Workshop on Connected and Automated Driving Systems

Organizer: Cross-Ministerial Strategic Innovation Promotion Program,
Council for Science, Technology and Innovation,
Cabinet Office, Government of Japan

Date: November 17-18, 2014

Venue: United Nations University, Tokyo, Japan

Description:

Built-in driver assistance features will be integrated with connected vehicle technologies for safety and efficiency. Evolutionary process will continue toward higher level of automated driving. Experts from Europe, Americas, and Asia-Pacific will share progress of related projects and discuss technical and non-technical challenges for deployment. Scope of the discussion will include technologies, human factors, legal issues, and integrated applications of automated driving technologies, such as reduction of traffic injuries and next generation transportation services.

Japanese government initiated a research project on automated driving systems under Cross-ministerial Strategic Innovation Promotion Program (SIP). Details of research plan will be unveiled during the workshop. (Please refer to page 2.)

Program:

Sessions will be organized under the following topics, inviting international experts from academia, government agencies and industries.

- Dynamic Map: Dynamic and integrated database of road network and surroundings
- Connected Vehicles: Perception of driving environment through communication
- Human Factors: Sharing roles between driver and vehicle system
- Impact Assessment: Contribution of automated driving technologies for safety, efficiency and mobility
- Next Generation Transport: Next generation transportation systems with automated driving technologies

Breakout workshops are organized for more intensive discussions on selected topics for invited participants.

Schedule:

Monday, November 17	Tuesday, November 18
09:30-10:45 Opening Session	09:30-11:00 Human Factors
11:00-12:30 Dynamic Map	11:30-13:00 Impact Assessment
12:30-13:30 Lunch	13:00-14:30 Lunch
13:30-15:00 Connected Vehicles	14:30-17:00 Breakout Workshop
15:30-17:00 Next Generation Transport	17:30-18:30 Workshop Closing
17:30-19:00 Reception	

Open for registered audience

Invited only

Framework of Japanese project on automated driving systems:

Cross-ministerial Innovation Promotion Program (SIP)

SIP is aiming to realize innovation through promoting R&D at all stages by enhancing cross-ministerial cooperation. Council for Science, Technology and Innovation (CSTI) designates research themes based on the expected extent of impact to solve societal issues and enhance economic growth. CSTI appoints Program Director (PD) for each research theme and allocates the budget.

The project

Innovation of Automated Driving for Universal Services (SIP-adus)
- Mobility Bringing Everyone a Smile -

Inclusive society, where diverse people in diverse communities actively participate in generating values, will enhance both wellness of individuals and economic development. Automated driving technologies integrated with social innovations should provide everyone with mobility to fully exercise his or her capacity, enabling sustainable development of the society.

Opening

Welcome speech

- Minister of State for Science and Technology Policy, Japan (to be confirmed)

Keynote speeches

- Mr. Gregory Winfree, Assistant Secretary, U.S. Department of Transportation, USA
- TBD, European Commission
- Mr. Michael Hurwitz, Director for Energy, Technology & International, Department for Transport, UK
- Dr. Hiroyuki Watanabe, Program Director, Cabinet Office, Japan

Session: Dynamic Map

Dynamic and integrated database of road network and surroundings

Digital map database with layered structure built on graph network representation of road will be expanded to include much detailed description of road structure and surrounding environment. The database will be dynamically linked to real-time data from integrated sensing system on board the vehicle and semi-real-time data from VtoX communications. Such a database will only be developed and maintained under collaboration across the industry sectors and public agencies.

Moderator

- Dr. Jun Shibata, Senior Researcher, Japan Digital Road Map Association, Japan

Speakers

- Mr. Maxime Flament, Head of Sector SafeMobility, ERTICO-ITS Europe, Belgium
- Mr. Carl Anderson, Connected Vehicle Program Manager, Federal Highway Administration, USA
- Mr. Russell Shields Chair, Ygomi LLC, USA
- Mr. Floris van der Klashorst, Vice President Connected Car, Connected Driving, HERE, Netherlands
- Mr. Ryota Shirato, SIP-adus, Japan

Session: Connected Vehicles

Perception of driving environment through communication

As the level of automation becomes higher, larger range of observation of driving environment becomes necessary. Deployment of connected vehicle technology will give advantages to automated driving systems. Proximity will be sensed by integrated sensors onboard the vehicle. Physically shielded vehicles will notify each other by VtoV communication. Beyond the horizon of sensing systems, VtoI communication will provide the automated vehicles with additional information.

Moderator

- Mr. Satoshi Oyama, Association of Radio Industries and Businesses, Japan

Speakers

- Mr. Kevin Dopart, Program Manager, ITS Vehicle Safety and Automation Program, U.S.DOT, USA
- Mr. Matt Smith, ITS Program Manager, Michigan DOT, USA
- Mr. Vincent Blervaque, Director, ITS got Solutions, Belgium
- Dr. Frank Forsterling, Head of Sales & Portofolio Innovations, Interior Electronics Solutions, Interior Division, Continental Automotive GmbH, Germany
- Mr. Christian Rousseau, Corporate Strategy & Plan Division Strategic Expertise Executive Leader, RENAULT SAS, France
- TBD DENSO, Japan
- Mr. Kunio Segawa, SIP-adus, Japan

Session: Human Factors

Sharing roles between driver and vehicle system

Level of automation will shift from one level to another depending on the driving environment and driver's condition along the trip. It is important to design automated vehicle system to effectively communicate with the driver so that situation awareness of the driver is maintained and transient between the levels of automation is properly performed.

Moderator

Dr. Toshiyuki Inagaki, Provost, University of Tsukuba, and
Chair, Systems Implementation WG, SIP-adus, Japan

Speakers

- Dr. Thomas A. Dingus, Director, Virginia Tech Transportation Institute, USA
- Ms. Jane Lappin, Program Manager, Volpe National Transportation Systems Center, U.S. DOT, USA
- Mr. Nicholas J. Reed, Principal Human Factors Researcher, TRL, UK
- Dr. Dirk Wisselmann, Research Projects Connected Drive, BMW Group, Germany
- Dr. Steven Shladover, Research Engineer, PATH/ITS, University of California, Berkeley, USA
- Mr. Kiyozumi Unoura, SIP-adus, Japan

Session: Impact Assessment

Contribution of automated driving technologies for safety, efficiency and mobility

Enhanced safety is the highest priority objective for vehicle automation. However, automated vehicle technology is only a part of measures to avoid traffic accidents. Field research of vehicle crash, modeling vehicle behavior, and evaluation of variety of measures are foundation to take most effective approach with new technologies. The same is true for efficiency and mobility.

Moderator

- Mr. Vincent Blervaque, Director, ITS got Solutions, Belgium

Speakers

- Mr. Kevin Dopart, Program Manager, ITS Vehicle Safety and Automation Program, U.S.DOT, USA
- Mr. Felix Fahrenkrog, Manager Active Safety ADAS, IKA, Germany
- Dr. Dirk Wisselmann, Research Projects Connected Drive, BMW Group, Germany
- Mr. Osamu Takatori, Dupty General Manager, Safety Research Division Japan Automobile Research Institute, Japan
- Mr. Nobuhiro Kato, Director for ITS, National Police Agency, Japan
- Mr. Seigo Kuzumaki, SIP-adus, Japan

Session: Next generation transport

Next generation transportation systems with automated driving technologies

In central district of large cities with high-density travel demand, pedestrian-centered multimodal transportation network is anticipated for efficient and sustainable mobility. Innovative transit system with automated driving technologies and on-demand operation will reduce travel time with comfort for passengers and enhance efficiency for operators. On the other hand, small sized vehicles with enhanced driver assistance for personal use are also anticipated to provide aged or handicapped users with the level of mobility, which encourages those people to actively engage in social activities.

Moderator

- Dr. Steven Shladover, , Research Engineer, PATH/ITS, University of California, Berkeley, USA

Speakers

- Dr. Adriano Alessandrini, Centre for Transport and Logistics, the University of Rome La Sapienza, Italy
- Mr. Leon Daniels Managing Director, Surface Transport, Transport for London
- TBD, Tokyo Metropolitan Government
- Ms. Elizabeth Machek, Community Planner, Volpe National Transportation Systems Center, U.S. Department of Transportation
- Dr. Hirokazu Kato, Associate Professor, Graduate School of Environmental Studies, Nagoya University
- Mr. Masayuki Kawamoto, SIP-adus, Japan

Access to the venue

United Nations University

5–53–70 Jingumae, Shibuya-ku, Tokyo 150-8925, Japan

35°39'44.1"N 139°42'30.5"E

UNU is on Aoyama Dori, a five-minute walk from Omotesando station (Exit B2, Chiyoda, Ginza, and Hanzomon lines) or ten minutes from Shibuya station. It is next door to the Children's Castle (Kodomo no Shiro) and opposite Aoyama Gakuin University.