RAPP

Road User Distraction

Workshop, June, 2015

TRL, TNO, RappTrans 2015

STUDY ON GOOD PRACTICES FOR REDUCING ROAD SAFETY RISKS CAUSED BY ROAD USER DISTRACTIONS

Agenda

- 10:00 Welcome and Introduction
  - Short introduction by DG MOVE (Szabolcs Schmidt)
  - Background and objectives of the current study
- 10:15 Presentation of the results from the focus group session (February 2015)
  - Tom van de Ven, Rapp Trans (NL)
- 10:30 Presentation of the intermediate results of work packages 3, 4 and 5.
  - TNO and Rapp Trans (NL)
- 11:00 Discussion session

Agenda (2)

- 12.15-13.00 Lunch Break
- 13.00 1st Deployment session
- 14:30 Coffee break
- 2nd Deployment session
- 16:15 Summary and conclusions for the day
- 16.30 End of Workshop

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Who is Who…

- Consortium: TRL, TNO, RappTrans NL

Introduction to the topic (1)

- By: Lewis Hamilton & Nico Rosberg

Background of the study

- If road users move through traffic without paying attention to the surrounding traffic situation, it is obvious that the risk of a crash increases.
- recent reports on a high number of fatal road accidents being attributed to distracted and inattentive road users

Objectives

- The expected outcomes of the study are:
  - an analysis of the current size and characteristic of the problems of distracted road users.
  - an assessment of actions and countermeasures to improve road safety by targeting road user attention and risks of distracted road users, including an updated overview of the regulatory situation in EU Member States.
  - a coherent and well-argued set of cost-beneficial, effective and efficient best practices to support EU Member States in their efforts to reduce the number of road fatalities by targeting the road traffic crashes caused by distracted road users.

Objectives of the workshop

- Presentation of the results of the Focus group (February 2015)
- Presentation of intermediate results of work packages 3 and 4:
  - Work package 3: Review, analysis and synthesis of actions and tools to reduce road user distraction and increase road user attention
  - Work package 4:Review, analysis and synthesis of technology to reduce road user distraction and increase road user attention
- Deployment session 1 and 2
  - Get expert views on cost-benefits of policy measures and tools
  - Interactive setting

Focus Group, February 2015
Task 1 and Task 2

Road User Distraction – Focus Group Task 1 Summary

Review, Analysis and Classification of Road User Distraction

Task 1 Aims

- To define and conceptualise 'distraction' (Task 1.1 – the focus of here)
- To understand the impact of 'distraction' related collisions involving serious injuries across the EU, where possible classifying different types of distraction and their potential effects on road casualties (Task 1.2 – not reported here)

Driver distraction and Inattention

Inconsistent definition

- Inconsistencies in the definition of 'distraction' and 'inattention' have led to difficulties in developing a consistent evidence base from which to draw conclusions
- Task 1.2 demonstrates this with inconsistent data collected across European countries

- Internationally, 'distraction' related crash data are inconsistently collected and reported
- Studies measuring distraction are often incomparable as it is not clear whether researchers are in fact measuring the same thing

- Historically there are numerous studies that define driver distraction. However, two particular pieces of work offer an understanding and taxonomies of the concept of inattention suitable for this project, within which distraction is defined as a subset

Taxonomies of driver distraction

Regan et al. (2011)

- Provides a comprehensive consideration of driver inattention and distraction.
- Building on previous taxonomies, and derived from consideration of crash data (rather than attentional theory), they describe a theoretical framework that aims to provide a structure from which research (e.g. crash data analysis) can be structured.

Engström et al. (2013)

- Developed from the United States and European Union Bilateral Intelligent transportation Systems Technical Task Force (US-EU Bilateral ITS TF).
- A detailed consideration of attentional and driver behaviour theory to develop a taxonomy that is based on 12 core principles.
- Driver inattention is conceived in terms of mismatches between current resource allocation and that demanded by activities critical for safe driving.

Comparison of definitions

	Regan et al. (2011)	Engström et al. (2013)
Inattention	"…insufficient, or no attention, to activities critical for safe driving."	"…inattention occurs when the driver's allocation of resources to activities does not match the demands of activities required for the control of safety margins."
Distraction	"…diversion of attention away from activities critical for safe driving toward a competing activity, which may result in insufficient or no attention to activities critical for safe driving."	"…refers to situations where the driver allocates resources to a non-safety critical activity while the resources allocated to activities critical for safe driving do not match the demands of these activities."
Activities necessary for safe driving	"Exactly what activities are "critical for safe driving" is an unresolved issue in traffic safety."	"…those activities required for the control of safety margins."

Summary and conclusions Task 1

- Both of these taxonomies appear useful for providing a definition and conceptualisation of driver distraction for the purposes of this project.
  - *The focus group agreed with the approach to combine the theoretical studies of Endström et al. and Regan et al. It is important to study the naturalistic driving studies in order to complete the theoretical framework.*

Road User Distraction – Focus Group **Task 2 Summary**

Objective

- Task T2 provides a description on the current and future technological developments related to road user distraction, and an analysis and summary of their impact.

Theoretical model

- A classification was carried out per:
  - Distraction type - Visual, Auditory, Biomechanical, Cognitive
  - Road user type - Drivers private vehicles, Professional driver, Motorcyclists, Pedestrians, Cyclists, Children

Conclusions per distraction type

- The overview suggests that most of the TDs have the potential to reduce some aspects of distraction
- It should be noted that this potential will only be capitalized upon if these technologies are properly implemented. If poorly implemented most technologies also have the potential to increase user distraction
- An increase in automation of the driving task will have an effect on issues with distraction

Conclusions per road user type

- The assessment suggests that all road user types can potentially benefit from the TDs. The potential benefits seem to be the highest for vehicles and much less for cyclists, pedestrians and children.

Summary and Conclusions Task 2

- Conclusions based on the focus group:
  - The study focuses on all road users; car drivers, pedestrians, cyclist etc.
  - The Consortium will add the **elderly** as a group in de study.
  - Developed automation devices (SAE3-5) are not part of this scope.
  - Specifically the necessity of a research agenda is addressed by the focus group

Intermediate Results Task 3, 4 and 5

Task 3: Rapp Trans NL
Tom van de Ven, Dennis Hijkoop, Frans Tillema

Task 3: Scope

1. Detailed description on the current status on (theoretical) actions and tools aiming to reduce distraction risks or to increase road user alertness

2. Detailed analysis of current status of studies and policies in the European Union through consultation of Member States

Methodology

- Development of a research model: to enable description, structuring and analysis of the collected information

- Stakeholder inventory: to collect information from stakeholders (Member States) through telephone interview and an online questionnaire

- Analysis and reporting of all collected data

Research model

The desk research has collected, described, analysed and structured information on:

1. National rules, practises and projects in 10 member states, with regard to the availability of tools and actions to reduce distraction risk.
2. Practises and experience from North America (USA, Canada).
3. Existing tools and actions applied in the member states regarding the reduction of distraction risks.
4. Existing studies, standards, initiatives and proposals (including for example. iMobility Working Group, The DaCoTA project) related to the future needs reduction of risks.

Research Model (2)

- In co-operation with the EC 10 key stakeholders are identified, and were invited for phone interviews.
  - Belgium
  - Germany
  - Spain
  - France
  - Ireland
  - Austria
  - Poland
  - Estonia
  - Portugal
  - The Netherlands
- Other stakeholders will be invited to complete the web-based questionnaire.

Results (1): 30 tools and actions identified

1. Raise awareness through public awareness campaigns
2. Raise awareness by mandating warnings in advertisements
3. Raise awareness in driver license programmes
4. Eductional campaigns in schools
5. Promote use of specific products
6. Mandate use of specific products
7. Promote specific use under certain conditions
8. Discourage specific use under certain conditions
9. Ban specific use under certain conditions
10. Promote proper installation of nomadic devices
11. Regulate installation requirements nomadic devices
12. Promote development of specific technology or products
13. Promote safe product design
14. Mandate safe product design
15. Discourage use of specific products
16. Ban use of specific products
17. Discourage sale of specific products
18. Ban sale of specific products
19. Promote deployment of roadside / central systems
20. Mandate deployment of roadside / central systems
21. Promote safe road infrastructure
22. Mandate safe road infrastructure
23. Discourage distraction sources off the road
24. Ban and regulate distraction sources off the road
25. Enforcement
26. Promote understanding of distraction
27. Legislation
28. Publicity campaigns
29. Financial support
30. Certification
31. Standardisation
32. Recommendations Best practices
33. Agreements

Assessment of Impact of Actions & Tools

- Estimate of impact of actions and tools
  - Per distraction type
  - Per road user group
- Validation through literature review

Impacts

Value	Name	Description impact rating scale
3	Strong reduction	Significantly reduces user distraction / raises user alertness
2	Moderate reduction	Reduces user distraction / raises user alertness
1	Minor reduction	Slightly reduces user distraction / raises user alertness
0	Neutral	Has no effect on user distraction or alertness
-1	Minor increase	Slightly increases user distraction / lowers user alertness
-2	Moderate increase	Increases user distraction / lowers user alertness
-3	Strong increase	Significantly increases user distraction / lowers user alertness

Preliminary Conclusions

- Overall, actions and tools are expected to have a positive impact on road user distraction
- A relative high impact is expected from these tools:
  - Mandating safe product design, e.g. smartphones blocking calling and texting options while moving.
  - Promotion, standardisation or mandating of safe mounting, power and vehicle connectivity solutions for nomadic devices.
  - Banning use or selling of specific devices, e.g. video players, game consoles, etc.
- A relative high impact is expected from actions 'legislation' and 'product certification'.
- Banning use of specific products is expected to have a relatively higher impact on pedestrians and cyclists, e.g. banning calling and texting while cycling
- Reducing distraction along roads is expected to have a relatively higher impact on vehicle drivers

Preliminary Interview Results

1. Q: Is distraction an important issue and can you give an estimate of the scale of the problem in …..?
   - Distraction is a major cause in the member states. Interviewees indicate 10-38% of all accidents are caused by distraction.
   - Exact causality not always clear or properly reported.
   - But it seems to be on the increase as accident cause.
   - Main causes for distraction, addressed in the interviews are: mobile telephones
   - Young seem more easily distracted, the elderly more easily overwhelmed by new technology

2. Q: How does ….. currently address road user distraction?
   - Campaigns on distraction are being rolled out in member states addressing use of phones and social media
     - Campaigns in schools targeting youngsters
     - Company campaigns targeting professional drivers
   - Member states are looking for new ways to detect violations and to penalize the miss-use of social media in traffic. E.g. the use of speed trap camera's to detect mobile phone use
   - Member states are looking for ways to improve accident statistic, e.g. by improving police registration forms

Preliminary Interview Results

3. Given the scale of the problem, is there a need for additional measures in ……?
   - Some member states emphasize the need for additional measures, in particular targeting professional drivers.
   - Some say no additional measures are required, focus on enforcement
   - Regulation requiring smartphone to block calling / texting while moving

4. Q: What is ….. vision concerning future technological developments and the impact on distraction?
   - Member states are now starting to think about new technologies and distraction
   - Ireland is now starting an expert group to explore the topic
   - New technology is likely to increase distraction until full automation
   - Some Member States are looking at the EC to come up with a framework

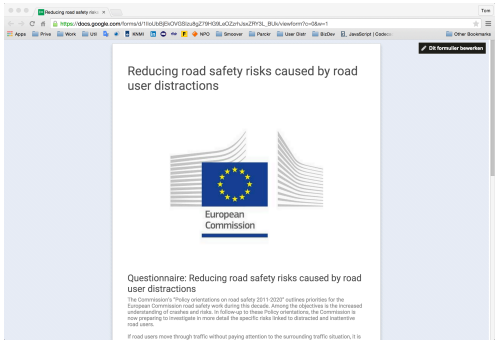
5. Q: What are the current barriers to the roll out of public campaigns and policy measures?
   - Definitions are a problem: what is distraction or in-attention
   - Statistics are a problem (also related to the definition)

Preliminary Interview Results

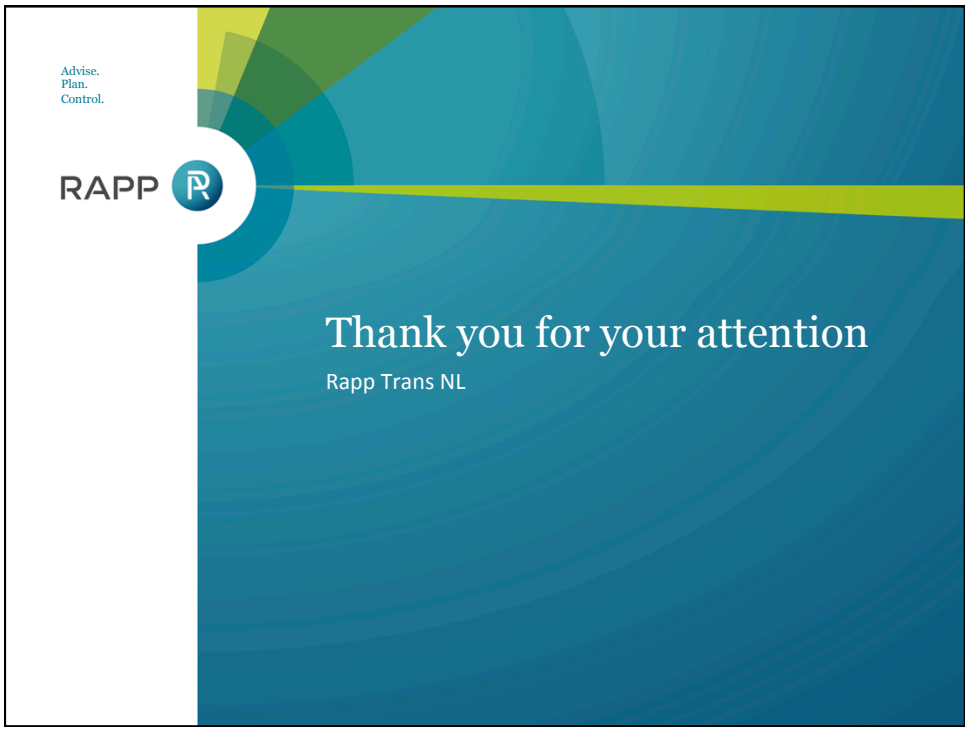
6. Co-operation model?
   - European approach to combat road user distraction considered useful; technological developments are worldwide phenomena, and equipment and vehicles are certified on EU-level.
   - However, because of the cultural differences in Europe awareness campaigns should always be carried out on the national level.
   - Coordination of research, certification on the EU-level is good.

Online Survey

- Live today - http://tinyurl.com/oqojy4s
- Publicly accessible
- Invitations to be sent shortly
- Associations – involve your members!



Questions and discussion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Thank you for your attention
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