INTELLIGENT TRANSPORTATION SYSTEM (ITS)
INTERNATIONAL RESEARCH EXCHANGE

The ITS Joint Program Office (JPO) of the U.S. Department of Transportation (USDOT) works to foster cooperative international ITS research and to support international harmonization of ITS standards through international research exchange activities.

LIMIT 35
SAFETY

MOBILITY

ENVIRONMENT

Benefits

ITS applications address surface transportation challenges in safety, mobility, and sustainability that are similar in cause and impact worldwide. International ITS exchange allows cooperating nations to benefit from each other's pre-competitive research and development by learning from their unique research programs, and, when merited, by replicating research programs in different contexts for greater breadth of understanding. Harmonized international ITS technology standards and architectures support operating efficiencies, technological innovation, and competition. The ITS JPO's international collaboration in research, evaluation, and architecture and standards harmonization saves money, increases collective knowledge, and advances innovation for all participants.

Activities

International ITS activities vary from one-time participation in an international conference or focused technical meeting to sustained, coordinated research exchange. All activities carefully focus on key topics of mutual interest. Most activities are governed by intergovernmental agreements such as memoranda of understanding. Currently, the United States supports ongoing international work with the European Union (EU), Japan, and Korea, as well as with Mexico and Canada due to the critical importance of interoperability with these two close neighbors.

International ITS Working Groups

ITS Working Groups were established to address key areas of shared interest among the regions. Co-led and staffed by representatives of the United States, the EU, Japan, and the Working Groups provide for active discussion and collaboration on bilateral and trilateral research exchange. The Working Groups include:

- **Automation in Road Transportation Working Group** – Focuses on information exchange on the current status of vehicle automation research and development, and governmental initiatives and interests in each of the three regions. (U.S., EU, and Japan)

Harmonization Task Group (HTG) 6: Candidate Harmonized Policies for Cooperative ITS Security Implementation

The Standards Harmonization Working Group continues to move forward with an ambitious program of work.

Joint standardization of connected vehicle systems (vehicle to vehicle and vehicle to infrastructure) is a core objective of the EU-U.S. cooperation on ITS. HTGs help accelerate progress in international standards harmonization. In 2012, HTG 1 (security standards) and HTG 3 (communications standards) identified a range of gaps related to security management policies and approaches. HTG 6 aims to address many of these gaps.

HTG 6 is co-led and staffed by representatives of the EU, United States, and Australia, with observers from Japan and Canada.

Outcomes are expected to include:

- Implementation guidance and recommendation

- Roadmaps and policy requirements; identification of gaps

- Identification of areas that are not suitable for harmonization

- Candidate harmonized policies

- Exchange of best practices between countries and regions.

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- **Probe Data Working Group** – Aims to advance the public sector in deploying cooperative systems and in capturing, managing, and using probe data in the management of transportation systems. (U.S., EU, and Japan)

- **US-EU-Asia Safety Working Group** – Focuses on supporting the development of cooperative safety applications in Europe and the United States by defining a common agreement among car manufacturers on specific standards and parameters to harmonize between these regions.

- **Sustainability Applications Working Group** – Focuses on identifying, researching, quantifying, and evaluating the environmental benefits of an ITS application or scenario that would improve the operation and performance of an environmentally optimized transportation network. (U.S. and EU)

- **Standards Harmonization Working Group** – Focuses on encouraging and fostering the development and adoption of globally harmonized open standards for ITS cooperative systems. Harmonization Task Group (HTG) 6, with Australia participating as an equal partner, expects to deliver candidate harmonized security policies to support harmonized standards by the end of 2014. Candidate governmental policies to incentivize harmonization have been developed with broad stakeholder input; these are now finalized and will be released shortly. A work plan is under development for an HTG covering standards gap identification and standards selection recommendations for specific interfaces throughout a broad cooperative ITS architecture, with further efforts to support harmonized standards under discussion. (U.S. and EU)

- **Driver Distraction and Human-Machine Interaction Working Group** – Outcomes include collaboratively developed understanding of driver distraction and inattention, including a definition of distraction, a taxonomy of inattention while driving, and a statement on cognitive load. Joint reports have been published on the definition of distraction, along with research priorities, and on the inattention taxonomy. Future work will include relating these efforts to the human-machine interface for in-vehicle systems. (U.S. and EU)

- **Evaluation Tools and Methods** – Focuses on understanding of existing evaluation methods, performance indicators, and measurement methods used in the United States and Japan, and their applicability for testing cooperative systems and applications. (U.S. and Japan)

- **Korea and U.S. Coordination on Pilots** – Focuses on information sharing and collaboration on pilot design, testing, and implementation. Includes joint exchange on key lessons learned from pilots testing cooperative safety systems and applications. (U.S. and Korea)

Accomplishments

The Working Groups have made significant progress in their collaborative endeavors:

- The Sustainability Working Group has written a series of white papers, available at the 2014 ITS World Congress, comparing our research programs and proposing joint actions to leverage the work of the two regions. A demonstration is planned for the Bordeaux World Congress.

- The Automation in Road Transportation Working Group has agreed upon seven areas for coordination of research activities, actively contributes findings to each other's research workshops, and is currently matching researchers across national borders for project teams. Plans call for the development of a series of reports that compare current research programs and identify research needs for future coordinated research programs.

- Transport Canada and the USDOT established a mechanism for coordinating updates to their national ITS architectures, including the Border Information Flow Architecture, to ensure that technology deployments in both countries adhere to the same manufacturing and operating standards, thereby reducing development and implementation costs.

- The latest results of the U.S.-Japan collaborative research on probe data can be found in the *US-Japan Collaborative Research on Probe Data: Assessment Report*, available on the ITS JPO's international research website. The report includes research activities in both nations and identifies three high-priority applications for joint research.

- The Driver Distraction and Human-Machine Interaction Working Group completed its *Inattention Taxonomy Report,* available on the ITS JPO's international research website.

- Cooperation between the EU and U.S. industry, governments, and standards communities has resulted in a substantially harmonized core safety message set, showcased at the 2012 ITS World Congress in Vienna.