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Consolidated Resolution on Road Traffic (R.E.1):

Amendment proposals on distracted driving

General approach to the distraction problem

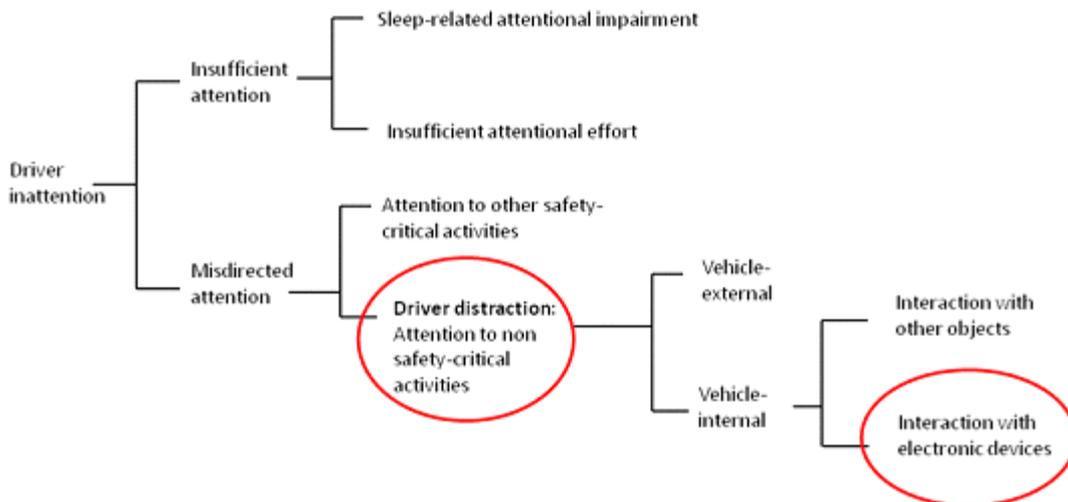
Submitted by Sweden

This document offers current state of knowledge regarding the nature of the distraction problem, its magnitude and possible countermeasures. It should be considered in conjunction with ECE/TRANS/WP.1/2017/2.

Inattention and distraction

1. Research is agreed on that inattention and distraction is a salient road safety problem. However, it is a very complex problem which is difficult to measure and to find effective measures against. One reason is that inattention and distraction yet have no common definition. Several proposed definitions relate to activities which are necessary for "safe driving". But defining which activities a driver must attend to in each driving situation to maintain safe driving is more or less impossible. It is only in hindsight possible to determine which activities that were critical in the actual situation and how the driver should have allocated his or her attention. In this context it is important to stress that inattention and distraction not per definition is detrimental to road safety. Depending on the traffic situation and the experience of the driver, the driver may adjust his or her behaviour to the situation and not always fully focus his or her attention to driving.
2. The absence of a common definition and the fact that data from accidents related to inattention and distraction by nature is hard to collect means that studies assessing the magnitude of the problem is difficult to carry out and those who have been carried out are hard to compare. It further means that measuring effects of different countermeasures directly on accidents is difficult.
3. Countermeasures have so far focused primarily on distraction due to the use of mobile phones and other communication devices. It is however important to note that such distraction is a subset of distraction in general which in turn is a subset of inattention (fig.1).

Figure 1. Inattention and distraction.



Source: Engström J, Monk CA, Hanowski RJ, Horrey WJ, Lee JD, McGehee DV, Regan M, Stevens A, Traube E, Tuukkanen M, Victor T, Yang CYD (2013). *A conceptual framework and taxonomy for understanding and categorizing driver inattention*. Brussels, Belgium: European Commission.

4. For that reason it is important to widen the scope of inattention and distraction and not only focus on distraction due to the use of mobile phones and other communication devices. Research shows that taking the eyes off the driving task during longer periods increases the accident risk substantially. But even if the driver keeps his or her eyes on the road he or she may be distracted due to other reasons, e.g. cognitive distraction.

5. Regarding countermeasures it is clear that there is not one or a few countermeasures that will solve the problem of inattention and distraction. In the research society there is a common view that there is a need for a system oriented approach where vehicle technology and infrastructure measures are combined with information, education and surveillance. It is about trying to both decrease distraction in itself and to decrease the consequences of distraction. Since there are so many sources of distraction it is however more effective to a greater extent focus on countermeasures against the effects or consequences of distraction and not only on different sources.

6. But up until now focus has been on countermeasures directed towards the driver in order to change his or her behaviour regarding the use of mobile phones, e.g. legislation, education and information campaigns. Due to the mentioned definition and data collecting problems it is difficult to evaluate the effects of such measures, especially on accident rates. Some scientific attempts have been made measuring effects on the observed use. However these studies don't show clear evidence of an impact on the observed use. Further such studies can only be seen as a proxy of the problem e.g. due to the possible adaptation to the traffic situation. There are anyway some studies showing that legislation in combination with information campaigns and intensified surveillance initially have had some effects on the observed use but it is hard to maintain long-term effects.

7. It is also clear that legislation mainly is directed towards the individual, putting the responsibility for tackling the distraction problem solely on the driver. Legislation is seldom directed towards other stakeholders with a possibility to influence the problem, e.g. manufacturers of nomadic technical devices, telecommunication providers and professional buyers and seller of transports.

8. Regarding vehicle technology the judgement is that different types of driver support systems, e.g. "Forward Collision Warning" and "Lane Departure Warning" will have a positive effect. Furthermore there are new studies that indicate positive effects of emergency braking systems and lane keep assist systems even if the isolated effect on inattention and distraction is not possible to evaluate. In time vehicle with higher levels of automation may have a very positive effect.

9. Regarding infrastructure it is primarily measures that handle the consequences of inattention and distraction, e.g. median barriers, forgiving side areas and rumble strips, which is highlighted.

10. It is also important to bear in mind that above mentioned vehicle technology and infrastructure measures are indifferent to different sources of distraction and also minimizes the consequences of other types of reduced driving ability, e.g. drink driving, fatigue and illness. For that reason they are more effective than measures directed towards specific types or sources of distraction since they address a wide range of accident factors relating to the driver's ability.
