

Advanced Mobility Research Center

[Designing the Next Generation Transport Systems]

Intelligent Transport Systems

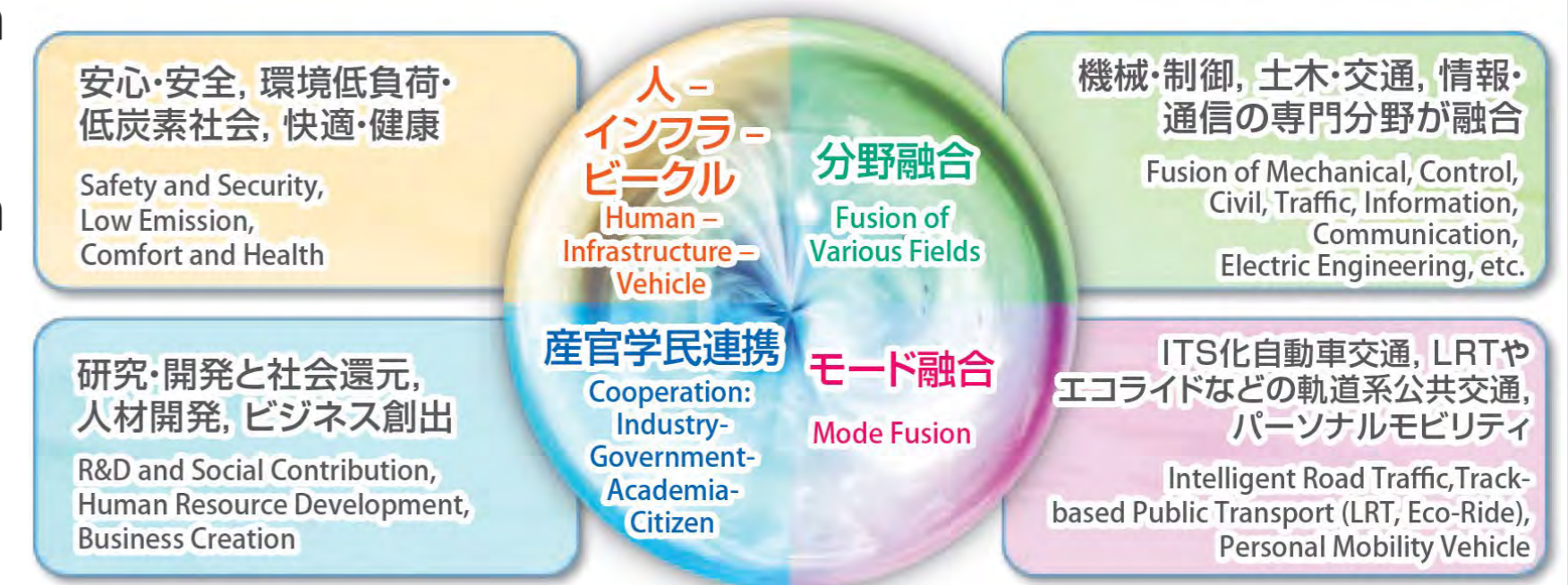
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<https://www.its.iis.u-tokyo.ac.jp/>

- **ITS (Intelligent Transport Systems)** is an advanced transport system in which various fields, such as transport engineering, vehicle engineering, information technology, are integrated.
- The Advanced Mobility Research Center promotes research and development of ITS through collaboration of academia, public, and private sectors.
- In July 2018, the ITS Center took the lead in launching the Mobility Innovation Collaborative Research Organization (UTmobl) as a cross-departmental organization within the university, and since July 2019 it has been promoting it with an eight-department structure.



Research and Developments on ITS

Various Traffic Simulation Models (TS)

Traffic simulators (TS) of various scales developed, to evaluate political options with high accuracy.

- **SOUND** : A network traffic simulator, covering a wide network including expressways, while vehicles are considered individually.
- **AVENUE** : A street-level traffic simulator, based on the detailed maneuvers of individual vehicles, such as lane changing at an intersection. Used for evaluating traffic operation strategies, reducing congestion on streets, etc.
- **KAKUMO** : A micro traffic simulator, connecting TS and DS. It fills the gap of spatiotemporal resolution between TS and DS by calculating driver's behavior and vehicle dynamics of hundreds of vehicles around the test driver in DS. Simultaneously, the behavior of the test driver in DS is reflected to TS, and then the movements of surrounding vehicles and the traffic condition change interactively.



ITS R&R Experiment Field

Experiment fields for automobiles and trains and a driving simulator for large vehicle.



Large-Scale Experiment and Advanced-Analysis Platform, Kashiwa Campus

Next-Generation Infrastructure

Autonomous Traffic Signal System



Technological studies on AVs

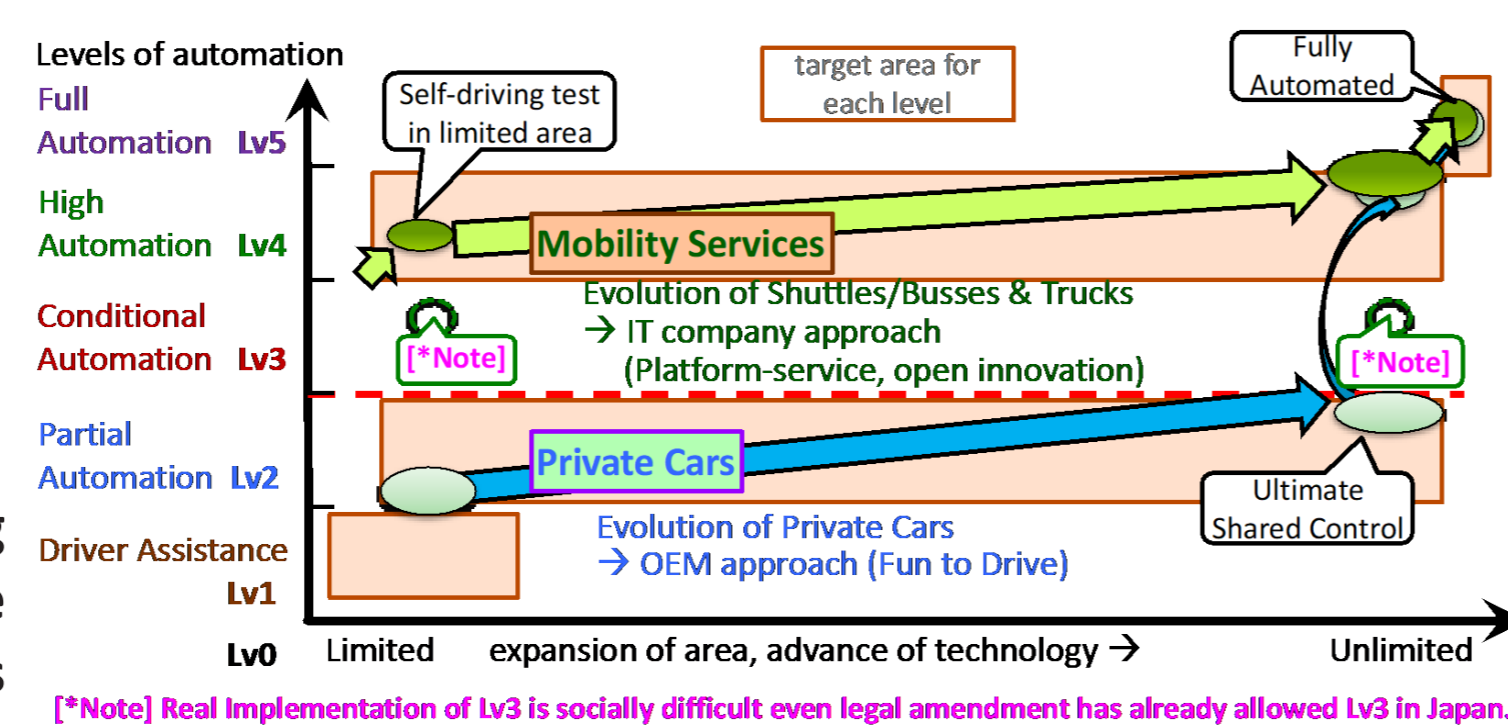
Driving test of automated driving buses



Societal implementation of automated driving

Assessment of bipolarized mobility innovation scenarios, cross-field academic collaboration

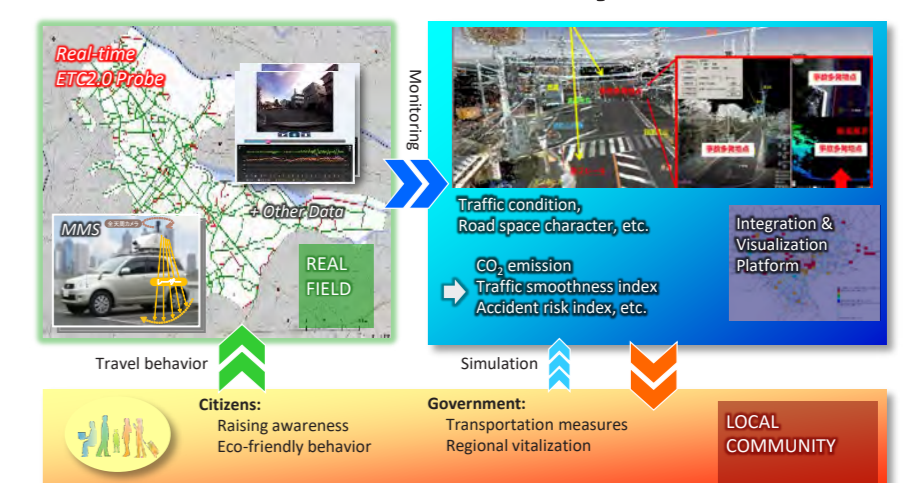
Automated Driving emerging scenario proposal and the Impact Analysis



Kashiwa ITS FOT Model City

ITS research activities launched for environment-friendly transport society in Kashiwa City, which is designated as one of the ITS FOT model cities by the Cabinet Office of Japan

Kashiwa ITS Smart City



Field test of automated driving bus (2019.11~)



Kashiwa Campus UTokyo ↔ Kashiwanoha-Campus Station

Vehicle-infrastructure cooperative technology aimed at expanding situations in which automated driving is possible

Technical

Non-technical

Investigation of the acceptability of automated driving and ELSI (Ethical, Legal, and Social Implications) Study

Sensing

Study on driving behaviors, driver status, and human interfaces for automated driving based on driving simulators and biometric measurements

Driver monitoring



Recognition of hand signals by the in-vehicle camera



Human Resource Development and Social Return Activities

ITS Seminar

Series of seminars organized about three times a year, and ITS based on needs from local areas as well as central administration promoted

Lectures

Not only lectures for students but also a special lecture "UTmobl Forum" (once a year) for private sectors organized for developing human resource in ITS industry

Research Committee

Informal discussions about latest ITS topics hosted every month inviting speakers from academia, industry, and government



Global Collaboration

ITS Center hosts an international symposium every year and exchanges faculty members and students with other universities and institutes through international collaboration as well as domestic collaboration.