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Next generation mobility by automated driving —Implementation by establishment of business ecosystem

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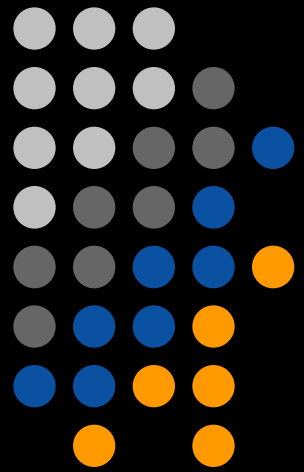

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Sustainable Transportation

- Low Emission & Energy Saving
- Safety & Security
- Comfort & Healthy
- Anti- disaster & Emergency
- Social Changes for Aging Society

Connected and Automated driving
for 2020 Tokyo Olympic & Paralympic

Ecosystem for automated driving

In the economic and IT society, companies and organizations are widely co-existence with harmony

Academic research
- University
- Research institute

User
- Driver
- Pedestrian & other road user

Insurance
Responsibility of accident
Product liability

Manufacturing industry
OEM
Supllyer

Automation

Admiration
Road and Transport management
Regulation

Service
Mobility provider

Transporter
- Logistics home delivery

Garbage collection

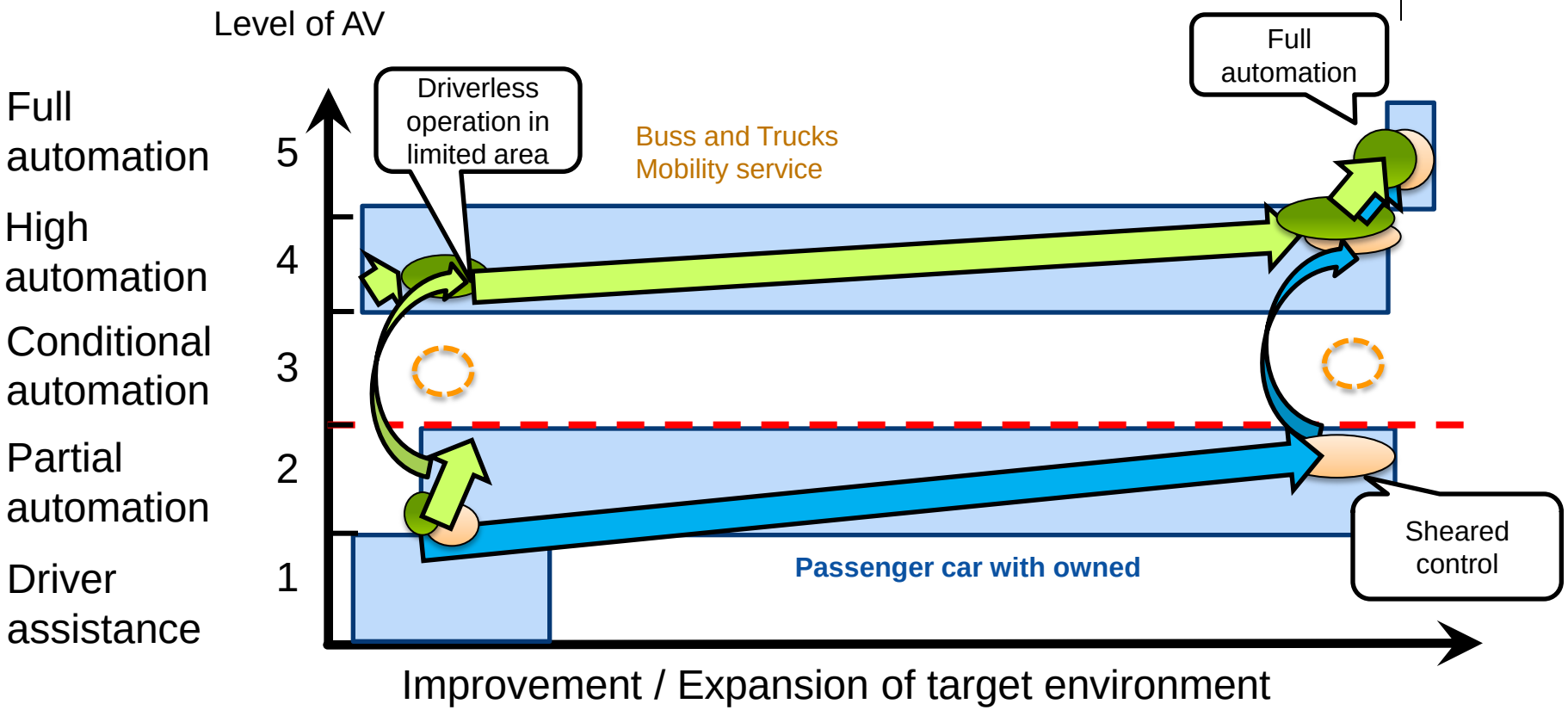
ICT Platform
IoT Software AI

All of these partners are committed, that can benefit.
There is a need for ecosystem that ensures social acceptability

Acceptability evaluation, it is necessary to take into account the ecosystem

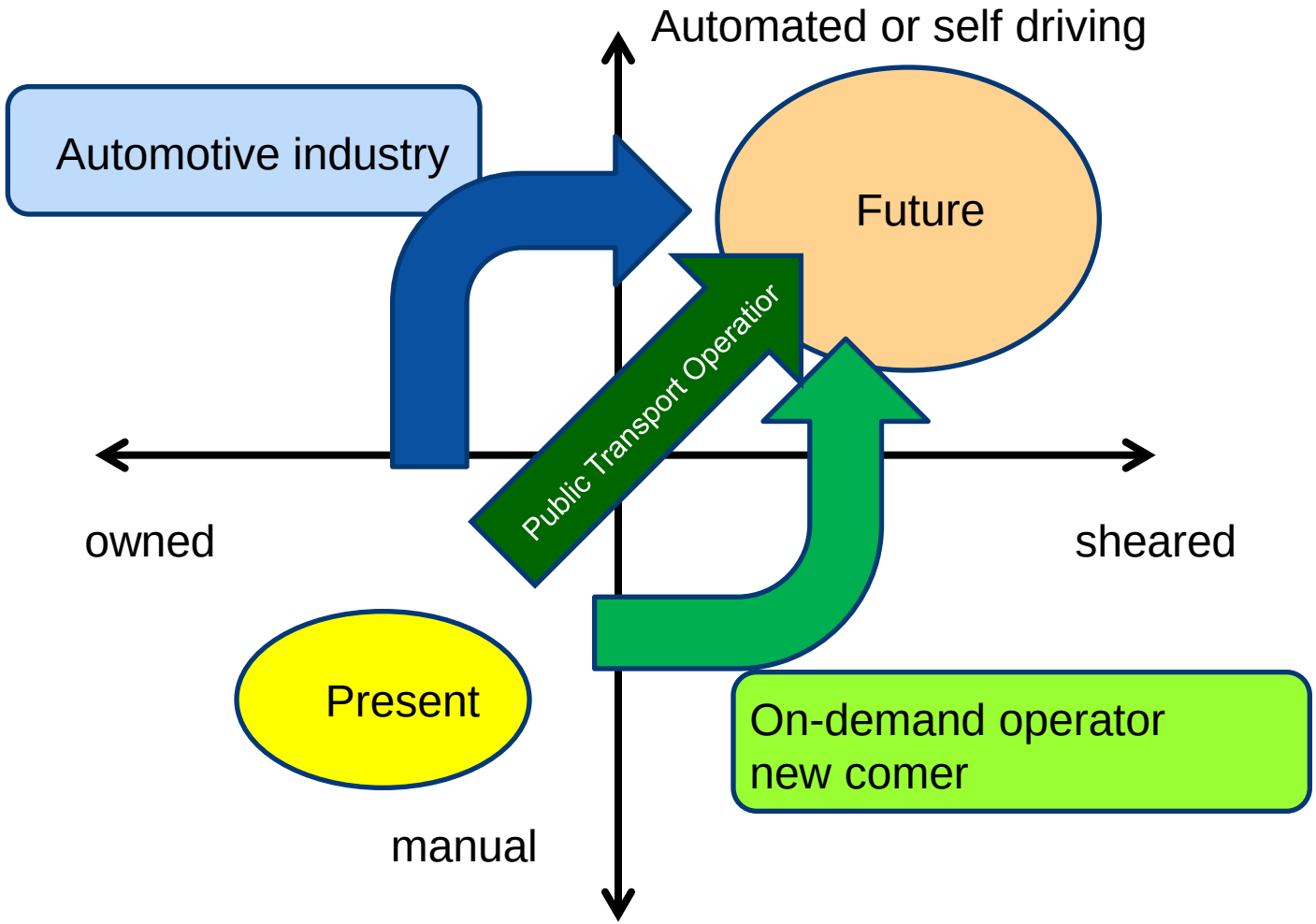
Society 5.0

Automated Driving: Progress scenario



Source: http://www.sip-adus.jp/wp/wp-content/uploads/cao_2016_cao1-11_01.pdf

Mobility as a Service and social change



Public Transport

Transportation capacity depending on mode

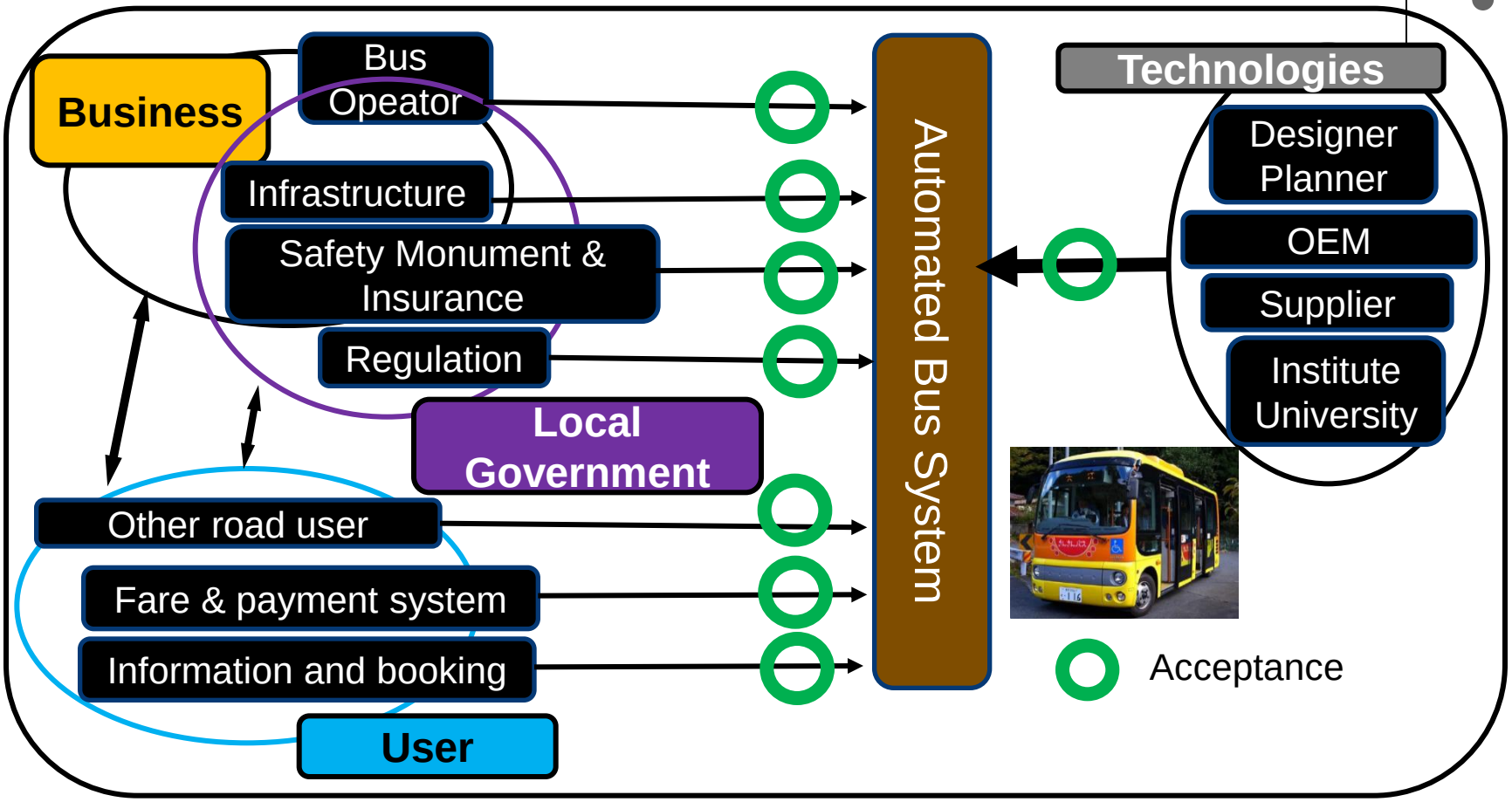
- Passenger automobile including automated driving
  - Less than 1000 persons / hour
    - Point of issue: Less capacity and energy consumption
- Mass transit
  - More than 6000 persons / hour for subway, trains
  - 2000 persons / hour for buses and LRT
    - Point of issue: cost of initial construction and operation
- Personal mobility vehicle
  - Expected 2000 persons / hour
  - Speed and acceptance for elderly people
    - Point of issue: R&D is necessary

(Transportation capacity is converted into the unit of road or guideway width for the purpose of comparison between the modes）

Automated Bus Operation for Social Acceptance

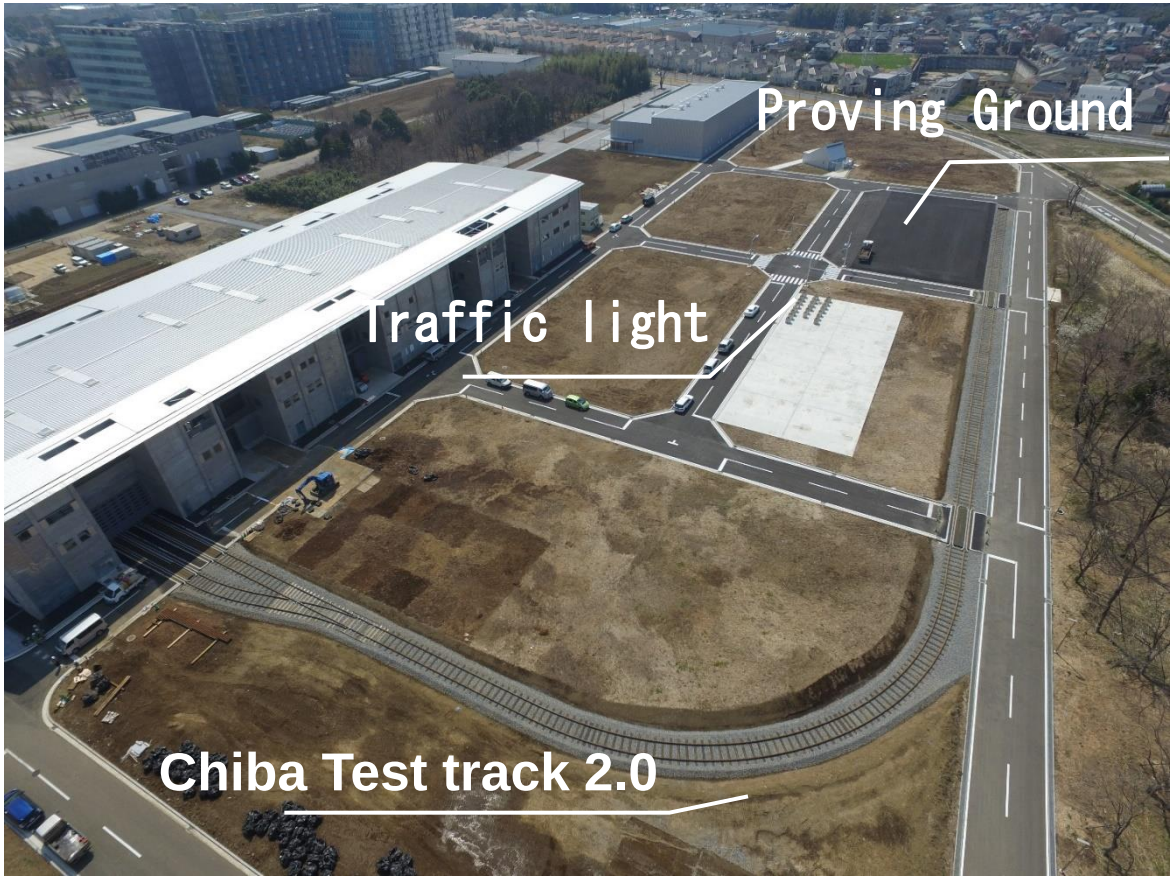
- Service by Mobility Provider
  - Regulation, insurance, maintenance, operation
- Flexible capacity
  - ART or BRT for urban transport
  - Small cabin for underpopulated areas
- The other merits
  - V2V and V2I
  - Advanced technology
  - Limited area and route for infrastructure

Ecosystem for Automated Bus Service



Platformer and Organizer have important role to achieve ecosystem as final goal in collaboration with SIP-adus.

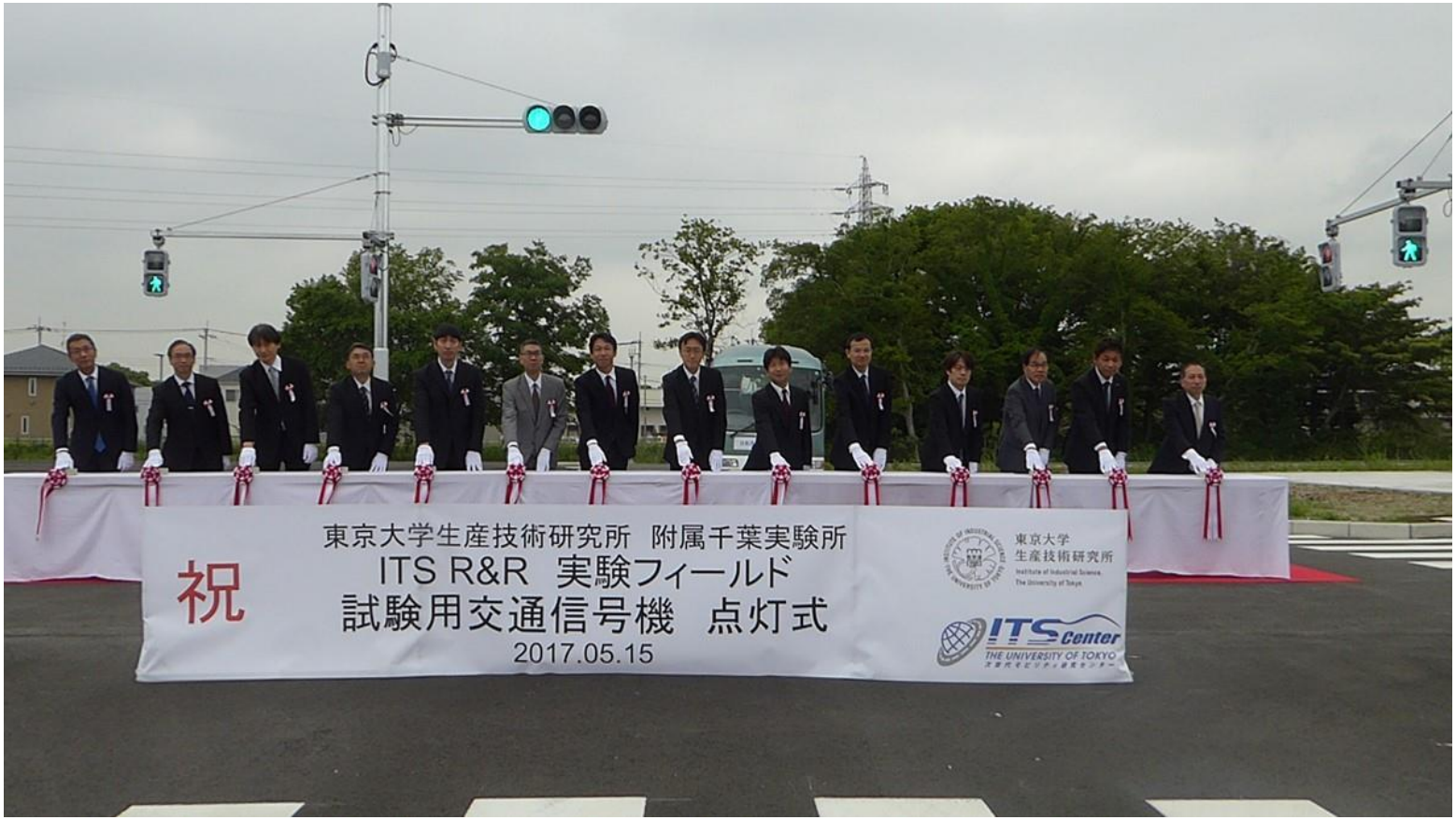
The University of Tokyo
IIS Chiba Experiment Station
constricted ITS R&R Experiment Fields at Kashiwa



April in 2017 open

University-Industry Collaboration：
Advanced Mobility Research Center (ITS Center)
　＋　Automobile, Railway, Transit, Road Operator
Collaboration Study

Opening Ceremony
2017 May 15



Guests: Mayer of Kashiwa City, Ministry of Land, Infrastructure, Transport and Tourism, National Police Agency, Ministry of Economy, ITS Japan, JARI, etc.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DAIDOC
自動運転バス デモ走行中
内閣府 SIP
SB Drive

Automated Bus Test Run

Co-operation：Advance Smart Mobility, SB Drive


自動運転バス デモ走行中
内閣府
SIP
先進モビリティ
SB Drive

Okinawa Automated Bus Experiment on Public Road in March 2017

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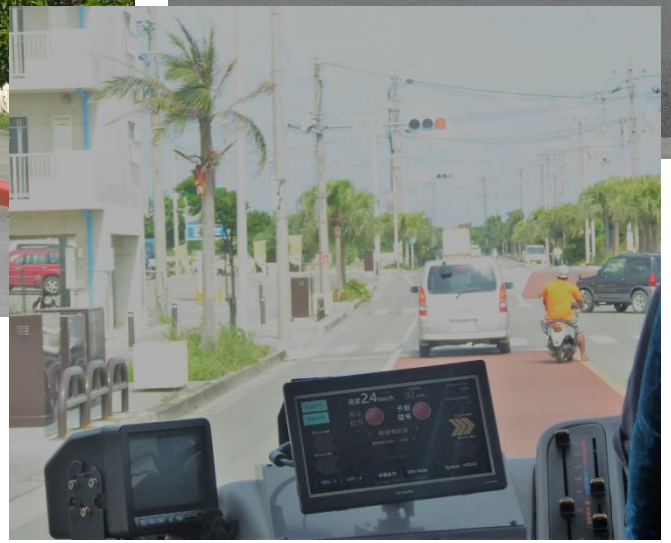
Precise Docking Control
4cm ± 2cm

Ishigaki island
2017.6.25-7.8



Collaborative operation with traffic light

Roadside station based automated bus operation test

Oku-eigenji- keiryu-no-sato
November 11, 2017

Magnetic marker
2m interval on road center

ITS World Congress @Montreal October 2017

Level 4 Driverless bus on road of public park (Shiba park Tokyo) 2017.7.17-23

Concluding Remarks

- Business eco-system, mobility as a service are important issue for automated bus system as next generation mobility
- Filed operational tests are conducted in Japan in public road until Level 4.
- Social acceptance, i.e., passenger's acceptance and bus operator's acceptance are tested.

Thank you very much for kind attention!