

Distraction

- Priorities for Research and Countermeasure Development

Aims

- Identify countermeasure priorities
 - Countermeasure = Any action taken to counteract or correct another
 - Multiple stakeholder perspectives
- For each countermeasure, do we have:
 - Lack of knowledge?OR
 - Lack of action/initiative?
- Share the outcome publically (e.g. internet or communiqué, chapter in the conference book)

Pre-Session Preparation

- Extracted and listed countermeasures headings, deriving from Regan, Lee and Young (2008)
- Kept content from the last conference DDI 2009
- Added to the content from DDI 2009

Post-Conference Updates

- Add additional recommendations deriving from:
 - This Special-Session
 - This Conference papers/presentations
 - Feedback from emails from conference participants

Research Priorities - Comments from presenters and audience during session...

- Understand upstream factors, precursors to distraction, motivation
 - E.g. Behavioral Adaptation
- Research on how to influence designers and other stakeholders, e.g. from an implementation perspective
- Define our goal so we know when we're done – "Vision Distraction"
- Do more research in context...consider the influence of the environment a distraction occurs within

Countermeasure Framework

(session comments in grey)

1. **Legislation and Enforcement**
2. **Driver Licensing**
3. **Education and Training** – consider Behavior Based Safety here
4. **Vehicle and Technology Design** – include automated driving, support multitasking
 - Nomadic device & Network operator responsibility
5. **Vehicle and Technology distraction evaluation and ratings**
6. **Road Design Countermeasures**
7. **Employers**
8. **Other** – cultural/regional differences e.g. South Africa

Slides from DDI 2009

Legislation and Enforcement

- Laws to prohibit unsafe device use
 - E.g. bans on mobile phones, buyers agreement

Driver Licensing

- Knowledge tests
- Driver distraction assessment tests: assess a driver's ability to manage distraction
- Practical driving tests: Assess driver awareness of distractions, their willingness to engage in distracting activities and their ability to safely compensate for the effects of distraction
- Graduated licensing schemes

Education and Training

- Competencies that could be addressed in driver distraction education and training programs (Regan, Lee and Young, 2008).
- Educate drivers about dangers of driving while distracted
- Licensing handbooks – Distraction content
- Publicity – public awareness
 - Information campaigns
 - Warning labels and consumer information
 - Laws

Vehicle and Technology Design

- Design-phase

- Guidelines and Standards for In-vehicle Information Systems and Nomadic Devices
 - Design & performance-based standards
 - E.g. ESoP, AAM, and JAMA guidelines and the ISO standards
 - Process-oriented standards(code of practice)
- Guidelines and Standards for Advanced Driver Assistance Systems
- Human Centered Design Processes
- Integration of In-vehicle HMI systems and warnings
- Safe Integration of Nomadic (Portable) Devices
- Incentive Schemes

Vehicle and Technology Design

- Real-time (while driving)

- Real-time Distraction Prevention (e.g. Workload Managers)
 - information scheduling
 - demand-based advisories
 - function lock-out
 - adaptation of information format
- Real-time Distraction Mitigation
 - Feedback about risky behaviors
 - Visual distraction alert
 - Cognitive distraction alert

Advanced Driver Assistance Systems (ADAS)

- Conventional ADAS systems:
 - FCW, LDW, BLIS, ESP, etc
- Driver-Vehicle-Environment-Adaptive Collision Warning Functions as Distraction Countermeasures
 - Distraction-adaptive Forward Collision Warning (FCW)
 - Distraction-adaptive Lane departure warnings (LDW)
 - Distraction-adaptive curve speed warnings
 - Distraction-adaptive adaptive cruise control

Vehicle and Technology distraction evaluation and ratings

- Consumer information, star ratings (e.g. Stars on Cars, NCAP)

Road Design

- Road-Design – e.g. Billboards, road signs
- Distraction-Tolerant Road System

Employers

- Behavior modification - influence driving behavior, purchase decisions
- Installation
- Exposure control
- Crash prevention
- Injury control
- Post-injury control

Others

- Institutional arrangements