Challenge to establish ecosystem of mobility innovation by automated driving
—Academic collaboration and practice

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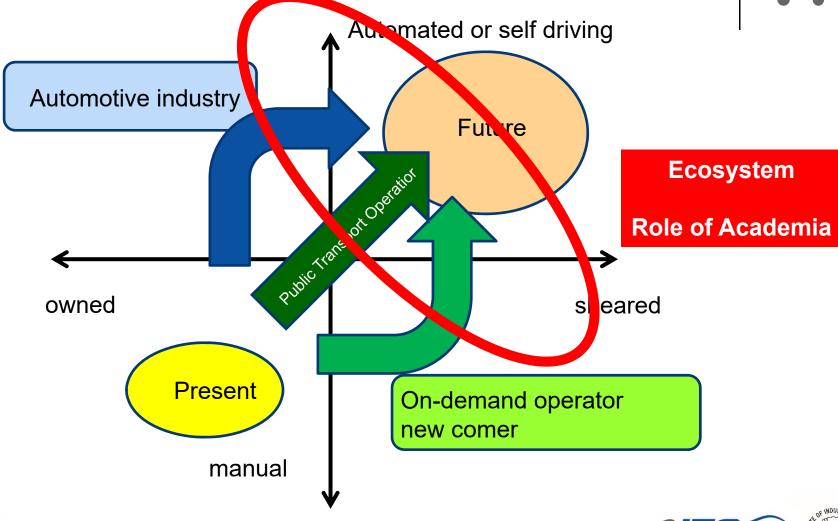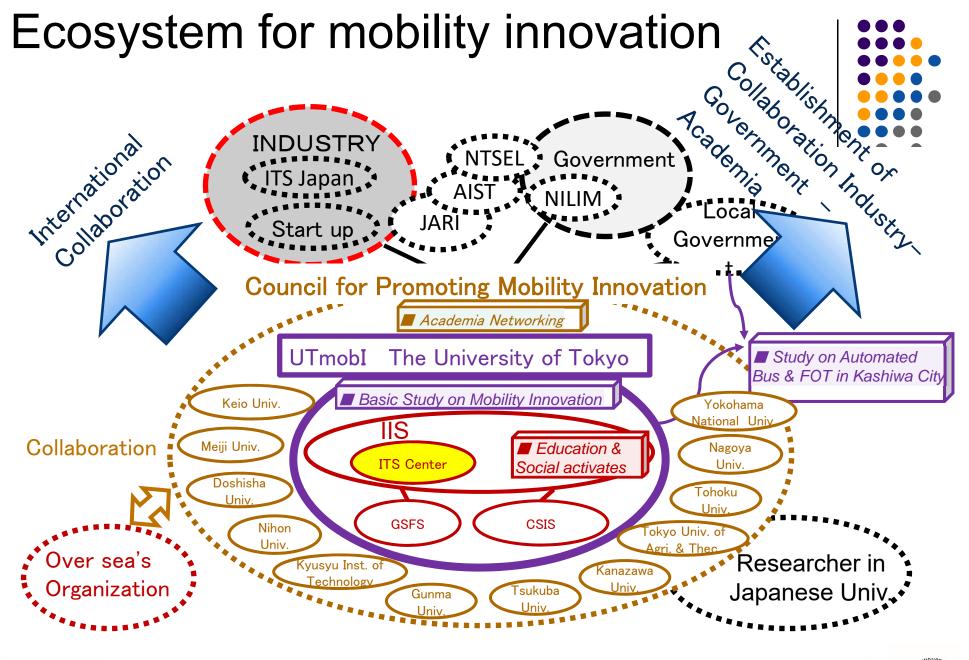
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先進モビリティ連携研究センター

Mobility as a Service and social change

Automated or self driving

Automotive industry

Future

Ecosystem

Role of Academia

Public Transport Operator

owned

shared

Present

On-demand operator new comer

manual

Ecosystem for mobility innovation

INDUSTRY
- ITS Japan
- Start up

NTSEL
AIST
JARI

Government
- NILIM

Local Government

International Collaboration

Establishment of Collaboration Industry – Government – Academia

Council for Promoting Mobility Innovation

■ Academia Networking

UTmobI The University of Tokyo

■ Basic Study on Mobility Innovation

IIS
- ITS Center
- GSFS
- CSIS

■ Education & Social activates

■ Study on Automated Bus & FOT in Kashiwa City

Collaboration

Over sea's Organization

Keio Univ.
Meiji Univ.
Doshisha Univ.
Nihon Univ.
Kyusyu Inst. of Technology
Gunma Univ.
Tsukuba Univ.

Yokohama National Univ.
Nagoya Univ.
Tohoku Univ.
Tokyo Univ. of Agri. & Thec.
Kanazawa Univ.

Researcher in Japanese Univ.

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

Council for Promoting Mobility Innovation

Tohoku Univ.

Tsukuba Univ.

Gunma Univ.

The Univ. of Tokyo

Tokyo Univ. of Agriculture and Technology

Kanazawa Univ.

Doshisha Univ.

Kyushu Institute of Technology

Nihon Univ.

Meiji Univ.

Keio Univ.

Yokohama National Univ.

Nagoya Univ.

Established in March 2018

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

Mobility Innovation Liaison Meeting

- Basic survey program for promoting collaborative research with overseas research institutes related to automated driving by SIP

  - **Council for Promoting Mobility Innovation**
  - AIST; The National Institute of Advanced Industrial Science and Technology
  - NTSEL; The National Traffic Safety and Environment Laboratory
  - JARI ; Japan Automobile Research Institute
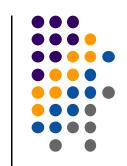
Council for Promoting Mobility Innovation

- United Organization of Universities encouraging automated driving.

- Promoting R & D activities effectively and efficiently at each university by knowing each other's strengths.

- By cooperating with each other, a cooperative system to gather the power of the academia in collaboration with the government and industry

- Secretary: The university of Tokyo.

Challenge to Mobility Innovation at The University of Tokyo

- Establishment of Mobility Innovation Collaborative Research Organization, The University of Tokyo

UTmobI

Institute of Industrial Science （IIS)

Graduate School of Frontier Sciences （GSFS)

Center for Spatial Information Science (CSIS)

Established in July, 2018 at Kashiwa Campus

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

Mobility Innovation Collaborative Research Organization (UTmobI), The Univ. of Tokyo

- 5 Faculties joined in July, 2019 from Hongo and Komaba Campus
  - Institute of Industrial Science （IIS）
  - Graduate School of Frontier Sciences （GSFS）
  - Center for Spatial Information Science (CSIS)
  - **Graduate School for Law and Politics**
  - **Institute for Future Initiatives（IFI）**
  - **Graduate School of Engineering
    The Graduate School of Information Science and Technology (IST)**
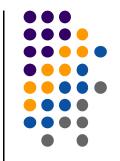 - **The Research Center for Advanced Science and Technology (RCAST)**

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

Missions

Promote basic research through collaboration among 8 organizations

- **Design of innovation**
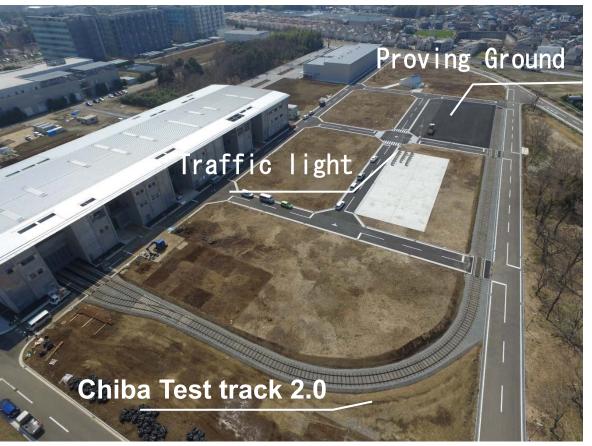- **Big data analysis**
- **Studies on human-machine interfaces**

Activities in Kashiwa area

- **Trials and practical implementation of automated shuttle bus**
- **Implementation of information center models**
- **Assessment of the performance of advanced vehicles**

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

Proving Ground

Traffic light

Chiba Test track 2.0

April in 2017 open

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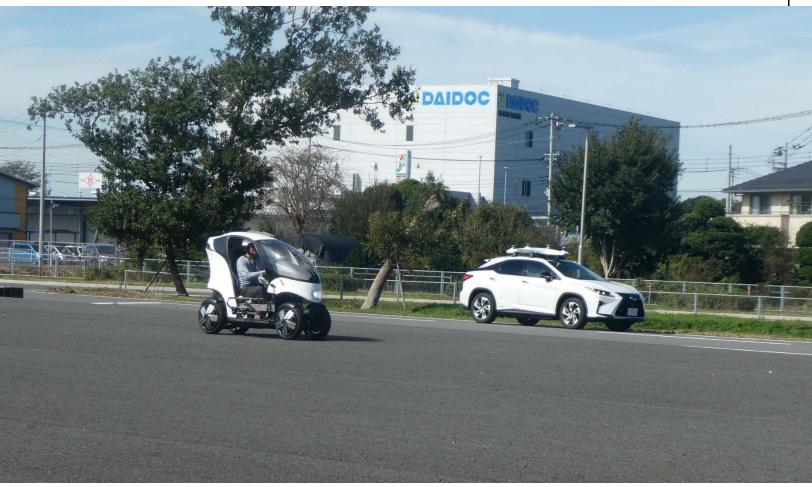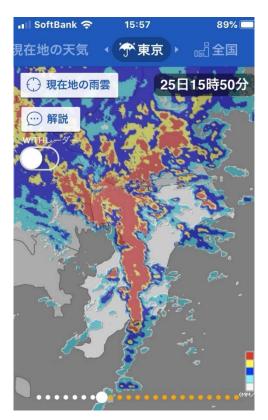　＋ Automobile, Railway, Transit, Road Operator
Collaboration Study

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

Chiba flooding as heavy rain in October 25 at Kashiwa Open Campus, The Univ. of Tokyo
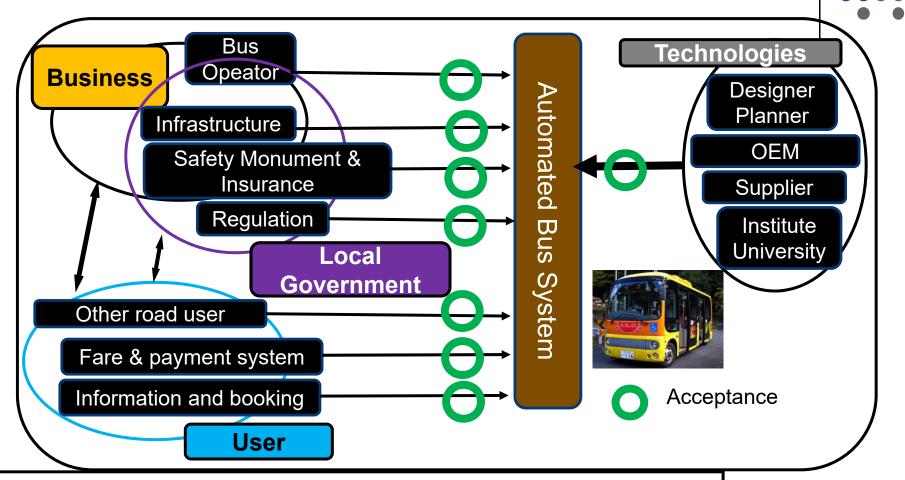
Automated Driving on Flooded Road in Oct. 25, 2019

Ecosystem for Automated Bus Service

Business

- Bus Opeator
- Infrastructure
- Safety Monument & Insurance
- Regulation

Local Government

- Other road user
- Fare & payment system
- Information and booking

User

Automated Bus System

Technologies

- Designer Planner
- OEM
- Supplier
- Institute University

○ Acceptance

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

Launched 5 months Automated bus business operation experiment on the public road in Nov. 1, 2019

- Between Kashiwanoha Campus Station of Tsukuba Express Railway and the University of Tokyo Kashiwa Campus
- Level 2

Launched 5 months Automated bus business operation experiment on the public road in Nov. 1, 2019

Operation by " TOBU BUS EAST" bus driver

- 5 months tests from Nov. 1 , 2019 Mar, 31, 2020
- Scheduled 3 round trips per day
- 1 round trip for observation visitor

TSUKUBA EXPRESS 柏の葉キャンパス駅発						
時	柏キャンパス（基盤棟前・環境棟前）					
8	00	10	20	30	40	50
9	00	10	20	30	40	50
10		10	20	30	40	
11					40	
12				35※	40	
13			25※		40	
14		15※			40	
15					40	
16					40	
17	00	10	20	30	40	50
18	00	10	20	30		50
19	00	10	20	30	40	50

東京大学 柏キャンパス発 （環境棟前）						
時	柏の葉キャンパス駅西口					
8		10	20	30	40	50
9	00	10	20	30	40	
10	00	10	20	30		50
11						50
12						50
13	05※				50	55※
14			35※		50	
15						50
16						50
17	00	10	20	30	40	50
18	00	10	20		40	50
19	00	10	20	30	40	50

Members of FOT for Eco-system in Kashiwa ITS Promotion Council

- Mobility Innovation Collaborative Research Organization, The Univ. of Tokyo (UTmobI)

- Institute of Industrial Science, The Univ. of Tokyo

- Graduate School of Frontier Science, The Univ. of Tokyo

- Kashiwa City

- Advanced Smart Mobility Co., Ltd.

- Tobu Bus East Co., Ltd.

- Mitsui Fudosan Co., Ltd.
- SB Drive Corp.

- The Urban Design Center Kashiwa-no-ha (UDCK)

- PACIFIC CONSULTANTS CO., LTD.

- Sompo Japan Nipponkoa Insurance Inc.

- Mitsubishi Auto Leasing Corporation

Concluding Remarks

- Business eco-system, mobility as a service are important issue

- Establishment of eco-system for Mobility innovation by leadership of academia

  - Mobility Innovation Liaison Meeting by SIP

  - Council for Promoting Mobility Innovation

  - Mobility Innovation Collaborative Research Organization, The University of Tokyo (UTmobI)

- Practice for Launch 5 months Automated bus business operation experiment in Kashiwa