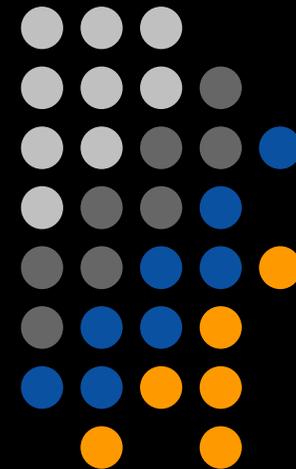


# Ecosystem of Automated Driving for Next Generation Transport



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# Sustainable Transportation

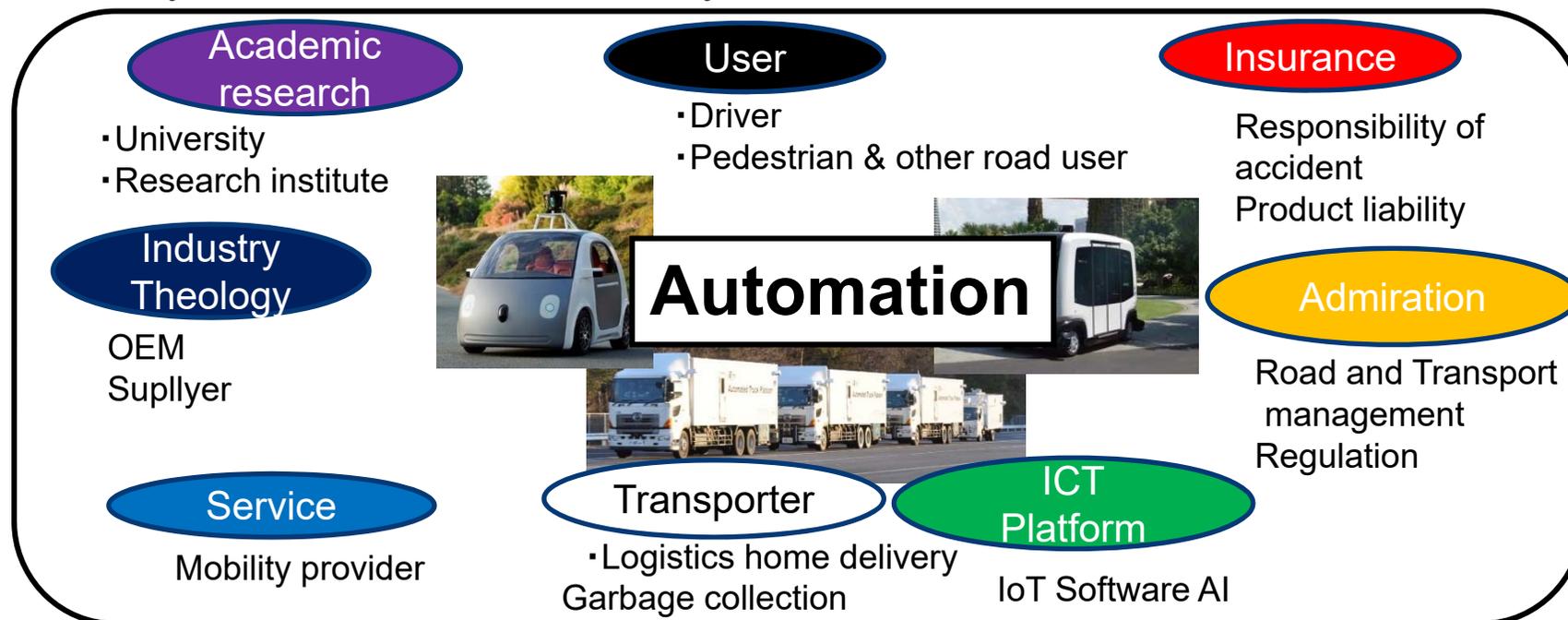
- Low Emission & Energy Saving
- Safety & Security
- Comfort & Healthy
- Anti- disaster & Emergency
- Social Changes for Aging Society

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



**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

Institute of Industrial Science, the University of Tokyo SUDA Lab.



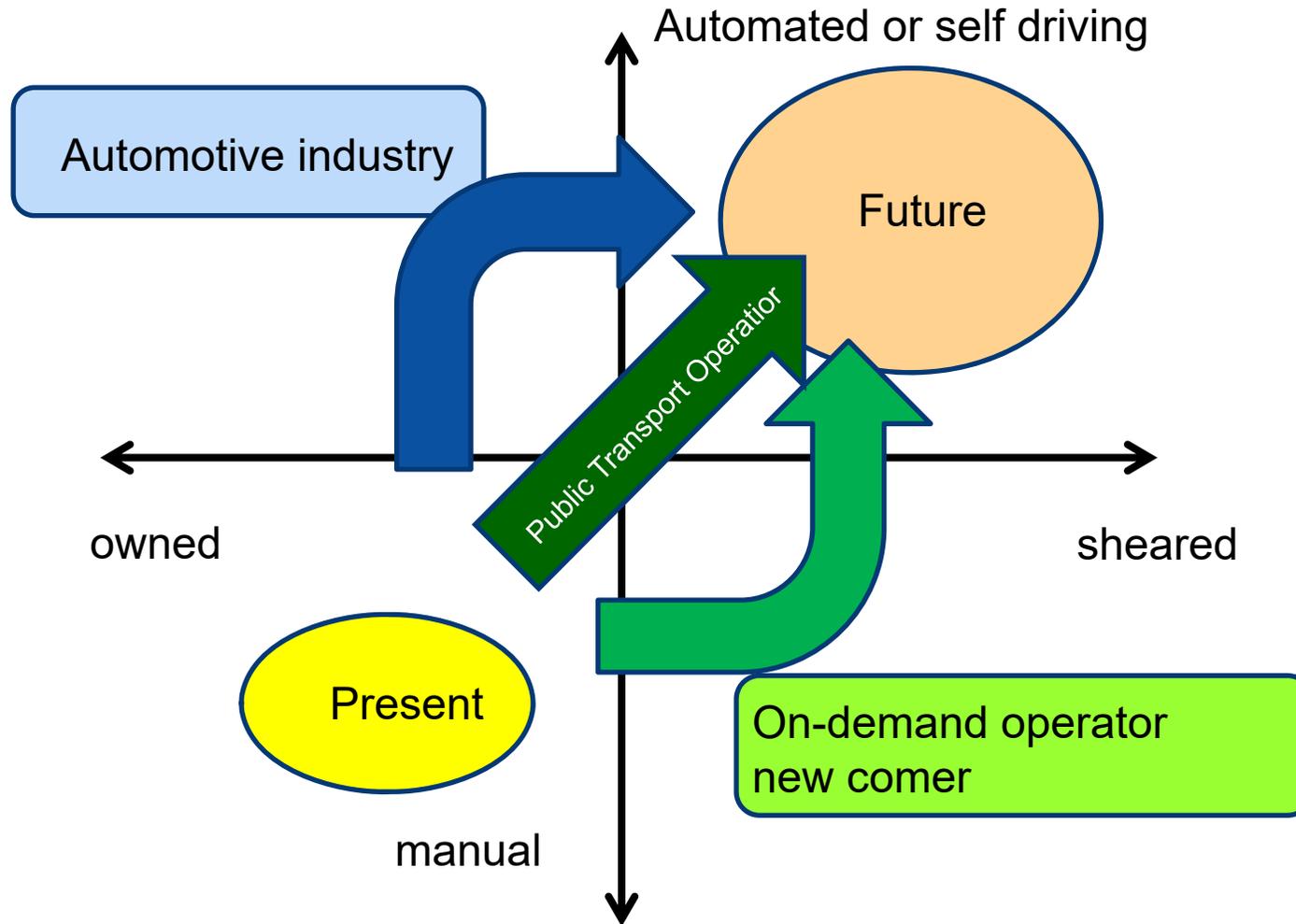


# Next Generation Transport

## Major discussion

- How to use automated vehicles for next generation transport: *Implementation of next generation and automated transport strategies for the 2020 Tokyo Olympic / Paralympic Games (bus rapid transit, automated docking)*
- Public transport: *Bus platooning, automation*
- Mobility providers and operators: *private companies, public services, peer to peer and on-demand services, shared mobility*
- Universal service, regional service: *suburban areas, first- and last-mile service, rural service*

# 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

# ART Advanced Rapid Transit



(Purpose) 1.To contribute the next evolution of Tokyo and Japan as a whole  
 2.Utilizing ITS, Automated driving Technologies and ITC,  
 (1)Create the world standard accessibility  
 (2)Develop the integrated rapid transit

**Advanced PTPS(Public Transportation Priority System)**  
 \*Rapid and On-time operation

**Advanced operation system with automated control systems**  
 \*Seamless and stress free connection

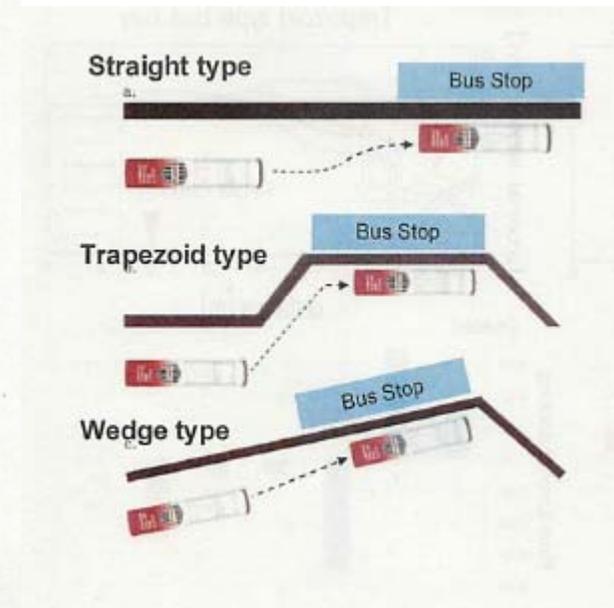
**Automated acceleration control**  
 \*Smooth & Comfortable ride

**Automated precise docking control**  
 \*Accessibility  
 \*Short time and Safety boarding

**Advanced Driver Assistance**  
 \*Traffic accidents prevention  
 \*Driver burden reduction

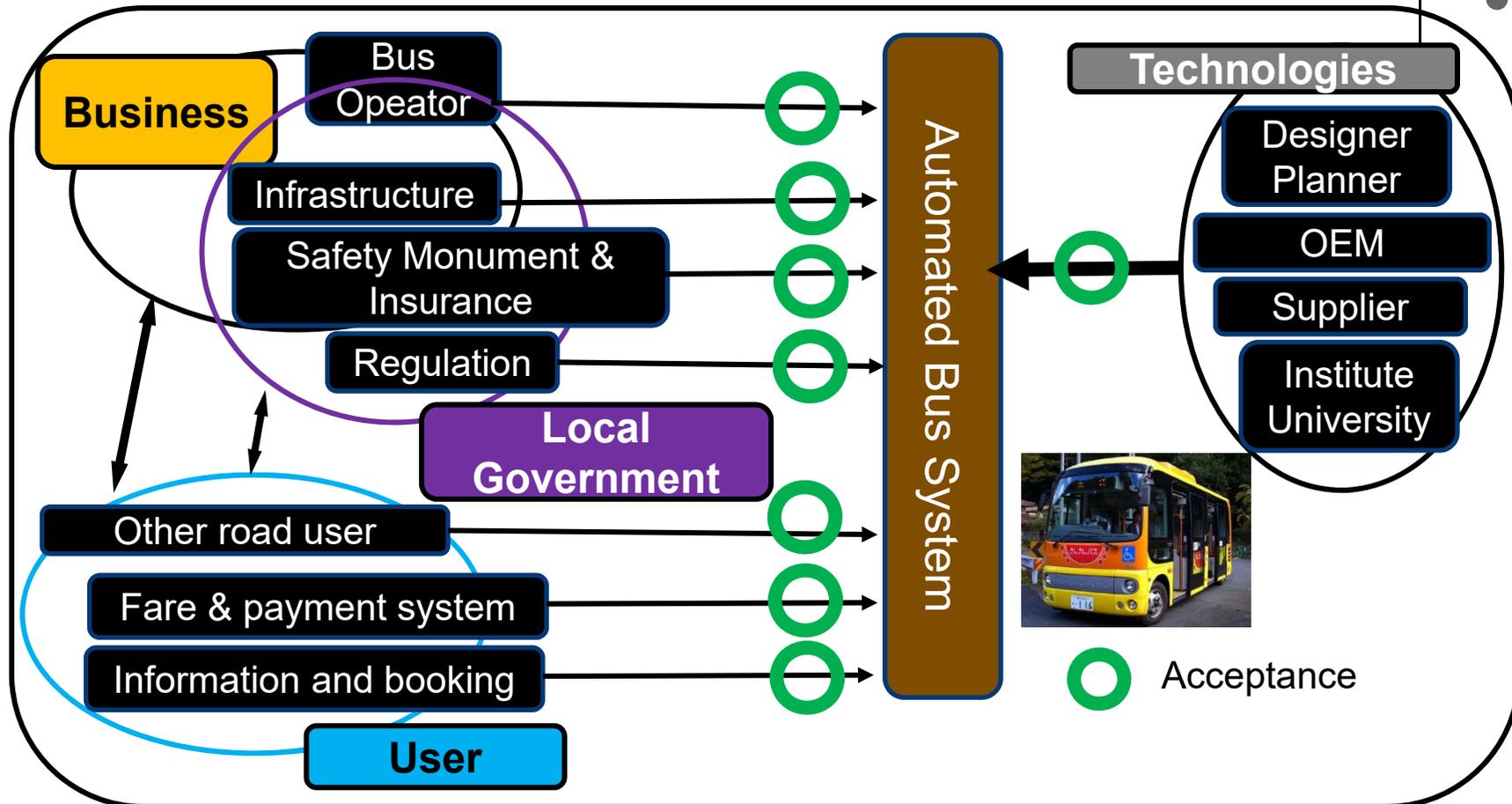
**Universal built-in seats  
 Contactless electronic charging**  
 \*Cabin Safety and Convenience

**Cooperative ACC**  
 \*Traffic congestion/CO2 reduction



Precise Docking Control  
 Updated from E-ITS

# Ecosystem for Automated Bus Service



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

# Outline of AS-MOBI (advanced smart Mobility Co. Ltd.)



- AS-MOBI is new venture company established on June 2014 in Japan.
- The mission of AS-MOBI is to contribute to the implementation of automated vehicles in Japan as designer/planner.
- AS-MOBI achieves the mission in strong collaboration with the University of Tokyo and automotive industries.
- The core members of AS-MOBI are researchers related with automated truck platoon project by NEDO and IMTS by TOYOTA.



Soft Bank and AS-MOBI established SB Drive  
in April 2016



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**Smart Mobility = SB Drive**





# Concluding Remarks

- Consideration of Ecosystem is important for next generation transport.
- Automated Bus Service is best possible solution for the elderly and persons with reduced mobility, or for those living in underpopulated areas.
- Efforts for ecosystem just started with business people, universities and governments in Japan as SIP-adus.