**Advanced Mobility Research Center**

**[Designing the Next Generation Transport Systems]**

**Intelligent Transport Systems**

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**Technology Fusion**

**Various Traffic Simulation Models (TS)**
- Traffic simulators (TS) of various scales developed, to evaluate political options with high accuracy
- 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.

**Social Deployment**

**Next-Generation Infrastructure**
- Road Space Design
- Public Address System in Tunnels

**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

**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

**Experimental vehicles, posters exhibited**

**History**
- 2003.4 “Sustainable ITS”, a cooperative project among academia, industry, and the government, started in CCR
- 2005.3 “Collaborative Research Center for Advanced Mobility (ITS Center)” established in IS (Director: Prof. Dr. Ikemichi)
- 2009.4 Upgraded to “Advanced Mobility Research Center (ITS Center)”, an university-authorized research center (Director: Prof. Dr. Kuwahara)
- 2014.4 “Advanced Mobility Research Center (ITS Center)” (Director: Prof. Dr. Suda )
- 2018.4 Director: Prof. Dr. Oguchi

**Experiential Learning**
- Various traffic simulators (TS) of various scales developed, to evaluate political options with high accuracy
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**Virtual City Modeling**
- Construct virtual space using 3D geometric data and videos obtained by several kinds of sensing systems and digital maps

**Chiba Experiment Station** (Kashiwa Campus)
- Experiment fields for automobiles and trains and a driving simulator for large vehicle.

**Driver Sensing**
- Analysis on driving operation and cortical brain activity using fNIRS.

**Smart Tourism**
- A novel ITS service for tourism taking advantage of mixed-reality (MR) technologies, next-generation mobility, etc.
- We classify actions of tourists as four steps: (1) Motivation (2) Visiting (3) Impression (4) Revisit, and provide visual information services using WWW and MR system, and mobility aid service using EV and PMV.

**Next-Generation Mobility**
- Proposal on “Cooperative ITS”
- Impact Analysis of Autonomous Driving

**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.