promoting structure of SIP-adus



(Ⅰ) Development and validation of automated driving systems (FOTs*1)

*1 FOTs : Field Operational Tests

relevant sessions

➢ FOTs in the Tokyo waterfront area

Dynamic map | Poster session

- Promote standardization in an internationally open experimental environment on public roads with mixed traffic
- Promote R&D with industry-academia-government collaboration
- 29 entities with 100 vehicles
- Foster public acceptance with test drive events

(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.

(Ⅰ) Development and validation of automated driving systems (FOTs*1)

➢ FOTs for social implementation of mobility and logistics services in rural areas

Government | Poster session

- Social implementation of automated driving services in rural areas
- Surveys and research on permanent implementation

(Ⅱ) Development of platform technologies for practical application

➢ Construction and distribution of traffic environment information

Dynamic map | Poster session

- Enhance safety for automated driving in a complex traffic environment
- Constructed and distributed traffic environment information via V2I and/or V2N for the FOTs
  - Driving assistance and automated driving using traffic signal information
  - Smooth lane change with lane-level traffic congestion information
  - Early preparation based on radar data on sudden torrential rain
  - Alert and evacuation of approaching emergency vehicles

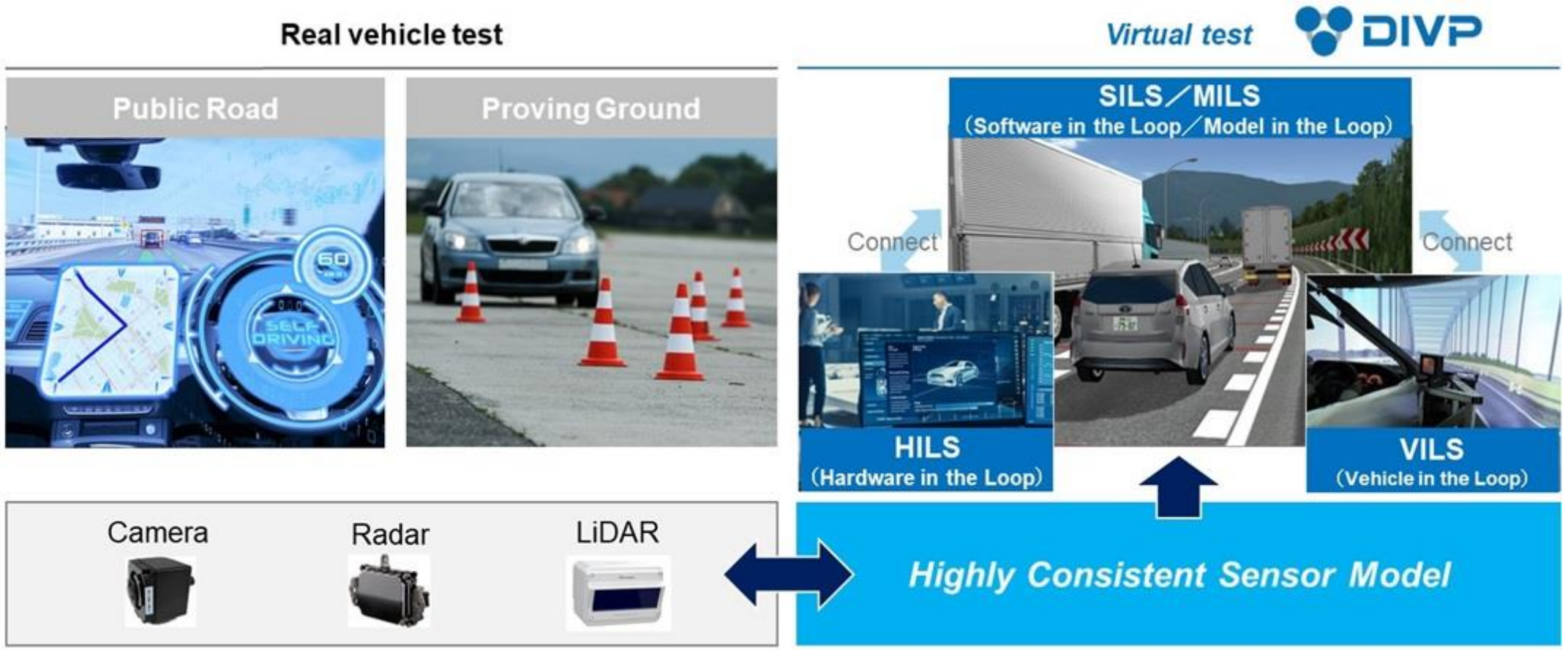
➢ Validation of automated vehicle safety using virtual space

Safety Assurance | Poster session

- Safety and reliability is the most important factor in utilization of AD vehicles
- A virtual validation platform developed and commercialized

Virtual Validation Platform for AD-Safety Assurance

- Highly Consistent Sensor Modeling is a key enabler of virtual validation for AD/ADAS safety assurance



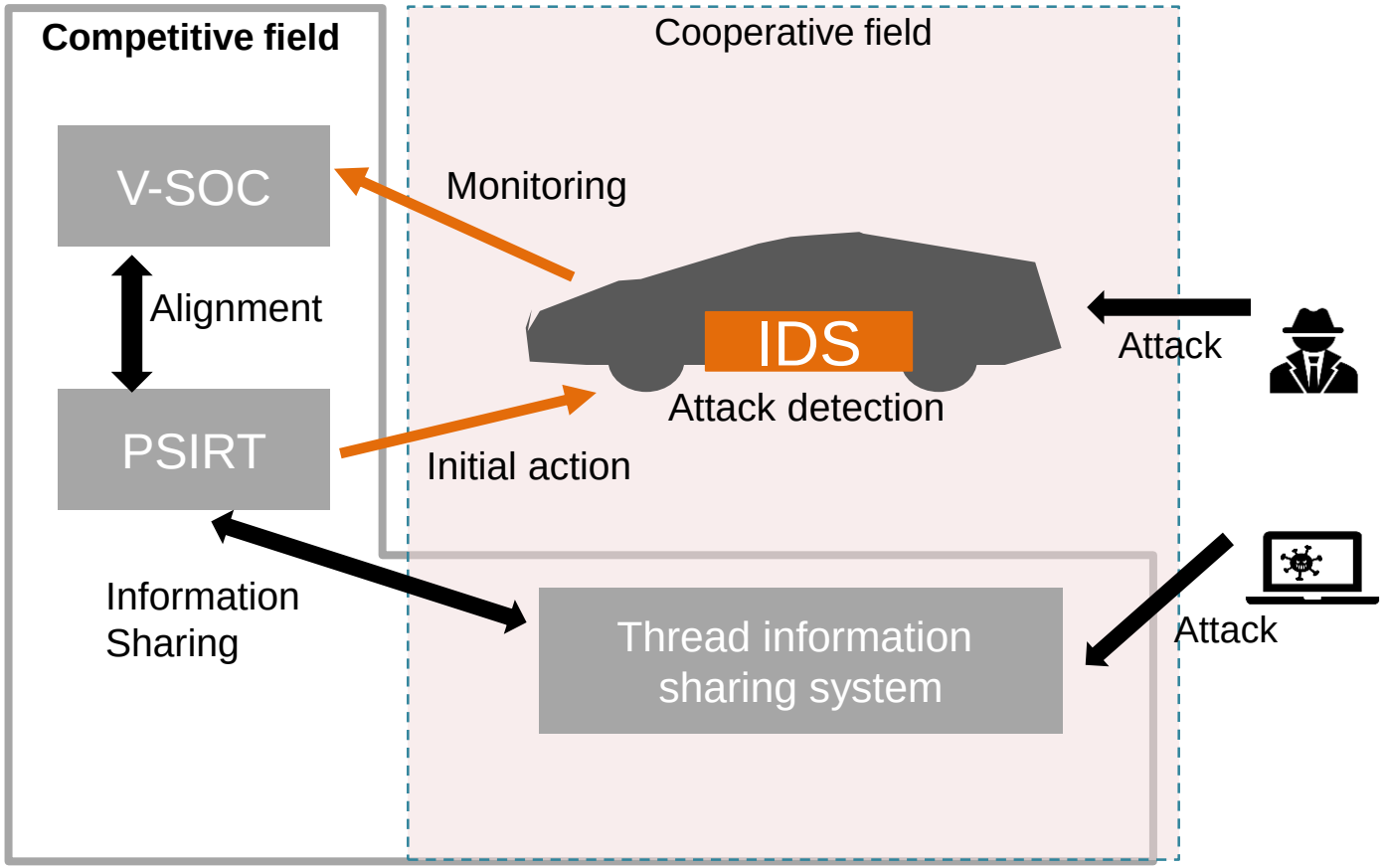
Source : Kanagawa Institute of technology, MITSUBISHI PRECISION CO.,LTD., DENSO Corporation, Pioneer Smart Sensing Innovations Corporation, Hitachi Automotive Systems, Ltd.

DIVP; Driving Intelligence Validation Platform

Evaluation methodologies for intrusion detection systems

Cybersecurity | Poster session

◆ Establish IDS evaluation guidelines contributing to post-production security in automotive industry



※V-SOC : Vehicle-Security Operation Center
※PSIRT : Product Security Incident Response Team

IDS: Intrusion Detection System

(1) Development of IDS Evaluation Method and Guidelines

- Developed IDS (Intrusion Detection System) Evaluation Guidelines in cooperation with JASPER
- The guidelines transferred to JASPAR

JASPAR： Japan Automotive Software Platform and Architecture

(2) Research on connected car threat intelligence and initial response support

- Established a method for collecting and accumulating threat information in the automobile field in cooperation with J-Auto-ISAC
- The document to be transferred to J-Auto-ISAC

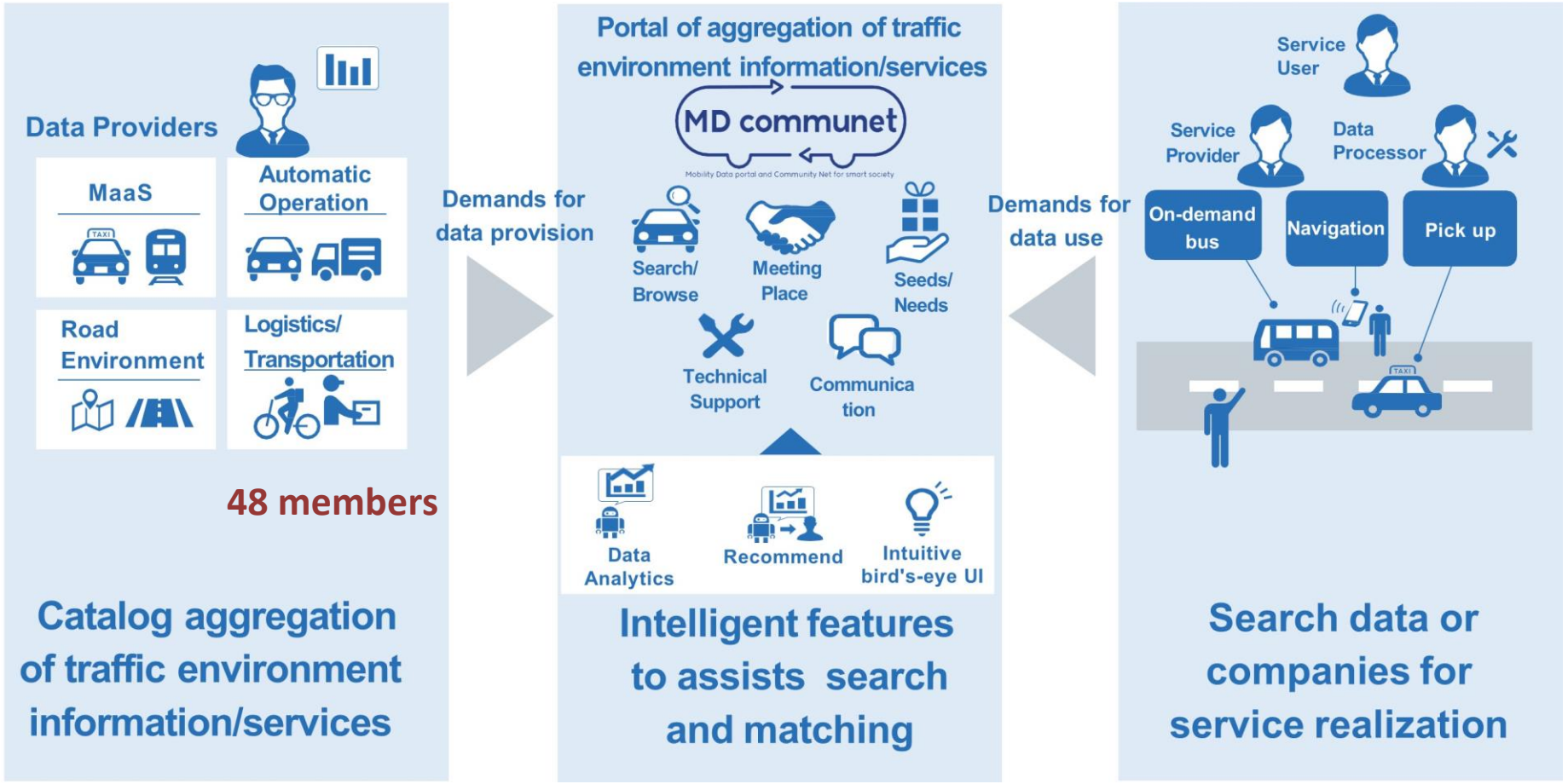
J-Auto-ISAC： Japan Automotive ISAC

Traffic environment info. portal: MD communet®

➢ Building and Promoting a Traffic Environment Information Portal Site(MD communet®)

Poster session

- Catalogue of various mobility related information on a portal site, “MD Communet”
- Provides opportunities to communicate among diversified users with a view to facilitate new business creation/business matching



HMI/Safety education

Human Factor | Poster session

- Communication methods between automated vehicles and traffic participants
- Driver-system interaction / HMI enhancing drivers' takeover
- Education and training for users

(Ⅲ) Fostering public acceptance of automated driving

➢ Projects to foster public acceptance

- Conferences and events for raising public awareness on AD
- Online talk shows on issues related to AD

➢ Surveys and evaluations for fostering public acceptance

Poster session

- Surveys on citizen's attitude to AD with more than 10,000 respondents

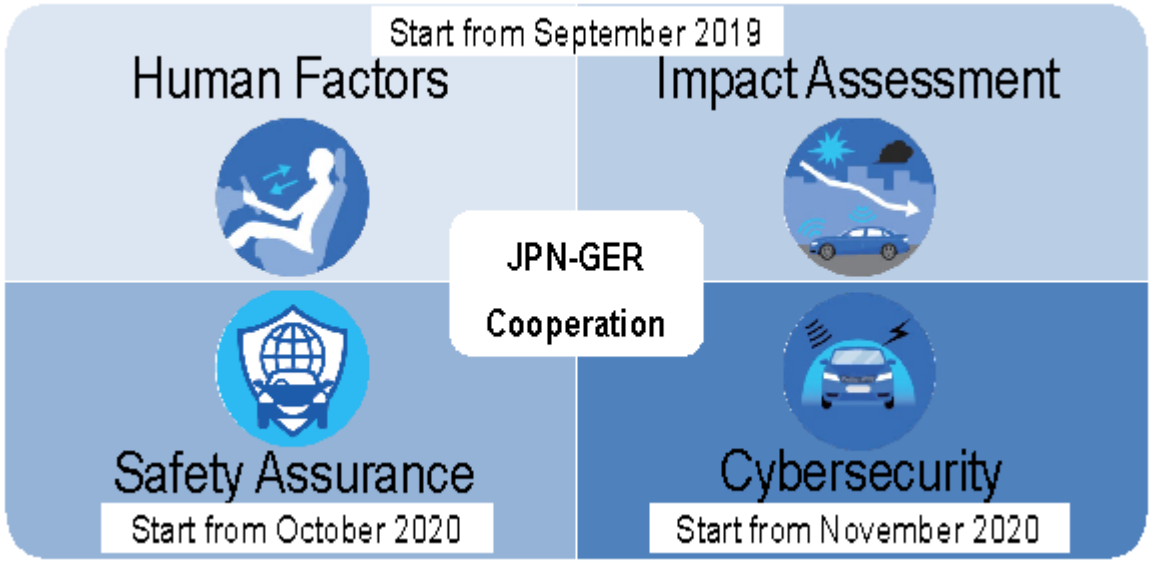
➢ Development of methodologies for assessing socioeconomic impacts of AD

Impact Assessment　Poster session

- Studies on impacts on traffic and traffic accidents with the estimated diffusion of automated and driver-assisted vehicles

(Ⅳ) International cooperation

➢ Japan-Germany research cooperation



➢ Japan-EU research cooperation

Examples of cooperation between projects

- **Human Factors**

HADRIAN ⟷ SIP SIP-adus Innovation of Automated Driving for Universal Services

- **Safety Assurance**

HEADSTART ⟷ SAKURA Safety Assurance KUdos for Reliable Autonomous Vehicles SIP

- **Automated Mobility Services**

SHOW AUTOMATED URBAN MOBILITY ⟷ ITS Japan mobi

Thank you very much for your attention!