Experimental vehicles, a driving simulator, posters exhibited

ITS Center
THE UNIVERSITY OF TOKYO
先進モビリティ研究センター

Advanced Mobility Research Center
(ITS Center)

先進モビリティ研究センター（ITSセンター）
http://www.its.iis.u-tokyo.ac.jp/

Intelligent Transport Systems

Suda Lab and Nakano Lab (Dept. of Mechanical and Biofunctional Systems)
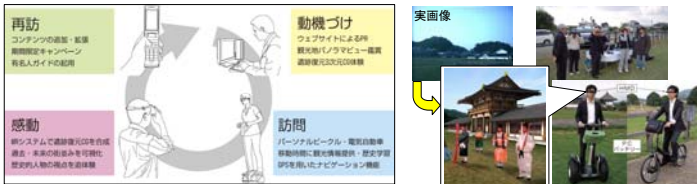Ikeuchi Lab (Dept. of Informatics and Electronics)
Oguchi & Tanaka & Kuwahara Lab, Sakamoto Lab, and Makino Lab (Dept. of Human and Social Systems)

Research Activities

Smart Tourism

- Novel ITS service for tourism taking advantage of mixed-reality (MR) technologies, next-generation mobility, etc
- Provision of visual information service using internet and the MR system
- Provision of mobility-aid service using electric vehicles and personal mobility vehicles
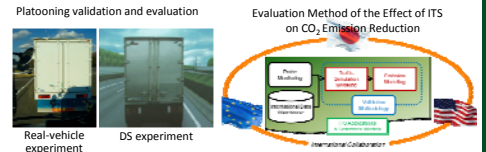

Driver Sensing

Driver's fatigue and stress level analyzed for the improvement of driving safety by measuring psychological signals, such as perspiration rate, electromyography, heart beat rate, EEG, etc

Development of Energy-Saving ITS Technologies

To reduce energy consumption in the transportation sector by using ITS technology, Energy ITS Project launched in 2008 for five years

Platooning validation and evaluation

Evaluation Method of the Effect of ITS on CO_2 Emission Reduction

Real-vehicle experiment

DS experiment

Research Facilities

Universal Driving Simulator (DS)

- Six-DOF motion platform with one-DOF turntable mechanism and image generation system for 360-degree view and door mirrors adopted with a car navigation system
- Reproducing driving environment and traffic condition close to the real world
- Used for experiments about driving behavior, assessment of driving safety on a new road infrastructure, etc
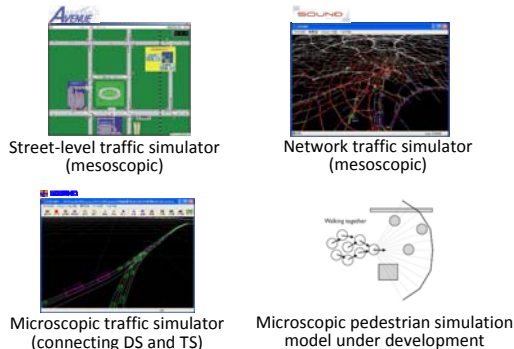
Chiba Experiment Station

- Experiment and verification field constructed for testing next generation traffic systems, such as Eco-Ride, in the Chiba Experiment Station of IIS, the Univ. of Tokyo

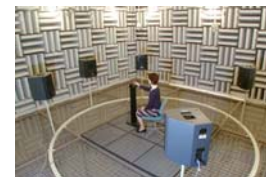Traffic signal and intersection

Test Track for LRT

Eco-Ride

Various Traffic Simulation Models (TS)

- Traffic simulators (TS) of various scales developed, and ITS technologies and policies simulated and evaluated with high accuracy
- DS connected to TS by KAKUMO, which is a micro traffic simulator itself and fills the gap of spatiotemporal resolution between DS and TS, reflects a test driver's behavior to the TS, and the TS updates the traffic condition in the DS.

Street-level traffic simulator (mesoscopic)

Network traffic simulator (mesoscopic)

Microscopic traffic simulator (connecting DS and TS)

Microscopic pedestrian simulation model under development

Anechoic Room

- Psycho-acoustical influence of an acoustical environment on human evaluated in an anechoic room equipped with 6-channel recording/reproduction system
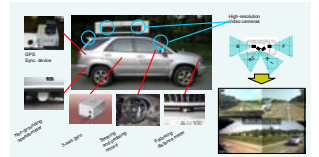
Development of Sensing Vehicles

- ARGUS
- MAESTRO

Using omnidirectional cameras, laser range scanner, etc., 3D geometry and photometric attributes of surrounding structures such as buildings and roads are collected

Positions of the own and peripheral vehicles, gap distance, steering, pedaling, etc. recorded and synchronized with high accuracy

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 course 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.