ITU, ICT and Road Safety

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Purpose of talk

• ITU and Road Safety?

• What are the areas of interest?

• What is ITU doing?
Decade of Action for Road Safety

Increasing trend of road traffic deaths and injuries, worldwide

Changing role of ICT in the road traffic environment
Main Areas of Interest

- Intelligent Transportation Systems (ITS)
- Technology-caused Driver Distraction
Intelligent Transportation Systems

• Making vehicles and infrastructure smarter to
  – Reduce congestion
  – Reduce pollution and fuel consumption
  – ...
  – Increase road safety

• Accident prevention
  – Ad-hoc safety communications
    • Vehicle-to-Vehicle (V2V)
    • Vehicle-to-Infrastructure (V2I)
    • V2X
  – Variable speed limits
  – Traffic enforcement

V2V application: Forward Collision Warning (GM)

V2I application: Increasing safety at intersections (Ford)
ITS for Emergency Notification

**eCall: The crashed car calls 112!**

1. **Emergency Call**
   A 112 emergency call (eCall) is made automatically by the car as soon as on-board sensors (e.g., airbag sensors) register a serious accident. By pushing a dedicated button in the car, any car occupant can also make an eCall manually.

2. **Positioning**
   Via satellite positioning and mobile telephony caller location, the accurate position of the accident scene is fixed and then transmitted by the eCall to the nearest emergency call centre. More information is given in the eCall, e.g., the direction of travel and the vehicle type.

3. **Emergency call centre (PSAP)**
   The eCall’s urgency is recognized, the accident’s location can be seen on a screen. A trained operator tries to talk with the vehicle’s occupants to get more information. If there is no reaction, emergency services are sent off without delay.

4. **Quicker help**
   Due to the exact knowledge of the accident’s location, the emergency services (e.g., ambulance, fire fighters, police) arrive much quicker at the crash site. Time saved translates into lives saved.

**Source:** ADAC Infogramm
ITS in ITU

- Radiocommunication Sector (ITU-R):
  - Basis for the functioning of any wireless communication in ITS
  - Enables applications based on services such as the global positioning system (GPS)

- Standardization Sector (ITU-T):
  - Standards for vehicle gateway platform for ITS services and applications
  - ISO / ITU *Joint Task Force for ITS Communications*
  - Related Technology Watch reports [http://itu.int/techwatch](http://itu.int/techwatch)
Autonomous Vehicles?

Google / Carnegie Mellon School of Computer Science
Technology-caused Driver Distraction

- Using a mobile phone while driving increases chances of being involved in a crash by factor of 4
- Similar risk for both, hand-held and hands-free phones
- Other sources of driver distraction

- Reaching for a moving object while driving increases the risk of a crash or near-crash by 9 times,
- Looking at an external object while driving by 3.7 times,
- Reading while driving by 3 times, and
- Applying makeup while driving by 3 times.
Visual Distraction
Auditory Distraction
Biomechanical / Physical Distraction
Cognitive Distraction
What can be done?

- Distraction-free design of services and devices
- Improved management and seamless integration of nomadic devices in the automotive cockpit
- Technologies to enforce mobile phone use policies
  - e.g., MobileSafer
    - Software “App” for mobile phone that eliminates the temptation to text while driving and keeps driver connected via hands-free services
Focus on Driver Distraction

• 1st Meeting: 17-18 May, Ann Arbor, Michigan
• Open to ITU members and non-members
• Expected participation: ICT and automotive industry, governments, R&D

• For more information, see www.itu.int/en/ITU-T/focusgroups/distraction/

Focus on Car Communication

• Established in November 2009
• Participation from ICT and automotive industries, R&D (ITU members and non-members)

• Website: www.itu.int/en/ITU-T/focusgroups/carcom/

Scott Pennock (QNX Software Systems): “Using Telepresence to Enhance the Driving Experience” (Presentation at FNC 2011)
ICT and road safety – work items

• Assess the (positive/negative) impacts of the use of ICT products and services while driving a vehicle

• Develop guidelines and standards for ICT products and services to keep ICT-related driver inattention to a minimum

• Study and ensure the safe interplay of ITS applications and services, personal nomadic devices and innovative driver assistance systems

• Assess and harmonize existing emergency notification solutions
Thank you!

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