# Collaboration on ITS Communication Standards

## 7 July 2017, Singapore

### Draft meeting report

1. **Introduction**

The meeting of the Collaboration on ITS Communication Standards (“Collaboration”) took place on 7 July 2017 at Suntec Convention and Exhibition Centre​​​, Singapore, kindly hosted by the Info-communications Media Development Authority of Singapore (IMDA).

The meeting was held in conjunction with the ITU/IMDA Workshop on *How Communications will Change Vehicles and Transport* on 6 July 2017.

**T. 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**

**Chaesub Lee**, Director of the ITU Standardization Bureau extended a warm welcome to all participants. Mentioning recently approved ITU-T Recommendations in the field of ITS communications, he highlighted the increasing importance for collaboration between ITU-T Study Groups 12, 16, 17 and 20, as well as between ITU and other SDOs. He also pointed to senior level representation of the automotive sector in ITU’s recent [AI for Good Global Summit](http://www.itu.int/en/ITU-T/AI/Pages/201706-default.aspx) (Geneva, 7-9 June 2017).

Russ Shields welcomed the participants on site and attending the meeting via GoToMeeting (the final list of participants is in [Doc 006](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201707-Singapore/006%20-%20List%20of%20participants.pdf)) and introduced the objectives of the Collaboration (see [website](http://www.itu.int/en/ITU-T/extcoop/cits/)). He highlighted Singapore’s leading role in ITS, including as a host of [ITS World Congress Singapore 2019](http://itssingapore.org.sg/cms/).

He noted that the Collaboration is not a standards-setting, but a standards-facilitating group, exchanging information and promoting the development and adoption of ITS communications standards.

The draft agenda was adopted as in [Doc 001](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201707-Singapore/001%20-%20Draft%20agenda.docx).

1. **Wrap-up of** [**ITU/IMDA workshop**](http://www.itu.int/en/ITU-T/extcoop/cits/Pages/201707.aspx)

Participants were invited to comment and give feedback on the workshop held on the previous day. Comments included the limited time available; the encouraging role taken by Singapore in some areas of ITS communications; the very interesting field visit and demo setup with useful ITS applications. On the content of the workshop, participants noted that AI and [blockchain](http://www.itu.int/en/ITU-T/focusgroups/dlt/Pages/default.aspx) would be areas of work for ITU moving forward; cybersecurity continued to be a major concern in the field of ITS communications and beyond; Singapore’s smart city / smart nation initiatives to be monitored more closely.

**Martin Adolph** (ITU) explained that the Collaboration is following a yearly cycle of three meetings and three workshops: (1) March, during Geneva Motor Show; (2) summer in Asia; (3) fall in the Americas.

1. **Update on ITS communications standardization activities**

Martin Adolph pointed participants to a [spreadsheet](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/ITS%20work%20items.xlsx) collecting information about all ITS related work items in ITU. Covering the work of ITU-T (Study Groups 12, 13, 16, 17, 20) and ITU-R, the spreadsheet is regularly updated. He also mentioned the [fourth ITU test event on compatibility of mobile phones and vehicle hands-free terminals](https://www.itu.int/md/T17-TSB-CIR-0037/en) to be held at ITU Telecom World 2017.

Russ Shields highlighted the crucial role of interaction between government, communications, and transportation authorities. To address the important role of coordination between the different SDOs, the [Global Standards Collaboration](http://www.itu.int/en/ITU-T/gsc/Pages/default.aspx) (GSC) was set up, and its 21st meeting (Vienna, 26-27 September) will see discussion of the GSC ITS task force, which is witnessing increasing interest in ITS radiocommunications.

As major milestones for ITS communications, he alluded to the introduction of LTE-V in 3GPP Release 14, and public safety based on LTE starting from 3GPP Release 12, eventually leading to coordinated communications of vehicles, public safety and infrastructure, all in a single radio.

**Koji Nakao** (NICT, Japan) introduced a liaison statement ([Doc 002](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201707-Singapore/002%20-%20LS%20from%20SG17.zip)) from SG17 informing the Collaboration on the approval of [Recommendation ITU-T X.1373](http://www.itu.int/rec/T-REC-X.1373/en) (ex X.itssec-1) *“Secure software update capability for ITS communications devices”*, the ongoing work on work item X.itssec-2 *“Security guidelines for V2X communication systems”*, and the approval of a stand-alone question on *“Security aspects for Intelligent Transport Systems”* in Study Group 17 (Q13/17). In a more detailed presentation ([Doc 003](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201707-Singapore/003%20-%20ITU-T%20Study%20Group%2017%20update.pptx)), he also extended an invitation to participants to attend a forthcoming [ITU workshop on Security Aspects of ITS](https://www.itu.int/en/ITU-T/Workshops-and-Seminars/201708/Pages/default.aspx), Geneva, 28 August 2017.

Participants expressed their appreciation for the presentation and excitement about the recent ITS-related developments in SG17. They encouraged SG17, and Q13/17 in particular, to collaborate with other SDOs active in the field of ITS security, notably the ISO/SAE activities on automotive and ITS cybersecurity (see below).

**Yushi Naito** (Mitsubishi Electric, Japan) introduced a summary of the activities of Question 27 of ITU-T Study Group 16 contained in [Doc 004](http://itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201707-Singapore/004%20-%20Q27-16%20summary.docx). Q27/16 is currently working on two draft new Recommendations on architecture and interfaces of the vehicle gateway platform. Additionally, Q27/16 is working on a Technical Paper on gap analysis of vehicle gateways, in conjunction with Q13/17. The discussion on these work items will resume at the next meeting of SG16, Macao, 16-27 October 2017.

**Dick Schnacke** (Transcore, United States; Chairman, [ISO TC204](https://www.iso.org/committee/54706.html)) introduced TC204 on “Intelligent transport systems”, which, with 500-600 participants, is one of the biggest ISO Technical Committees. Twelve active working groups cover areas ranging from ITS basic architecture, communications, security systems, applications, etc.

He identified three Working Groups as those with the greatest relevance to the Collaboration, and to ITS communications work in ITU: WG 16 on wide area communications, WG 17 on nomadic devices in ITS systems, and WG 18 on cooperative systems. A list of active work items of these groups is contained in [Doc 005](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201707-Singapore/005%20-%20TC204%20Active%20Work%20Item%20WG16%20WG17%20WG18.xlsx). Dick Schnacke noted that cooperation between these Working Groups and the respective ITU Study Groups would be essential in moving the work forward and avoiding fragmentation.

In addition to those Working Groups, several ad hoc groups including on spectrum, big data, intelligent mobility services, automated driving are operating under TC204.

Formal liaisons inside and outside ISO exist, as listed at <https://www.iso.org/committee/54706.html#liaisons>.

Within ISO, Technical Committee 22 on road vehicles is working on standards for the “extended vehicle”.

An internal cooperation project between ISO TCs 204 and 22, as highlighted in previous Collaboration meetings (see [here](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201611-Detroit/013%20-%20Report.docx), [here](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201607-Tokyo/009%20-%20Report.docx) and [here](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201603-Geneva/007%20-%20Meeting%20report.docx)), is the **Joint ISO/TC 22/SC 3 - ISO/TC 204 Working Group on Vehicle Station Gateway (VSG)**, an area with related efforts in Q27/16.

**Action (1) SG16:** Exchange information and coordinate with **Joint ISO/TC 22/SC 3 - ISO/TC 204 Working Group on Vehicle Station Gateway (VSG)**.

He also highlighted an external joint project between ISO and SAE International to [develop technical standards for road vehicles and intelligent transport systems, including automotive cyber security](https://www.iso.org/news/2016/11/Ref2137.html).

A general overview of this joint working group which will eventually lead to a joint standard **ISO/SAE 21434 Road vehicles – Cybersecurity Engineering** was recently introduced in a meeting of the UNECE Task Force on Automotive Cybersecurity and OTA Software updates (see [presentation material](https://wiki.unece.org/download/attachments/44269802/TFCS-05-12%20%28OICA-CLEPA%29%20Overview%20on%20ISO-SAE%20activities%20regarding%20Cyber%20Security.pdf?api=v2)).

The meeting highlighted the importance for ITU-T Study Group 17 (Q13/17) to establish a close relationship with this joint project, and to closely monitor its progress.

**Action (2) SG17:** Exchange information and coordinate with **ISO/SAE Joint Working Group 24134 Road vehicles – Cybersecurity Engineering**.

Furthermore, the meeting stressed the importance for ITU to explore the possibility of developing and publishing joint specifications with SAE International, adopting and publishing SAE specifications relevant to the mandate of ITU-T Study Groups as international standards. Differences in the business model of both organizations (paid vs. free access to standards) were identified as a barrier.

**Action (3) ITU/TSB:** Re-initiate the discussion with **SAE International leadership** on collaboration and publication of joint specifications.

**Tse Min Hong** (IMDA Singapore) briefly introduced the ITS communications standards activities undertaken by Singapore. He highlighted IMDA’s participation in the vehicle gateway work of ITU-T Study Group 16. While DSRC standards were recently adopted as national standards, Singapore is also monitoring the usage of LTE and new radio variants for V2X communications, in the expectation that technologies would eventually complement each other. Singapore is an active participant in ITS spectrum harmonization efforts through participation in APT and ITU-R WP5A (e.g., a recent joint contribution with Japan on ITS usage in member states) and has interest in Agenda Item 1.12 of the 2019 World Radiocommunication Conference.

Yushi Naito briefly summarized the work of TTC Japan’s Working Group on Connected Car, highlighting ongoing activities related to over-the-air software updates.

1. **Update on World Forum for Harmonization of Vehicle Regulations (WP.29) activities**

Russ Shields introduced the work of [UNECE WP.29](http://www.unece.org/trans/main/wp29/introduction.html) related to ITS communications. WP.29 convenes officially three times per year (March, June, and November) and entrusts informal groups with specific problems that need to be solved urgently or that require special expertise.

ITU has a standing invitation to participate in WP.29 and its working groups, and is promoting the use of international standards in these activities.

He highlighted the working groups under WP.29 of particular interest to the ITS communications:

1. Informal Working Group on ITS/Automated Driving (IWG ITS/AD). Reporting to WP.29. The documentation of IWG ITS/AD is available [here](https://www2.unece.org/wiki/pages/viewpage.action?pageId=2523344).
2. UNECE Task Force on cybersecurity and over-the-air issues (CS/OTA). Reporting to IWG ITS/AD. The documentation of CS/OTA is available [here](https://www2.unece.org/wiki/pages/viewpage.action?pageId=40829521). ITU representatives are actively participating in this activity.
3. Informal Working Group on Accident Emergency Call Systems (IWG AECS). Reporting to WP.29. The documentation of IWG AECS is available [here](https://www2.unece.org/wiki/pages/viewpage.action?pageId=14319865).

Besides the work associated to WP.29, UNECE’s Global Forum for Road Traffic Safety (WP.1) has established an informal working group on automated driving (IWG-AD). Contrary to WP.29 informal working groups, participation in WP.1 IWG-AD is upon invitation and the documentation is not public (apart from status reports to WP.1, e.g., [here](https://www.unece.org/fileadmin/DAM/trans/doc/2016/wp1/ECE-TRANS-Informal-2016-4e.pdf)).

1. **Outlook and any other business**

The next Collaboration meeting will take place on **6 December 2017 in Arlington, VA, United States**, hosted by TIA, succeeding a half-day ITU/TIA Workshop on *How Communications will Change ​Vehicles and Transport* at [TIA headquarters](https://www.tiaonline.org/about/contact-us) on **5 December 2017, afternoon**.

The first Collaboration meeting in 2018 will take place on **9 March 2018 in Geneva, Switzerland**, succeeding the **Symposium on The Future Networked Car at Geneva Motor Show, 8 March 2018**.

1. **Close of meeting**

TSB Director Chaesub Lee and Russ Shields thanked IMDA for hosting the meeting and workshop and expressed appreciation to all participants for their inputs and the fruitful discussions. The meeting closed at 1530 local time.

## List of action items (as of July 2017)

| Meeting | No. | Who | What | Work Item[[2]](#footnote-2) | By when | Status |
| --- | --- | --- | --- | --- | --- | --- |
| Singapore, July 2017 | | | | | | |
| Singapore(2017) | 1 | Q27/16 | Exchange information and coordinate with Joint ISO/TC 22/SC 3 - ISO/TC 204 Working Group on Vehicle Station Gateway (VSG). | 3, 5 | December 2017 | Pending |
| Singapore(2017) | 2 | Q13/17 | Exchange information and coordinate with ISO/SAE Joint Working Group 24134 Road vehicles – Cybersecurity Engineering. | 3, 4 | December 2017 | Pending |
| Singapore(2017) | 3 | ITU/TSB | Re-initiate the discussion with SAE International leadership on collaboration and publication of joint specifications. | 3 | December 2017 | Pending |
| Tokyo, July 2016 ([meeting report](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201607-Tokyo/009%20-%20Report.docx)) | | | | | | |
| Tokyo(2016) | 1 | Q27/16, Q13/17, TC204, TC22 | Take into consideration W3C activities; exchange relevant information with W3C. | 3 |  | Ongoing |
| Tokyo(2016) | 2 | Koji Nakao / Q13/17 | Identify IEEE standards of interest to SG17 work on ITS security | 4 | November 2016 | Pending |
| Tokyo(2016) | 3 | Yasubumi Chimura / TTC | Share information on the role of ITS in the event of disasters with TC204 | 7 | November 2016 | Pending |
| Geneva, March 2015 ([meeting report](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-201503-Geneva/009%20-%20Meeting%20report.docx)) | | | | | | |
| Geneva(2015) | 2 | Russ Shields, Yushi Naito, ITU/TSB | Follow work of informal group ITS/AD, synchronize activities with development of F.AUTO-TAX. | 2, 3, 6 |  | Ongoing |

1. Collaboration website, <http://www.itu.int/en/ITU-T/extcoop/cits/> [↑](#footnote-ref-1)
2. See <http://www.itu.int/en/ITU-T/extcoop/cits/Pages/default.aspx> [↑](#footnote-ref-2)