Experimental vehicles, driving simulators, posters exhibited

Advanced Mobility Research Center

(ITS Center)

Intelligent Transport Systems

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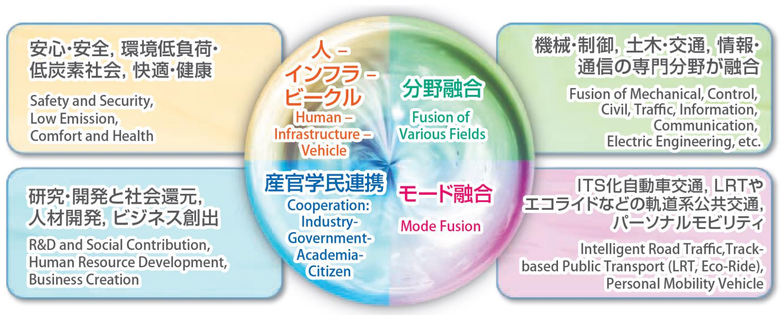
http://www.its.iis.u-tokyo.ac.jp/

- **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.



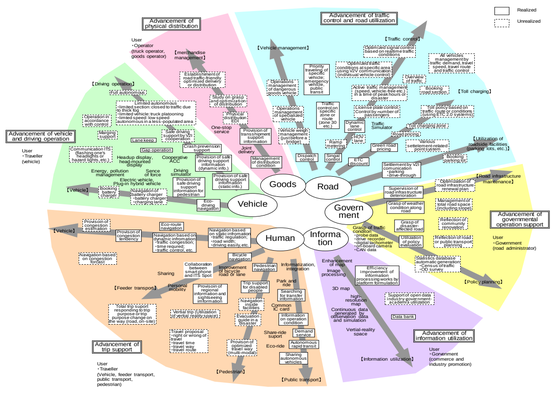
History

- ◆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 IIS (Director: Prof. Dr. Ikeuchi)
- ◆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)

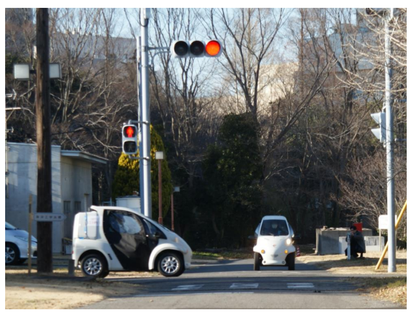
Research Activities

Cooperative ITS

- **Proposal of “Cooperative ITS”**
  Schematic Systems for ITS services



- **Next-Generation PTPS**
  PTPS using electric waves within 700 MHz band



Advanced Safety Vehicle (ASV) Project in Hiroshima

World-first on-road FOT of ADAS between tramcar and car, driving simulations for service evaluation, targeting ITS Connect (760MHz band) services.

DS experiments

On-road FOT in Hiroshima

Next-Generation Infrastructure

- **Road Space Design**

“Optical Dots” developed for safe and comfort driving , adopted by Tokyo Metropolitan Expressway

- **Public Address System in Tunnels**

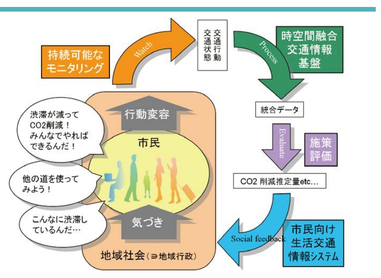
Public address system developed for the case of emergency evacuation in long tunnels, adopted by Tokyo Metropolitan Expressway

Tohoku Restoration Project

As a support for the earthquake disaster reconstruction of Tohoku region, the “Next-generation Energies for Tohoku Recovery (NET) Project” was initiated in 2012 to promote R&D of a mobility integrated energy management system (EMS) that supports the sustainable development of a disaster resilience region.

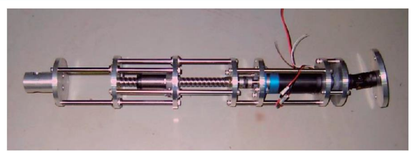
Kashiwa ITS FOT Model City

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



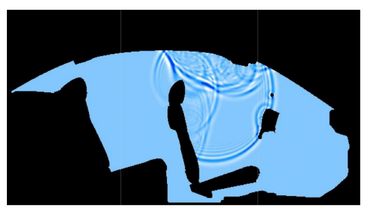
Next-Generation Vehicle

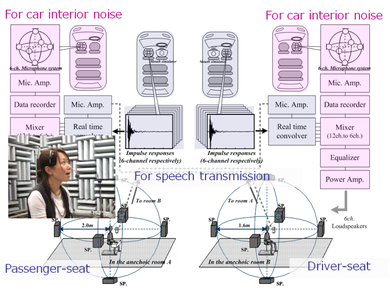
- **Electromagnetic Suspension**
  Composed of an electric motor and a ball-screw-and-nut, for an active suspension of an automobile



- **Analysis on Vehicle’s Vibration**
  Monitoring system of vehicle's vibration using ICA, which is a signal processing method to extract characteristics from mixed complicated observing signals, developed

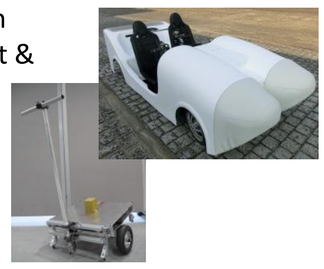
- **Sound Field Analysis and Assessment in Vehicles**
  Sound field prediction and assessment carried out by numerical analysis to create the acoustical comfort in vehicles





- **In-vehicle Layout**
  In-vehicle layout for improving passenger ride comfort adopted by Tokyu 7000 Series

- **Personal Mobility Vehicle (PMV)**
  Environment-friendly new urban transportation mode for comfort & efficient short-distance trip



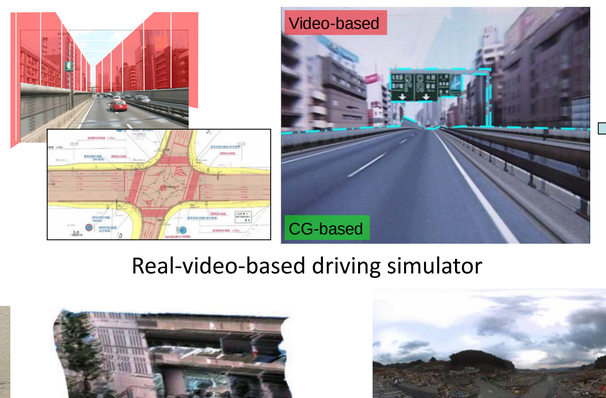
Traffic Simulations

- **Huge-scale traffic network simulator development and its application to Metropolitan three ring roads**
  about 400 thousand links, 200 thousand nodes, 110 thousand kilometers length and more than 1100 zones

Virtual City Modeling

- Construct a virtual space using 3D geometric data and videos obtained by several kinds of sensing systems and digital maps

Mobile sensing system

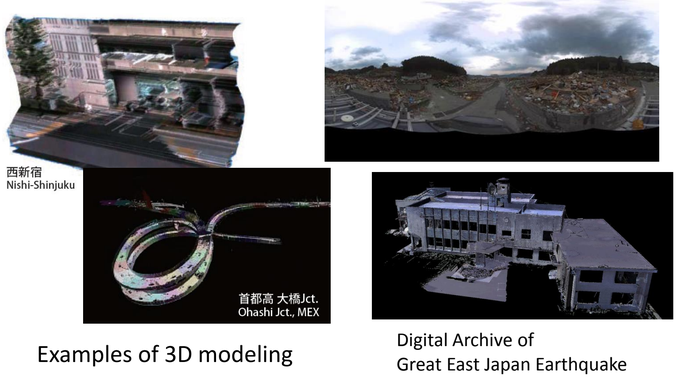


- Evacuation simulation
- Disaster prevention

Real-video-based driving simulator

Separation of background and foreground using spatio-temporal filtering

Super-resolution of on-vehicle video



Examples of 3D modeling

Digital Archive of Great East Japan Earthquake