

## VisGuard – Distraction Prevention System

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Out of all safety-critical events in traffic it has been estimated that 25-80% are caused by driver inattention. Almost 80 percent of all crashes and 65 percent of all near-crashes involved visual inattention in the largest field study on the topic so far. As a cause of visual inattention by secondary activities in these safety-critical events the use of a mobile device was by far the leading cause by at least 30%. Field studies have shown that drivers are trying to keep diverging glance durations within safe limits but that often their allocation of visual attention is inefficient and unsafe – drivers take a look at a wrong place at a wrong time and/or look at a wrong place for too long given the visual demands of the traffic situation.

VisGuard distraction prevention system warns the driver to focus on the driving task before visual distraction by a mobile device use is realized. When the driver engages in activities with the mobile device, VisGuard immediately starts to track driver's gaze and mentors the driver to turn eyes back on the road when needed.

The system gives the guidance by taking into account the visual demands based on the current driving situation and driver's skills. This will happen automatically as the system runs in the background in the mobile device monitoring the driving situation.

The VisGuard mobile application runs currently on Android devices. The visual demand algorithm behind it is based on data collected from hundreds of drivers in simulator and real traffic environments. Besides mobile devices, the system can be implemented in any in-vehicle device such as dashboard infotainment or navigation systems.

During the upcoming months we will be conducting field tests in different countries with several hundred drivers. Participants will be drivers who use their mobile phones frequently while driving.

NON-PAPER PRESENTATION: WORK-IN-PROGRESS