

I n t e r n a t i o n a l T e l e c o m m u n i c a t i o n U n i o n

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

FG Distraction

Version 1.0
(03/2013)

ITU-T Focus Group on Driver Distraction

Final Report

Focus Group Technical Report



FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The procedures for establishment of focus groups are defined in Recommendation ITU-T A.7. The ITU-T Focus Group on Driver Distraction (FG Distraction) was established further to ITU-T TSAG agreement at its meeting in Geneva, 8-11 February 2011. ITU-T Study Group 12 is the parent group of FG Distraction.

Deliverables of focus groups can take the form of technical reports, specifications, etc. and aim to provide material for consideration by the parent group in its standardization activities. Deliverables of focus groups are not ITU-T Recommendations.

SERIES OF FG DISTRACTION TECHNICAL REPORTS

Final Report

Report on Use Cases

Report on User Interface Requirements for Automotive Applications

Report on Situational Awareness Management

Report on Vehicle-to-Applications Communications Interface

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ABSTRACT

This document contains the final report of the ITU-T Focus Group on Driver Distraction (FG Distraction). Previous meetings are summarized, key achievements identified, and deliverables described. This report, along with the deliverables described in this report, marks the end of FG Distraction. However, it is really just the beginning of ITU-T efforts to address driver distraction and workload. An explanation of how this work will transition into the formal ITU-T structure is also given.

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1. Introduction

This document contains the final report of the ITU-T Focus Group on Driver Distraction (FG Distraction). ITU Council Resolution 1318 defined the ITU's role in ICTs and improving Road Safety. This report and the FG Distraction deliverables referenced in this report are a direct response to this Resolution and a concrete example of how the ITU-T is addressing the global problem of driver distraction and workload.

More information about FG Distraction, including the Terms of Reference (ToR) and past meeting documents (e.g., contributions, liaisons, reports), can be found at the FG Distraction webpage: <http://www.itu.int/en/ITU-T/focusgroups/distraction/>.

Section 2 provides an overview of correspondence. Section 3 summarizes the meetings that have taken place in terms of hosts, participants, and contributions. Section 4 summarizes FG Distraction achievements. Section 5 describes how the work of FG Distraction is being transitioned into the formal ITU-T structure.

Details of correspondence, meeting participants, and contributions can be found by going to the FG Distraction webpage and accessing the meeting report and associated documents for each meeting.

2. Summary of correspondence

There have been 7 incoming Liaison Statements (LS) and 10 outgoing LS over the lifetime of FG Distraction. Additionally, some of the outgoing LS that were intended to raise awareness of FG Distraction and solicit input on our work plan were distributed to a large number of organizations.

Liaison relationships were established with key organizations such as ISO TC 22/SC 13/WG8, CEN TC 278, SAE Safety & Human Factors Steering Committee, and the ITU-T Joint Coordination Activity on Accessibility and Human Factors (JCA-AHF). FG Distraction meetings were also co-located with the Collaboration on ITS Communications (<http://www.itu.int/en/ITU-T/extcoop/cits/>) to encourage participation between the groups.

3. Summary of meetings

FG Distraction has held a total of 9 face-to-face meetings kindly hosted by the following organizations:

- 1) **University of Michigan Transportation Research Institute (UMTRI)**, Ann Arbor, Michigan, USA
- 2) **Telecommunication Technology Committee (TTC) and National Institute of Information and Communications Technology (NICT)**, Kyoto, Japan
- 3) **ITU**, Geneva, Switzerland
- 4) **Society of Automobile Engineers (SAE)**, Troy, Michigan, USA
- 5) **BMW**, Munich, Germany
- 6) **Telecommunications Technology Committee (TTC)**, Tokyo, Japan
- 7) **Forschungszentrum Telekommunikation Wien GmbH (FTW)**, Vienna, Austria
- 8) **Alliance of Automobile Manufacturers (Alliance)**, Washington, D.C., USA
- 9) **ITU**, Geneva, Switzerland

Participation consisted of a good mix of representatives from automotive, telecommunications, and consumer electronics market segments; as well as academia and government agencies. Annex A contains the complete list of people that participated in FG Distraction at some point. This diversity is particularly important considering that the historical boundaries between these groups are disappearing. Drivers are increasing using their telecommunications and consumer

electronics devices in the vehicle while driving, connected vehicle applications/services are increasing, academic research is playing a key role in understanding the nature of driver distraction/workload and how to mitigate it, and governments are becoming increasingly involved due to the public safety aspects.

There were a total of 22 contributions to FG Distraction. They came from a diverse set of organizations including automakers, telecommunications organizations, the consumer electronics industry, academic institutions, and government agencies.

4. Summary of achievements

FG Distraction has been instrumental in raising awareness of ITU-T efforts, opening lines of communications with key organizations, providing direction to the ITU-T work plan, and pulling non-ITU-T expertise (e.g., related to driver distraction/workload) into the ITU-T standardization process.

FG Distraction has greatly increased awareness of ITU-T efforts to address driver distraction and workload. LS have been sent to a large number of organizations. Presentations have been given to several organizations and conferences including ISO TC 22/SC 13/WG8, SAE Safety & Human Factors Steering Committee, Connected Vehicle Trade Association, Car Connectivity Consortium, ITS America Safety Forum, AutoUI 2012, and ITS World Congress 2012. The ITU-T has issued a press release and there have been blog posts as a result of FG Distraction.

Points of contact and lines of communication have been opened with key organizations such as ISO TC 22/SC 13/WG 8, CEN TC 278, SAE Safety & Human Factors Steering Committee, Alliance of Automobile Manufacturers (Alliance), National Highway Transportation Safety Administration (NHTSA), Consumer Electronics Association (CEA), and others.

FG Distraction has also helped structure the ITU-T work plan to address driver distraction and workload. This comes in the form of 3 draft new ITU-T Recommendations which were conceived and progressed within FG Distraction:

- 1) P.UIA (*User Interface requirements for Automotive applications*)
- 2) G.SAM (*Mechanisms for managing the situational awareness of drivers*)
- 3) G.V2A (*Communications interface between external applications and a Vehicle Gateway Platform*).

Finally, FG Distraction has produced 4 reports as deliverables:

- 1) **Report on Use Cases** – this report describes use cases and user scenarios that show why the Recommendations ITU-T P.UIA, G.SAM, and G.V2A are needed to support safe interaction of ICT applications/services with drivers.
- 2) **Report on User Interface Requirements for Automotive Applications** – this report proposes a structure and initial content for draft new Recommendation ITU-T P.UIA (*User Interface requirements for Automotive applications*). P.UIA will give guidance to ICT application authors, system architects, and device manufacturers on how to design their products to enhance the driver's Situational Awareness (SA). A structure for P.UIA is proposed which can easily scale to reflect the latest in what is known to be good design practice and performance. Existing works and on-going activities related to P.UIA are also identified.
- 3) **Report on Situational Awareness Management** – this report describes system capabilities that are important for improving the safety of driver interaction with ICT applications/services. An understanding of these system capabilities will be important during the development of standards on the underlying mechanisms. The main goal of this report is to support standardization efforts related to draft new Recommendation ITU-T G.SAM (*Mechanisms for managing the situational awareness of drivers*).
- 4) **Report on Vehicle-to-Applications Communications Interface** – this report describes different approaches being used to enable external ICT applications/services to communicate with a vehicle. These external applications/services could be running on a nomadic device, roadside infrastructure, or cloud-based server. Existing works and on-going activities related to G.V2A (*Communications interface between external applications and a Vehicle Gateway Platform*) are also identified.

5. Transition of work from FG Distraction to ITU-T

This report, and the 4 FG Distraction reports described in the previous section, marks the completion of FG Distraction activities and termination of the focus group. However, this is really just the beginning of ITU-T efforts to address driver distraction and workload.

This work is being transitioned from FG Distraction into the formal ITU-T structure as follows:

- Work on draft new Recommendation ITU-T P.UIA will continue in Q4/12
- Work on draft new Recommendations ITU-T G.SAM and G.V2A will continue in Q27/16
- New work items related to driver distraction will be considered in Q4/12; those requiring external co-ordination/collaboration may also be taken to the Collaboration on ITS Communications or directly to an individual organization

Going forward it will be important to maintain and leverage the external relationships that have been established by FG Distraction. More specifically, ITU-T work should be co-ordinated with these external groups so that there is not a duplication of effort and the best suited organization works on a particular item. External subject matter experts should also be given an opportunity to comment on ITU-T Recommendations in those areas that the ITU-T does not have a core competency.

ANNEX A

(List of FG Distraction participants)

Prefix	Family name	Given name	Entity	Entity country
Mr	Abe	Tomoaki	Panasonic Corporation	Japan
Mr	Akamatsu	Motoyuki	NICT	Japan
Mr	Chimura	Yasubumi	Oki Electric Industry	Japan
Mr	Cordeiro	Alan	Panasonic	United States
Mr	Cutts	Jack	Consumer Electronics Association	United States
Mr	Deering	Richard	RK Deering & Associates, Inc.	United States
Mr	Dugerdil	Bernard	Freescale Semiconductor	United States
Mr	Fraser	Derek	Chrysler	United States
Mr	Fröhlich	Peter	Telecommunications Research Center (FTW)	Austria
Mr	Gierlich	Hans Wilhelm	HEAD Acoustics	Germany
Ms	Gomi	Yuka	Ygomi LLC	United States
Mr	Green	Paul	University of Michigan Transportation Research Institute (UMTRI)	United States
Mr	Gryc	Andy	QNX Software Systems	Canada
Ms	Gwynne	Gloria	United States	United States
Mr	Hanowski	Richard	Virginia Tech Transportation Institute	United States
Mr	Heinrich	Christian	Daimler AG	Germany
Mr	Hess	Markus	Mercedes-Benz Research & Development North America, Inc.	United States
Mr	Hiramatsu	Kaneo	National Traffic Safety and Environment Laboratory	Japan
Mr	Huesmann	Alexander	BMW Research and Technology	Germany
Mr	Johnson	Kerry	QNX Software Systems	Canada
Mr	Kazuya	Takeda	Nagoya University	Japan
Mr	Lamontagne	Rene	Research in Motion	Canada
Mrs	Lantelme	Isabelle	INSAP	France
Mr	Lawrence	Smythe	SAE International	United States
Mr	Lee	John S	Research in motion	United States
Mr	Lin	Brian T.	University of Michigan Transportation Research Institute (UMTRI)	United States
Mr	Lindenthal	Andreas	Wind River	Germany
Mr	Lo	Eiwen	University of Michigan Transportation Research Institute (UMTRI)	United States
Mr	Miller	Thomas	Ford Motor Company	United States
Mr	Monk	Chris	NHTSA	United States
Mr	Morton	Alfred	AT&T	United States
Mr	Naboulsi	Mouhamad A.	iQ-Telematics	United States
Mr	Naito	Yushi	Mitsubishi Electric	Japan
Mr	Nakamura	Yukinobu	Honda R&D Co., Ltd.	Japan
Mr	Onishi	Hirofumi	Alpine Electronics Research of America	United States
Mr	Pennock	Scott	Research in Motion	Canada
Mr	Pfliegl	Reinhard	A3PS	Austria
Mr	Raggett	Dave	W3C	UK
Mr	Rashid	Haroon	Interconnect Partners	Pakistan
Mr	Sakaguchi	Hisashi	NICT	Japan
Mr	Schmidt	Scott	Alliance of Automobile Manufacturers	United States
Mr	Scholten	Joachim	BMW Research and Technology	Germany
Mr	Schreiner	Chris	Strategy Analytics	United States
Mr	Sekine	Michiaki	National Traffic Safety and Environment Laboratory	Japan
Mr	Selke	Dan	SAE International	United States
Ms	Severino	Clara	Research in Motion	Canada
Mr	Shields	T. Russell	Ygomi LLC	United States
Mr	Su	Kerina W.	University of Michigan Transportation Research Institute (UMTRI)	United States
Mr	Sykes	Paul	Freescale Semiconductor	United States
Mr	Takeda	Kazuya	Nagoya University	Japan
Mr	Tijerina	Louis	Ford Motor Company	United States
Mr	Tschirhart	Michael	Visteon Corporation	United States
Mr	Wheelock	Robert	Ford Motor Company	United States
Mr	Young	Richard	Wayne State University	United States
Mr	Yurkonis	Philip	Research in Motion	Canada
Mr	Adolph	Martin	ITU/TSB	
Ms	Labare	Emmanuelle	ITU/TSB	
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