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| **TSAG** |
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| **Source:** | Chairman, Collaboration on ITS Communication Standards |
| **Title:** | Report on Collaboration on ITS Communication Standards and ITS-related activities |
| **Purpose:** | Information |
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| **Keywords:** | ITS; collaboration; standards; SDOs; connected vehicles; |
| **Abstract:** | The document summarizes ITU-T activities in the field of ITS communications since the last meeting of TSAG in February 2020. |

# Action required

TSAG is invited to note the report.

ITU-T Study Groups with activities related to ITS communications (especially SG2, SG12, SG13, SG16, SG17 and SG20) are invited to provide regular updates on their ITS work items to the Collaboration on ITS Communication Standards (CITS).

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# 1 Collaboration on ITS Communication Standards (CITS)

The intent of the Collaboration on ITS Communication Standards ([CITS](https://www.itu.int/en/ITU-T/extcoop/cits/Pages/default.aspx)) is to provide a globally recognized forum for the coordination of an internationally accepted, globally harmonized set of Intelligent Transportation Systems (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.

Two CITS meetings have been held since the last TSAG meeting (February 2020): one at ITU premises, Geneva (Switzerland) on 6 March 2020 and one electronic meeting on 9 September 2020. The meetings of the Collaboration on ITS Communication Standards discuss the various ITS-related standardization activities in the different SDOs, through progress and status reports submitted. The documents of the meeting in March 2020 are available [here](https://www.itu.int/en/ITU-T/extcoop/cits/Pages/meeting-documents.aspx?RootFolder=/en/ITU-T/extcoop/cits/Documents/Meeting-20200306-Geneva&FolderCTID=0x0120008D91490DA7927C4D8A0BB5A73929B07D&View=%7b73BE16B3-22C9-43D5-A9FD-D8BC067A87FF%7d) along with the relevant documentation for the meeting in September 2020 being made available [here](https://www.itu.int/en/ITU-T/extcoop/cits/Pages/meeting-documents.aspx?RootFolder=%2Fen%2FITU%2DT%2Fextcoop%2Fcits%2FDocuments%2FMeeting%2D20200909%2De%2Dmeeting&FolderCTID=0x0120008D91490DA7927C4D8A0BB5A73929B07D&View=%7B73BE16B3%2D22C9%2D43D5%2DA9FD%2DD8BC067A87FF%7D).

The 9 September 2020 meeting was very successful and was attended by 50 participants. The United States appreciated the evolution of the CITS platform since its inception and was very pleased to see many reports from various key SDOs.

Following the discussions during the previous two CITS meetings, several SDOs have provided information on their relevant standards for inclusion in the [online ITS Communication Standards database](https://www.itu.int/net4/ITU-T/landscape#?topic=0.131&workgroup=1&searchValue=&page=1&sort=Revelance). The CITS meetings were attended by SDOs including IETF, CSAE, IEEE, 5GAA, ISO, CEN, W3C, ETSI, Car2Car Communication Consortium, TIAA, TSDSI, TTC, WWRF, UNECE, among others. These entities and their related groups provided progress reports to CITS. Among them, China Society of Automotive Engineers (CSAE) and Telecommunications Standards Development Society, India (TSDSI) have participated for the first time in September 2020 and also provided a status reports on their activities relating to ITS. The relevant inputs from the progress reports will be included in the ITS communication database in due time.

CITS will continue to work with the designated experts from each SDO to populate the database with updates on the standards from the respective SDOs.

The 6 March 2020 meeting of CITS was co-located, with the **Symposium on the Future Networked Car 2020 (**[**FNC-2020**](https://www.itu.int/en/fnc/2020/Pages/default.aspx)**)**, co-organized by **ITU** and **UNECE** on **5 March 2020**. Due to the coronavirus emergency the motor show was canceled. Under these circumstances, the Symposium was hosted by ITU on its premises in Geneva. Three sponsors supported the lunch/coffee breaks and the evening reception (**Qualcomm, Dekra and RoadDB**). A credible programme was developed using hybrid panels (remote and onsite panelists). See the final Programme at: <https://www.itu.int/en/fnc/2020/Pages/Programme.aspx>. Recommended reading include the special edition of the [ITU News Magazine](https://www.itu.int/en/fnc/2020/Documents/2020_ITUNews01-en.pdf) and the special issue of [The Dispatcher 04-2020](https://www.itu.int/en/fnc/2020/Documents/The%20Dispatcher_April%202020.pdf) (with full coverage of FNC).

CITS continues to provide the link between ITU and the [UNECE World Forum for Harmonization of Vehicle Regulations (WP.29)](http://www.unece.org/trans/main/welcwp29.html). To this end, as done on 26 August 2019, ITU was planning to host again the meeting of the UNECE Task Force on Cybersecurity and Over the Air issues, during the SG17 meeting in March 2020. A joint mini workshop on “Cyber Security Challenges in Automated Driving” was also under discussion. Due to COVID-19 it was not possible to follow up on this. Collaboration among the UNECE Task Force and ITU-T SG17 is useful to discuss related topics in both organizations with the participation of delegates of both UNECE WP29 and Q13/17, as well as CITS in general.

ITU delegates interested in participating in UNECE WP.29 activities are invited to consult the meeting schedule at <http://www.unece.org/trans/main/wp29/meetings_events.html> and to contact Mr Stefano Polidori (ITU/TSB) at tsbcits@itu.int for additional information and coordination. CITS will continue reviewing and discussing the progress in WP.29 and coordinate any ITS communications related input.

# 1.1 CITS-related events

# 1.1.1 Concluded meetings and events:

CITS has convened two (e-)meetings since the last TSAG:

* **Geneva, Switzerland, 6 March 2020:** Collaboration on ITS Communication Standards (CITS) meeting
* **E-meeting, 9 September 2020:** Collaboration on ITS Communication Standards (CITS) e-meeting

The following related events have taken place since the last TSAG meeting:

* **e-meeting, 12-13 March 2020:** 8th meeting of Focus Group on Vehicular Multimedia
* **Geneva, Switzerland, 5 March 2020**: [Symposium on the Future Networked Car (FNC-2020)](https://www.itu.int/en/fnc/2020/Pages/default.aspx), co-organized by ITU and UNECE
* **Webinar, 24 April 2020**: [COVID-19: Where are the self-driving cars and trucks](https://aiforgood.itu.int/events/covid-19-where-are-the-self-driving-cars-and-trucks/)?, organized under the umbrella of [AI for Good Global Summit](https://aiforgood.itu.int/).
* **E-meeting, 4-5 May 2020**: 2nd meeting of Focus Group on AI for Autonomous and Assisted Driving
* **E-meeting, 18-19 June 2020:** 9th meeting of Focus Group on Vehicular Multimedia collocated with Study Group 16
* **Workshop, 16 September 2020**: "[*AD safety data and metrics - what do we really need?​*](https://www.itu.int/en/ITU-T/Workshops-and-Seminars/20200916/Pages/default.aspx)"
* **E-meeting, 16-17 September 2020**: 3rd meeting of Focus Group on AI for Autonomous and Assisted Driving

# 1.1.2 Planned meetings and events:

* **e-meeting, 28-29 September 2020**: 10th meeting of Focus Group on Vehicular Multimedia,
* **Singapore (TBC), December 2020**: 4th meeting of Focus Group on AI for Autonomous and Assisted Driving, collocated with a workshop on the topic (TBC)
* **Singapore (TBC), December 2020**: 11th meeting of Focus Group on Vehicular Multimedia, collocated with a workshop on the topic (TBC)

Delegates are invited to consult the CITS website for further updates and information: <http://itu.int/go/ITScomms>.

# 2 ITU-T Focus Group on Vehicular Multimedia ([FG-VM](https://www.itu.int/en/ITU-T/focusgroups/vm/Pages/default.aspx))

The [ITU-T Focus Group on Vehicular Multimedia (FG-VM)](https://www.itu.int/en/ITU-T/focusgroups/vm/Pages/default.aspx), established by ITU-T Study Group 16 at its meeting in Ljubljana, 9-20 July 2018, analyzes and identifies gaps in the vehicular multimedia standardization landscape and draft technical reports and specifications covering, among others, vehicular multimedia use cases, requirements, applications, interfaces, protocols, architectures and security.

Following the 1st meeting of the ITU-T FG-VM held on 11 October 2018 in Ottawa, Canada, eight additional meetings of the FG-VM were convened:

* 2nd FG-VM Meeting, 23-25 January 2019, Tokyo, Japan
* 3rd FG-VM Meeting, 18-19 March 2019, Geneva, Switzerland
* 4th FG-VM Meeting, 16-17 May 2019, e-Meeting
* 5th FG-VM Meeting, 11-12 July 2019, Changchun, China
* 6th FG-VM Meeting, 11-12 September 2019, Budapest, Hungary
* 7th FG-VM Meeting, 12-13 December 2019, Geneva, Switzerland
* 8th FG-VM Meeting, 12-13 March 2020, Geneva, Switzerland
* 9th FG-VM Meeting, 18-19 June 2020, e-Meeting

All the documents of the FG-VM meetings are available [here](https://extranet.itu.int/sites/itu-t/focusgroups/vm/_layouts/15/start.aspx#//sites/itu-t/focusgroups/vm).

The main achievements and developments related to the FG-VM since the 1st meeting include:

* The Technical Report on “[Use Cases and Requirements for the Vehicular Multimedia Networks](https://www.itu.int/en/ITU-T/focusgroups/vm/Documents/FGVM-01R1.pdf)” has been published under FG-VM/WG1 and later updated as [FGVM-01R2](https://www.itu.int/en/ITU-T/focusgroups/vm/Documents/FGVM-01R2.pdf). A related [flipbook](https://www.itu.int/en/publications/Documents/tsb/2020-FG-VM-Use-cases-and-requirements-for-the-vehicular-multimedia-networks/index.html#p=1) new has been developed.
NOTE: The technical report was submitted to Q27/16 for its endorsement as an ITU‑T Recommendation. It was eventually updated and approved as [ITU-T Recommendation F.749.3](https://www.itu.int/itu-t/workprog/wp_item.aspx?isn=16484).
* The [Call for proposals for a VM Architecture](https://www.itu.int/en/ITU-T/focusgroups/vm/Documents/FGVM-CallForProposals_v2.pdf) has been published and later updated to invite contributions to the activities of WG2.
* FG-VM/WG2 is developing a draft Technical Report on “Vehicular Multimedia Architecture”.
* Mr Latif Ladid (University of Luxembourg) was endorsed and supported as candidate Vice-Chair of Working Group 3 on “Implementation aspects of Vehicular Multimedia”.
* Mr Jun Li, Chairman of ITU-T FGVM, participated as a speaker with a presentation on “Satellites and 5G Converged Networks to support Vehicular Multimedia Services” during the [Standards and Deployment Track](https://ieee-wf-5g.org/standards-and-deployment-track/) of the [IEEE 5G World Forum](https://ieee-wf-5g.org/) (11-12 September 2020).

The current management team plus editors of the FG-VM includes:

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| **Position** | **Name** | **Organization** |
| FG-VM Chair: | Jun (Harry) Li  | TIAA, People's Republic of China |
| FG-VM Vice-Chair/WG1 Chair:  | Gaëlle Martin-Cocher  | Blackberry, Canada |
| FG-VM Vice-Chair/WG1 Vice-Chair: | Kaname Tokita  | Honda, Japan |
| WG1 Vice-Chair | Lu Yu  | Changan Automobile Co, LTD, China |
| WG1 Vice-Chair | Guo Yansong  | Great Wall Motor Co, LTD, China​ |
| Editor | James Lepp | Blackberry, Canada |
| WG2 Chair | Yajun Kou | Global Fusion Media Technology and Development Co. Ltd, China |
| WG2 Vice-Chair: | Dimitri Konstantas  | University of Geneva, Switzerland |
| WG2 Vice-Chair | Jie Li | China Telecom, China |
| WG3 Candidate Vice-Chair | Latif Ladid | University of Luxembourg, Luxembourg |
| Editor | Srinivasagan Ayyappan | Great Wall Motors, Co, LTD, China |
| * FG-VM Advisor
 | Stefano Polidori | ITU/TSB |
| * FG-VM Project Officer
 | Mythili Menon | ITU/TSB |

The next FG-VM meeting was planned in China in September but due to COVID19 it has been converted to an e-meeting. See also [section 1.1](#Section11) above and FG-VM webpage:

<https://www.itu.int/en/ITU-T/focusgroups/vm>

# 3 ITU-T Focus Group on AI for Autonomous and Assisted Driving (FG-AI4AD)

The ITU-T Focus Group on AI for Autonomous and Assisted Driving ([FG-AI4AD](https://www.itu.int/en/ITU-T/focusgroups/ai4ad/Pages/default.aspx)) was established by ITU-T SG16 at its meeting in Geneva, Switzerland, 7-17 October 2019. This Focus Group delves into the behavioural evaluation of the AI responsible for the dynamic driving task of a vehicle, in accordance with the 1949 and 1968 Convention on Road Traffic of the UNECE Global Forum for Road Safety. It aims to facilitate international harmonisation on the definition of a minimal performance threshold for these AD vehicles.

Following the 1st meeting of the ITU-T FG-AI held on 21-22 January 2020 in London, United Kingdom, which was kicked-off by a Workshop on 21 January: *“*[*Explainable AI (XAI) for Autonomous and Assisted Driving*](https://www.itu.int/en/ITU-T/Workshops-and-Seminars/20200121/Pages/default.aspx)*”*, two additional meetings of the FG-AI4AD were convened virtually due to the COVID-19 pandemic:

* 2nd FG-AI4AD Meeting, 4-5 May 2020, e-Meeting
* 3rd FG-VM Meeting, 16-17 September 2020, e-Meeting

The third meeting was kicked-off by a Workshop on 16 September 2020: "[*AD safety data and metrics - what do we really need?​*](https://www.itu.int/en/ITU-T/Workshops-and-Seminars/20200916/Pages/default.aspx)"

All the documentation pertaining to FG-AI4AD can be found [here](https://extranet.itu.int/sites/itu-t/focusgroups/ai4ad/_layouts/15/start.aspx#//sites/itu-t/focusgroups/ai4ad).

The main achievements and developments related to the FG-AI4AD since the 1st meeting include:

* Three workstreams were established under which future activities will be carried out:
* 1st Workstream: Outreach through participation, collaborations and public engagement
* 2nd Workstream: Technical specification and demonstration
* 3rd Workstream: Research based guidance & notices

– It was agreed to develop three Technical Reports as follows:

* TR01: “Automated driving safety data protocol – Specification”
* TR02: "Automated driving safety data protocol – Public safety benefits of continual monitoring”
* TR03: "Automated driving safety data protocol – Practical demonstrators”
* Ms Nynke Vellinga (Univ. of Groningen, Netherlands) was appointed as Editor of TR02
* Matthew O’Kelly (Trustworthy AI) was appointed as Editor of TR03.

The current management team plus editors of the FG-AI4AD includes:

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| **Position** | **Name** | **Organization** |
| FG-AI4AD Chair | Bryn Balcombe | ADA Innovation Lab Limited, UK |
| FG-AI4AD Vice-Chair | Yuan Zhang | China Telecom, China |
| Editor TR02 | Nynke Vellinga | University of Groningen, Netherlands |
| Editor TR03 | Matthew O’Kelly | Trustworthy AI, UK |
| * FG-AI4AD Advisor
 | Stefano Polidori | ITU/TSB |
| * FG-AI4AD Project Officer
 | Mythili Menon | ITU/TSB |

The next FG-AI4AD meeting was planned in Singapore in December 2020 but due to COVID19 it was converted to an e-meeting. See also [section 1.1](#Section11) above and FG-AI4AD webpage:

<https://www.itu.int/en/ITU-T/focusgroups/ai4ad>

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