# Collaboration on ITS Communication Standards

## Munich, Germany, 26 June 2012

### Meeting report

1. **Introduction**

The meeting of the Collaboration on ITS Communication Standards (“Collaboration”) took place 26 June 2012 at BMW in Munich (Unterschleissheim), Germany under the chairmanship of Russell Shields (Ygomi LLC).

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**

The Chairman welcomed the participants (11 on-site, about a dozen remote) and thanked BMW (Dr Joachim Scholten) for hosting the meeting. The final list of participants is reproduced in [Doc 008](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20111214-Geneva/008%20Resolution%20GSC-16-14%20-%20Intelligent%20Transportation%20Systems%20Task%20Force%20.docx). The agenda as approved by the meeting is reproduced in [Doc‑001](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20120626-Munich/001%20-%20Draft%20agenda.docx).

1. **Introductions**

Input documents were presented either on site or by remote participants and discussed by the meeting.

**Review of Troy (= venue of 2nd Collaboration meeting) action items**

1. **ITU Secretariat, Reinhard Scholl: “Draft procedures to converge, harmonize and incorporate ITS communication standards into ITU Recommendations (**[**Doc 006**](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20120626-Munich/006%20-%20Draft%20working%20procedures.docx)**)**

France Telecom Orange (Olivier Dubuisson) asked whether an SDO that was the author of a standard would also be responsible for an update of the standard. The chairman said that this was the strong preference but that ITU-T or ITU-R could not be prohibited to make extensions to such a standard if members so wished.

**Action #1: ITU Secretariat** to reflect comments by France Telecom Orange in the working procedures.

1. **Chair - Reporting on communications requirements of high-priority ITS applications (**[**Doc 003**](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20120626-Munich/003%20-%20Communications%20requirements%20of%20high-priority%20ITS%20applications.zip)**)**

[**Doc 003**](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20120626-Munich/003%20-%20Communications%20requirements%20of%20high-priority%20ITS%20applications.zip) is a compilation by the ITU Secretariat of replies to a [questionnaire](https://docs.google.com/spreadsheet/viewform?formkey=dDY3ZmRaOEFkX2pnVm1lQXVaVmZTNlE6MQ) on communications requirements of high-priority ITS applications in different countries and regions, distributed by the ITU Secretariat shortly after the 2nd meeting of the Collaboration in Troy, USA. Doc 003 addresses the first work item of the Collaboration, “Perform a study of identified ITS application requirements so that needed communication capabilities and performance can be properly defined. This study should identify and use existing sets of ITS application requirements from various global regions and supplement them to reflect recent application developments and direction. …”

1. **Japan: Yushi Naito (ITU-T SG 16 Chairman, Mitsubishi Electric) presented section 5 of Doc 003**, the input by Japan (TTC) (Yasubumi Chimura).

The requirements of TTC are:

5.1 Utilization of In-Vehicle Total Information & Communication Environment

5.2 Ad-hoc network between vehicle to vehicle communications for disaster response & resilience

5.3 Disaster information

5.4 Alive information (“I am alive” message)

5.5 Person finder

5.6 Evacuation route information

5.7 Refugee information

5.8 Management of Electric Vehicles and Electric Vehicle charging spots

1. **China: Kevin Jianyu Li (China Unicom) presented section 2 of Doc 003**, the input by China (CCSA)

The requirements of CCSA are:

2.1 Voice navigation

2.2 Operation data report of the vehicle

1. **China: Kevin Jianyu Li (China Unicom) presented section 3 of Doc 003**, applications collected by China Unicom through its industry research and face-to-face interview with some ITSC (ITS China) experts. The material provided is for technical reference and not yet an official contribution by ITSC.

3.1 Dynamic monitoring for operating Vehicles

3.2 ETC (Electronic Toll Collection)

1. **Arab region and Tunisia: Muna Hamdi** (MGH **FutureVision - iMFV VRC member)**, **presented** [**Doc 004**](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20120626-Munich/004%20-%20Future%20Vision%20of%20iMobility%20in%20Arabia.docx) **“Future Vision of iMobility in Arabia**, and [**Doc 004Add1**](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20120626-Munich/004Add1%20-%20Future%20Vision%20of%20iMobility%20in%20Arabia.zip) **“Future Vision of iMobility in Arabia – Towards Unified Regional Strategy”.** Hany Hasssan (Rakedet, Egypt) emphasized that because there are not ITS legacy systems in Arabia, Arabia is a good place for a green-field approach.

**Scott Cadzow** (Cadzow communications - iMFV VRC member) presented the communication requirement for the ITS Applications **in section 1 of Doc 003**, the input of the Arab region

The requirements of the Arab region are:

1.1 Traffic Management, Operation / Vehicle Services / Emergency / National Security domains: Policing/enforcing traffic regulations: Law enforcement applications

1.2 Traffic Management & Control: Traffic Incident Management (TIM)

1.3 Traveller Information & Traffic Management & Operations (Transport Infrastructure maintenance management): Infrastructure signage reinforcement

1.4 Vehicle services: Traveller Assistance Navigation/ Assistive driver awareness

1.5 Multimodal Travel Information: Urban Multi-Modal Routing

1.6 Vehicle Services: Intersection Collision Warning/Avoidance

1.7 Transport related personal safety- Public travel security: CCTV surveillance

1.8 Infotainment: content sharing applications and services (advertisements, entertainment)

The Tunisian Example provided by the Ministry of Transport, Tunisia:

1.9 Passenger Information System

1.10 Air Traffic Management System and Data Processing

1.11 Vessel Traffic System

1.12 Meteorological Information System for Road and Rail Traffic

1. **Europe: Martin Arndt (ETSI) presented section 4 of Doc 003**, the input by ETSI

ETSI’s requirements (from ETSI TR 102 638 V1.1.1 (2009-06): Intelligent Transport Systems (ITS); Vehicular Communications; Basic Set of Applications; Definitions) are:

4.1 Co-operative ITS – General characteristics and requirements

4.2 Co-operative road safety applications: Driving assistance – co-operative awareness

4.3 Co-operative road safety applications: Driving assistance – Road hazard warning

4.4 Co-operative traffic efficiency: Speed management

4.5 Co-operative traffic efficiency: Co-operative navigation

4.6 Co-operative local services: Location based services

4.7 Global internet services: Communities services

4.8 Global internet services: ITS station life cycle management

Scott Cadzow said that ETSI’s security considerations are available in a separate document.

1. **United States: Dick Schnacke (Transcore, ISO TC 204)** presented section 6 of Doc 003, the input by United States of America (Department of Transportation) focusing on road safety applications.

6.1 Forward-collision warning

6.2 Emergency Brake-Light Warning / Emergency Electronic Brake Lights

6.3 Intersection Movement Assist

6.4 Blind Spot Warning / Lane Change Warning

6.5 Do Not Pass Warning

6.6 Left Turn Across Path / Opposite Direction

1. **Discussion / Synthesis / Gap analysis**

BMW asked whether the auto manufacturers have given their input. The Chairman said that it has always been challenging to get the automotive industry involved; any suggestion how to enhance the dialogue between the automotive industry and the telecoms/ICT industry would be welcome. The fact that BMW hosted this meeting of this collaboration was very much welcome.

There was an extensive discussion on the following points:

* Standardization gaps for updating software of communication devices in vehicles.

The chairman said that there were serious gaps in standardization because currently there is no guarantee that communications capabilities in a vehicle continue to work throughout the lifetime of a vehicle (often exceeding ten years) when the ICT industry is moving to the next technology. The automotive industry needs standards that allow updates of the software of its devices over the air including software-updatable antenna filters (ITU-R WP 5A).

* Standardization of APIs: there is a need to standardize APIs of services that are provided in the vehicle through nomadic or built-in communication devices; standards are needed to describe how (not what) the information is provided in the vehicle.
* Driver distraction and the need for the vehicle to have situational awareness, i.e., whether the driver is in dense rush-hour traffic or cruising on an empty highway; depending on the situation, a driver would be allowed to do more or less things.

The chairman and Scott Cadzow volunteered to assimilate the requirements in Doc 003, and Dick Schnacke agreed to come back with a name to support the effort. The chairman said that after completion of this document, the Collaboration can tackle the second work item (gap analysis).

**Action #2: Russ Shields and Scott Cadzow, together with a volunteer to be nominated by Dick Schnacke**, to assimilate the requirements in Doc 003 by the end of July 2012.

**Action #3: ITU Secretariat** to circulate the resulting requirements document widely, in particular to SDOs, for comments which should be received by mid-August in time for the 4th collaboration meeting (21 August, Tokyo).

**Other Issues**

1. **ITU / US Dept of State (Paul Najarian) - Theme World Telecommunication and Information Society Day 2013 (**[**Doc 005**](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20120626-Munich/005%20-%20World%20Telecommunication%20and%20Information%20Society%20day.docx)**)**

The ITU Council, ITU’s highest decision making organ in between ITU Plenipotentiary Conferences, will meet on 4-13 July 2012 and will be requested to endorse the theme of *“ICTs and improving road safety”* for World Telecommunication and Information Society Day 2013 (WTISD-13).

The Collaboration supports ITU’s effort for WTISD-13.

1. **ITU-R (Paul Najarian) - Liaison statement to the Collaboration on ITS Communication Standards on WRC-15 agenda item 1.18 (**[**Doc 002**](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20120626-Munich/002%20-%20LS%20-%20Collaboration%20on%20Intelligent%20Transport%20Systems%20communication%20standards.docx)**)**

ITU-R Working Party 5A informs that it continues to work on ITS and in particular on WRC (World Radiocommunication Conference) Agenda Item 1.18 (WRC-12 Resolution 654 “Allocation of the band 77.5-78 GHz to the radiolocation service to support automotive short-range high-resolution radar operations”).

ITU-R WP 5A therefore invites ITU-T, the Collaboration on ITS Communication Standards, and in particular External Organizations that are participants in the Collaboration, to contribute in advancing this work by submitting relevant studies (including any systems and technical characteristics, as well as Human-to-Machine interface (HMI) issues between the radar and the driver) prior to the next meeting of WP 5A, scheduled for 5-16 November 2012, in Geneva. The deadline for input contributions for the November meeting of ITU-R Working Party 5A is 29 October 2012 at 1600 UTC.

*Subsequent note:* Resolution 654 (WRC-12) is reproduced in Annex 2.

**Action #4, all:** to submit contributions on WRC-12 Resolution 654 to the meeting of ITU-R Working Party 5A (deadline 29 October 2012).

In the discussion, Paul Najarian mentioned that ITU-R Working Party 5A at its meeting last month started work on phase 2 of cognitive radio systems. He offered to work with BMW to make a contribution on the topic.

Furtermore, Paul Najarian said that at the last meeting of ITU-R Working Party 5A, a Working Document was initiated in order to develop a Recommendation on the technical and operational characteristics of automotive radar for ITS applications in the 77 to 78 GHz band, to be used for sharing studies. One of the contributions submitted to the meeting of ITU-R 5A was from Germany. During the deliberations within 5A, it was clearly noted that the technical parameters in the German contribution did not fully conform to the current standards for such equipment currently in use in this band. ITU-R 5A encourages ETSI to submit its related standards to ITU-R 5A.

**Action #5: Martin Arndt** to inform ETSI TC ERM (Technical Committee on EMC and Radio Spectrum Matters) of the request by ITU-R 5A to submit ETSI’s standards on the matter (ETSI EN 302 264-1 and -2, as well as ETSI TR 102 263) to ITU-R 5A.

**Next steps**

1. **Update of status report to ITU TSAG (**[**Doc 007**](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/Meeting-20120626-Munich/007%20-%20Report%20to%20TSAG.docx)**)**

**The ITU Secretariat (Reinhard Scholl) presented Doc 007** which will be presented at the meeting of the ITU-T Telecommunication Standardization Advisory Group (TSAG) 2-4 July 2012.

The Collaboration recommends to TSAG that the Collaboration be continued.

**Action #6, ITU Secretariat** to provide an updated version of Doc 007 to TSAG which will include the highlights of the this meeting of the Collaboration.

1. **Update of Terms of Reference (**[**v 15 Dec 2011**](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/ToR/CITS-ToR-2011-12-15.docx)**) and list of work items (**[**v 3 Apr 2012**](http://www.itu.int/en/ITU-T/extcoop/cits/Documents/ToR/Archive-obsoleted-work-items/Work%20Items%20%28v120403%29.docx)**)**

The Chairman said no comments have been received on the ToR and the list of work items.

France Telecom Orange referred to the point it made in section 4.

1. **Collaboration management**

No comments.

1. **Next meeting**

The 4th meeting of the Collaboration will take place 21 August 2012, followed by the ITU-T Focus Group on Driver Distraction on 22-23 August 2012 in Tokyo, Japan, at the kind invitation of TTC.

The chairman said that there is also an open invitation from Japan to ISO TC 204 WG 16 to have WG 16 meet in Japan.

Meetings thereafter are tentatively scheduled in conjunction with the [ITS World Congress](http://2012.itsworldcongress.com/) (22‑26 October 2012, Vienna on Sunday 29 October, 2012 and on Monday 17 December, 2012 (Washington, D.C.).

**Action #7: ITU Secretariat** to post the invitation letter with all of the logistical information.

1. **Any other business**

Subsequent note: the status of the action items of the previous meeting is reflected in Annex 1.

1. **Close of meeting**

The Chairman thanked the participants for all the discussions and the host BMW for the excellent meeting facilities. Reinhard Scholl thanked the host as well and encouraged BMW to consider its participation in the Collaboration.

The meeting closed at 4:45pm local time.

The Chairman invited the participants to a drink and dinner after the meeting which the participants happily accepted.

**List of new actions:**

**Action #1: ITU Secretariat** to reflect comments by France Telecom Orange in the working procedures.

**Action #2: Russ Shields and Scott Cadzow, together with a volunteer to be nominated by Dick Schnacke**, to assimilate the requirements in Doc 003 by the end of July 2012.

**Action #3: ITU Secretariat** to circulate the resulting requirements document widely, in particular to SDOs, for comments which should be received by mid-August in time for the 4th collaboration meeting (21 August, Tokyo).

**Action #4, all:** to submit contributions on WRC-12 Resolution 654 to the meeting of ITU-R Working Party 5A (deadline 29 October 2012).

**Action #5: Martin Arndt** to inform ETSI TC ERM (Technical Committee on EMC and Radio Spectrum Matters) of the request by ITU-R 5A to submit ETSI’s standards on the matter (ETSI EN 302 264-1 and -2, as well as ETSI TR 102 263) to ITU-R 5A.

**Action #6, ITU Secretariat** to provide an updated version of Doc 007 to TSAG which will include the highlights of the this meeting of the Collaboration.

**Action #7: ITU Secretariat** to post the invitation letter with all of the logistical information.

**Annex 1**

**Status of Actions from previous Collaboration meeting**

* **ITU Secretariat** to develop a set of draft procedures in consultation with **Dick Schnacke** and **Michael Sharpe**, by 16 April 2012, i.e. prior to ISO TC 204 meeting.
	+ **Done:** new draft presented in Munich
* **ITU Secretariat** to develop reporting template, by **30 April 2012**. The ITS application requirements analysis developed in the past might serve as guidance. **ISO / Dick Schnacke** to send old reporting template.
	+ **Done:** Also created a 60+ page compilation of reports from regions (Doc 003)
* **Kevin Li Jianyu (China Unicom)** to request CCSA, ITS China, and the ITS Centre to provide communications requirements for high-priority ITS applications in China to ITU Secretariat by **31 May, 2012**
	+ **Done:** see Doc 003
* **Takaaki Sugiura and Yushi Naito** to request TTC and ITS Japan to provide communications requirements for high-priority ITS applications in Japan to ITU Secretariat by **31 May, 2012**
	+ **Done:** see Doc 003
* **Michael Sharpe (ETSI)** to report on communications requirements for high-priority ITS applications in Europe including what are the requirements that the ETSI TC ITS work programme is trying to accommodateto ITU Secretariat by **31 May, 2012**
	+ **Done:** see Doc 003 (Martin Arndt)
* **Dick Schnacke** with the support of **US DOT / Steve Sill** to report on communications requirements for high-priority ITS applications in the U.S. to ITU Secretariat by **31 May, 2012**
	+ **Done:** see Doc 003
* **Muna Hamdi (iMobility: Future Vision / ITS Arab)** to report on communications requirements for high-priority ITS applications in the Arab region to ITU Secretariat by **31 May, 2012**
	+ **Done:** see Doc 003
* **ITU Secretariat** to reach out to ITU-T Study Group 17 and find out what is needed from SG17 side to provide guidance on **Item 4**
	+ **Pending (importance of SG17 involvement was pointed out in TSAG document)**
* **ITU Secretariat** to assist bringing DOC-009 to the attention of the <http://broadbandcommission.org/> and its new Commissioners
	+ **Done:** ITU Secretariat brought this to the attention of different ITU activities: Broadband Commission, Focus Group Innovation and ITU Telecom WORLD. Colleagues will contact Muna Hamdi directly if interested. Muna Hamdi gave presentation at the meeting of ITU-T Focus Group Innovation, 20-21 June 2012, Tunis, Tunisia. ITU Secretariat shared UN Road Safety Collaboration contact information with Muna Hamdi on 13 July 2012.
* **ITU Secretariat** to assist bringing DOC-003 to the attention of the World Standards Cooperation ([WSC](http://worldstandardscooperation.org/)), in particular the International Electrotechnical Commission ([IEC](http://www.iec.ch/)), and with ITU-T smart grid experts
	+ **Done**
* **ITU Secretariat** to reach out (via China Unicom) to Embedded Mobile Transport & Automotive group (EMTA) of GSMA’s Connected Living Programme ([CLP](http://www.gsma.com/connectedliving)) to participate in future work of the Collaboration
	+ **Done:** conference call with Russ Shields, Reinhard Scholl and GSMA on 11 May and meeting between Russ Shields and Francesca Forestieri on 6 June. ITU Secretariat will follow up to involve GSMA in future meetings.
* **ITU Secretariat** to update Collaboration website
	+ **Done**
* **ITU-R** to consider seeking input from IEEE and [APT Wireless Group](http://www.apt.int/APTAWG) in addition to organizations listed on DOC-002add, slide 4
	+ **Pending**
* **ISO TC 204 WG16** and **CNIT** to further discuss DOC-004 and DOC-005 at ISO TC 204’s next meeting in Melbourne starting 16 April 2012, to find ways to accommodate the input and to collaborate
	+ **Ongoing**: Paolo Pagano planning to present remotely at meeting of ISO TC 204 WG16 on 30 June 2012
* **Dick Roy / ISO** to provide additional information about existing ITS TVRAs
	+ **Done:** Dick Roy sent a list of TVRAs on 7 April 2012

Annex 2

RESOLUTION 654 (WRC‑12)

Allocation of the band 77.5-78 GHz to the radiolocation service to support automotive short-range high-resolution radar operations

The World Radiocommunication Conference (Geneva 2012),

considering

*a)* that the use of information and communication technologies (ICT) within intelligent transport systems (ITS), such as automotive short-range high-resolution radars (SRR), may significantly contribute to the improvement of road safety;

*b)* that the availability of spectrum for components of ITS such as SRR would contribute to the goal of improving road safety, including distracted driving, transport efficiency and the quality of the environment;

*c)* that ITU‑R has been studying short-range vehicular radars;

*d)* that worldwide compatibility of spectrum allocation would be beneficial in terms of efficient use of spectrum and economies of scale, in order to give the automotive industry as well as the components industry the confidence to make substantial investment in SRR technology;

*e)* that the frequency bands 76-77.5 GHz and 78-81 GHz are already allocated to the radiolocation service on a primary basis in all three ITU Regions;

*f)* that the 77-81 GHz frequency band seems to be the most suitable band for SRR, since 76-77 GHz is designated for long-range automotive radars in many countries and sharing studies have concluded that sharing is not achievable between short-range and long-range automotive radars;

*g)* that the frequency band 77-81 GHz is already designated for SRR in many countries worldwide;

*h)* that the frequency band 77.5-78 GHz is allocated to the amateur and amateur-satellite services on a primary basis and to the radio astronomy service (RAS) and space research (space-to-Earth) service on a secondary basis;

*i)* that the aggregate effect of the automotive SRR must be considered;

*j)* that the 76-77.5 GHz and 79-81 GHz bands are allocated to the RAS on a primary basis, and the 77.5-79 GHz band is allocated to the RAS on a secondary basis;

*k)* that the 76-77.5 GHz and 78-81 GHz bands are allocated to the amateur, amateur-satellite and space research (space-to-Earth) services on a secondary basis;

*l)* that sharing with the radio astronomy service has been studied in some countries concluding that SRR operating in the vicinity of radio astronomy stations may cause interference to those stations, but that regulatory measures could be identified enabling coexistence between SRR and the radio astronomy service in the frequency band 77-81 GHz, which is dependent on the aggregated impact of SRR devices transmitting in the direction of a radio astronomy station;

*m)* that Resolution ITU‑R 54‑1 calls for studies to achieve harmonization for SRDs,

recognizing

ITU Council Resolution 1318 (Council 2010), on ITU’s role in ICTs and improving road safety,

noting

*a)* that Recommendation ITU‑R M.1890, on intelligent transport systems (ITS) – guidelines and objectives, provides general guidelines for ITS radiocommunication systems which covers also SRR;

*b)* that Recommendation ITU‑R M.1452 provides guidance on the use of millimetre wave vehicular radar equipment and on technical characteristics of millimetre wave radiocommunication systems for data communications to be used for ITS;

*c)* that, while vehicular SRR is expected to contribute significantly to road safety, such applications have not been defined as a safety service according to No. **1.59** or subject to No. **4.10**,

resolves to invite WRC‑15

to consider a primary allocation to the radiolocation service in the 77.5-78 GHz frequency band, taking into account the results of ITU‑R studies,

invites ITU‑R

to conduct, as a matter of urgency, and in time for consideration by WRC‑15, the appropriate technical, operational and regulatory studies, including:

i) sharing studies and regulatory solutions to consider a primary allocation to the radiolocation service in the band 77.5-78 GHz, taking into account incumbent services and existing uses of the band;

ii) compatibility studies in the band 77.5-78 GHz with services operating in the adjacent bands 76-77.5 GHz and 78-81 GHz;

iii) spectrum requirements, operational characteristics and evaluation of ITS safety-related applications that would benefit from global or regional harmonization,

invites administrations

to contribute actively to ITU‑R studies on this issue,

instructs the Secretary-General

to bring this Resolution to the attention of the international and regional organizations concerned, including ISO and the ITU’s Collaboration on ITS Communication Standards.

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