# Collaboration on ITS Communication Standards

## 23 October 2014, Troy, Michigan, United States

### Meeting report

1. **Introduction**

The meeting of the Collaboration on ITS Communication Standards (“Collaboration”) took place on 23 October 2014 at SAE International Automotive headquarters in Troy, Michigan, United States of America.

Russell Shields of Ygomi LLC chaired the meeting.

The intent of the Collaboration is to provide a globally recognized forum for the creation of an internationally accepted, globally harmonized set of ITS communication standards of the highest quality in the most expeditious manner possible to enable the rapid deployment of fully interoperable ITS communication-related products and services in the global marketplace.[[1]](#footnote-1)

1. **Opening of meeting, introductions and adoption of the agenda**

Russ Shields welcomed the participants (9 on-site, 9 remote; the final list of participants is reproduced in [Doc 010](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201410-Troy/010%20-%20List%20of%20Participants.pdf)) and gave introduction to the objectives of the Collaboration (see [website](http://www.itu.int/en/ITU-T/extcoop/cits/)). He thanked the host, SAE International, for providing the meeting facilities.

The agenda approved by the meeting is reproduced in [Doc 001](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201410-Troy/001%20-%20Draft%20agenda.docx).

1. **Review of past actions**

The list of open actions ([Doc 002](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201410-Troy/002%20-%20Review%20of%20open%20actions.docx)) was reviewed. A number of action items are ongoing (Sapporo 2014 #2: organize meeting and workshop in China in July 2015; Geneva 2014 #1: exchange information with ISO TC204 secretariat) and others were on the agenda of this meeting (Sapporo 2014 #3, #4; Geneva #2) and can subsequently be removed from the list. The following updates and comments were made:

Sapporo 2014 #1: Propose way to formalize Collaboration input into WP.29 - Martin Adolph (ITU/TSB) pointed out any that any input into WP.29 should be coordinated and agreed on Collaboration level (in meetings, via the mailing list) and submitted to WP.29 respecting the 12 week deadline for submission. This procedure was submitted to [ITU TSAG in June 2014](http://www.itu.int/md/T13-TSAG-140617-TD-GEN-0165/en) and shared with the ITU Radiocommunication Bureau.

1. **Overview of SAE’s ITS related committees and recently published standards**

Peter Byk and Jack Pokrzywa (SAE International) introduced participants to SAE’s work on ground vehicle standards ([Doc 006](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201410-Troy/006%20-%20SAE%20ITS%20Standards%20Development.pdf)). Key elements in this area include:

* DSRC message sets, see <http://www.sae.org/works/committeeHome.do?comtID=TEVDSRC>
* Human factors / HMI, see <http://www.sae.org/works/committeeHome.do?comtID=TEITSSHF>
* Automated vehicles, <http://www.sae.org/works/committeeHome.do?comtID=TEVAVS>
* Vehicle electrical system security, <http://www.sae.org/works/committeeHome.do?comtID=TEVEES18>

Referring to its co-operation agreement with ETSI and exchange with ISO TC22, SAE expressed interest in continuing (and eventually formalizing) its collaboration with ITU.

As a first step, ITU offered to arrange a briefing for SAE’s DSRC committee on ITU-R (Radiocommunication) work on V2X radio interface standards (draft new Recommendation ITU‑R M.[V2X]) and ITS communications related agenda items of [ITU’s World Radiocommunication Conference 2015](http://www.itu.int/en/ITU-R/conferences/wrc/2015/Pages/default.aspx), to explore the role of SAE DSRC standards.

* Action (1) ITU/TSB: Arrange a briefing (conference call) for SAE on ITU-R activities.

Participants asked if SAE had identified a need for standards describing a data model for dynamic road conditions (e.g., ice on the road; road construction information) and highlighted the need for more accurate (than current navigation data) road control information, as we move towards automated driving. At the moment, no such work is being undertaken.

1. **Discussion about ITS communications in the World Forum for Harmonization of Vehicle Regulations (WP.29)**

Russ Shields provided a short introduction ([Doc 003](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201410-Troy/003%20-%20WP29%20plan.docx)) into the activities of WP.29. Areas of common interest between the Collaboration on ITS Communication Standards and WP.29 include:

* Automated in-vehicle emergency call systems (e.g., eCall);
* V2V communications;
* Automated driving;
* Driver distraction.

He noted that there different definitions / levels of automated driving (e.g., by NHTSA; by OICA (SAE J3016)) were presented to WP.29 in previous meetings and that there would be a need for a globally agreed, openly and freely available definition and taxonomy for automated driving systems.

The meeting agreed to use the Collaboration mailing list to draft and review a Contribution to the next meeting of [ITU-T Study Group 16](http://www.itu.int/en/ITU-T/studygroups/2013-2016/16/Pages/default.aspx) (Geneva, 9-20 Feb. 2015) proposing the creation of a work item on a taxonomy for ICT-enabled motor vehicle automated driving systems. SAE offered to make available a table describing levels of driving automation for on-road vehicles based on SAE J3016, and to contact the SAE ORAV Definitions Task Force Chair to provide some introductory text.

* Action (2) Russ Shields, Yushi Naito, ITU/TSB: Draft and circulate on the CITS mailing list a contribution proposing the creation of a new work item on a taxonomy for ICT-enabled motor vehicle automated driving systems to be submitted to SG16 meeting (February 2015).

[Doc 003](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201410-Troy/003%20-%20WP29%20plan.docx) also lists upcoming WP.29 meetings (and deadline for document submission). A number of ITU-affiliated delegates will participate in the next WP.29 meeting (11-14 November 2014 in Geneva, Switzerland). ITU-affiliated delegates interested in participating in future meetings are reminded to contact ITU/TSB (Martin Adolph, [martin.adolph@itu.int](mailto:martin.adolph@itu.int)) to be included in the list sent to UNECE.

Russ Shields pointed out that amendments to (Article 8 and Article 39 of) the [1968 Convention on Road Traffic](https://treaties.un.org/pages/ViewDetailsIII.aspx?&src=TREATY&mtdsg_no=XI~B~19&chapter=11&Temp=mtdsg3&lang=en) are underway in UNECE WP.1 (Road Traffic Safety) to accommodate driver assistance systems (see [report of WP.1 March 2014 meeting](http://www.unece.org/fileadmin/DAM/trans/doc/2014/wp1/ECE-TRANS-WP1-145e.pdf): paragraphs 21-22 and Annex).

Later on in the meeting, Paul Perrone, Chair of the SAE on-road automated vehicle (ORAV) committee gave an outlook ([Doc 007](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201410-Troy/007%20-%20SAE%20ORAV.pdf)) on upcoming work of his committee. This includes the publication of [SAE J3018](http://standards.sae.org/wip/j3018/) (“Safety Guidelines for the On-Road testing of Prototype Models of Fully Automated Vehicles”) before end of 2014; a focus on evaluation, verification and validation; human factors aspects; and interoperability.

1. **ITS communications requirements – Work Item 1**

Jim Misener, Chair of the SAE DSRC Technical Committee, provided a comprehensive overview ([Doc 008](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201410-Troy/008%20-%20SAE%20DSRC.pdf)) of the status of the committee’s work, pointed to technical, conceptual and institutional differences between Europe and the United States – some of which may cause interference – and highlighted the need for interoperability. He noted that in the near future the committee would focus primarily on standards related to the [impending Notice of Public Rulemaking (NPRM)](http://www.nhtsa.gov/About+NHTSA/Press+Releases/NHTSA-issues-advanced-notice-of-proposed-rulemaking-on-V2V-communications), which will eventually lead to the requirement of V2V communication capability in new light vehicles.

Wearing his Qualcomm hat, Jim introduced ongoing work in the area of DSRC-enabled V2P / Vulnerable Road User (VRU) communications. Vulnerable road users account for half of all road traffic deaths globally, [according to the WHO](http://who.int/violence_injury_prevention/road_safety_status/2013/en/). V2P communications (vehicle to pedestrian with smartphone) has been successfully demonstrated using off-the-shelf hardware.

Participants agreed that many open issues need to be resolved to move ahead without impacting vehicular safety. Such issues include: defining performance requirements for V2P use cases (e.g., SAE J2945.x); addressing channel congestion; improving positioning; describing context / situational awareness.

Participants were also informed that ETSI TC ITS WG1 has conducted a preliminary study to start a work item on VRU to realize an overview of the relevant VRU use cases enabled by Cooperative ITS; to identity relevant ITS application and/or facilities layer features to be standardized to support VRU applications; and to make recommendations for further specifications for existing standards revision or new standard development.

Yushi Naito gave an oral update on a recent restructuring of ITS related activities in TTC Japan. ITS-communications based disaster relief communications (i.e. multi-hop wireless ad hoc networks) remain a key area of interest. Participants pointed out that ISO TC204 WG16 recently established a work item regarding the use of ITS radios in cars for communications when other communications are not available.

Participants noted that wireless charging was another ITS-related area of great interest to various SDOs, including ISO, IEC, IEEE, ETSI and SAE.

1. **Incorporate ITS communications standards in ITU Recommendations – Work Item 3**

Martin Adolph described ongoing ITS communications standardization activities of ITU-T Study Groups:

* Study Group 12: The work of [Question 4/12](http://www.itu.int/en/ITU-T/studygroups/2013-2016/12/Pages/q4.aspx) “Hands-free communication in vehicles” is concerned with the development of the specifications of performance characteristics and test methodologies for wideband and super-wideband hands-free devices – speakerphone and headset – within an automobile. New work has been initiated on Recommendation P.emergency “Speech Quality Requirements for Emergency Calls”;
* Study Group 16: [Question 27/16](http://www.itu.int/en/ITU-T/studygroups/2013-2016/16/Pages/q27.aspx) “Vehicle gateway platform for telecommunication/ITS services/applications” – please see below;
* Study Group 17: [Question 6/17](http://www.itu.int/en/ITU-T/studygroups/2013-2016/17/Pages/q6.aspx) “Security aspects of ubiquitous telecommunication services” – please see below.

[ITU-R Working Party 5A](http://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5a/Pages/default.aspx) is drafting a new Recommendation on V2X radio interface standards (Draft Recommendation ITU-R M.[V2X]).

1. **ITS communications security – Work Item 4**

Patti Kreh, SAE Industry Technologies Consortia, gave an overview of SAE’s work on vehicle electrical system security. An important focus of the [security committee](http://www.sae.org/works/committeeHome.do?comtID=TEVEES18) is information sharing and awareness raising. The committee also develops guidelines and standards for automotive cybersecurity (software and hardware) and publication of a “Cybersecurity Guidebook for Cyber-Physical Automotive Systems” ([J3061](http://standards.sae.org/wip/j3061/)) is planned for Q1/2015.

The meeting took note of [Doc 004](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201410-Troy/004%20-%20Liaison%20ITU-T%20SG17.zip) received from ITU-T Study Group 17 (Security) informing the group about the start of new work items on (1) secure software updates for ITS communications devices; and (2) security guidelines for V2X communication systems. Input on these new work items is appreciated. An interim meeting on these items will be held on 15-16 January 2015 in Seoul, Korea. The next ordinary meeting of SG17 will take place 8-17 April 2015 in Geneva.

The meeting suggested to organize a conference call for SAE and ITU-T SG17 experts to exchange information about the work on securing OTA software updates.

* Action (3) ITU/TSB: Arrange a conference call for SAE and ITU-T SG17 experts.

Dick Roy highlighted the need to secure the access to in-vehicle networks, and that the standardized vehicle-station gateway is a key element to provide security and safety functionality in order to allow only authorized access to in-vehicle networks.

1. **Interaction of drivers with nomadic devices – Work Item 5**

Yushi Naito, Chairman of ITU-T Study Group 16, introduced [Doc 005](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201410-Troy/005%20-%20Liaison%20ITU-T%20SG16.docx). He reported that the results of the survey on ITS communications requirements have been [published as handbook](http://www.itu.int/pub/T-TUT-ITS-2014-REQS), and gave an update on the work items related to vehicle gateway (VG) and vehicle gateway platform (VGP).

The meeting encouraged SG16 to exchange information on these work items with ISO TC204 WG16, in order to explore if and how the VG fits into the ITS station (ITS-S) concept described in ISO 21217.

* Action (4) Yushi Naito and Dick Roy: Exchange information about VG/VGP and ITS-S.

The next ordinary meeting of SG16 will take place 9-20 February 2015 in Geneva.

1. **Next meetings**

The next meeting of the Collaboration on ITS Communication Standards will take place on **6 March 2015 at ITU headquarters in Geneva, Switzerland**, with remote participation capabilities, in conjunction with Geneva Motor Show and the ITU Symposium on The Future Networked Car (5 March 2015). Meeting announcement, logistical information and registration form will be made available at <http://itu.int/go/ITScomms>.

A future meeting is planned in conjunction with an event in **China in July 2015** (date and location tbc).

1. **Close of meeting**

Russ Shields thanked the host SAE International for providing the facilities for this meeting and the participants for all the discussions. The meeting closed at 1700.

| Meeting | No. | Who | What | Work Item | By when | Status |
| --- | --- | --- | --- | --- | --- | --- |
| Troy, October 2014 | | | | | | |
| Troy(2014) | 1 | ITU/TSB | Arrange a briefing (conference call) for SAE on ITU-R activities |  | Before EOY 2014 |  |
| Troy(2014) | 2 | Russ Shields, Yushi Naito, ITU/TSB | Draft and circulate on the CITS mailing list a contribution proposing the creation of a new work item on a taxonomy for ICT-enabled motor vehicle automated driving systems to be submitted to SG16 meeting (February 2015). |  | SG16 Contribution deadline: 27 Jan 2015 |  |
| Troy(2014) | 3 | ITU/TSB | Arrange a conference call for SAE and ITU-T SG17 experts. |  | Before EOY 2014 |  |
| Troy(2014) | 4 | Yushi Naito, Dick Roy | Exchange information about VG/VGP and ITS-S. |  | October 2014 | done |
| Sapporo, July 2014 ([meeting report](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201407-Sapporo/008%20-%20Meeting%20report.docx)) | | | | | | |
| Sapporo(2014) | 2 | ITU/TSB and Kevin Li | Explore the possibility of hosting the Collaboration on ITS Communication Standards alongside a TIAA meeting in July 2015 |  |  | ongoing |
| Geneva, March 2014 ([meeting report](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201403-Geneva/011%20-%20Meeting%20report.docx)) | | | | | | |
| Geneva(2014) | 1 | ITU/TSB | Exchange information with ISO at secretariat level. |  |  | ongoing |

1. Collaboration website, <http://www.itu.int/en/ITU-T/extcoop/cits/> [↑](#footnote-ref-1)