INCREATING DRIVER ATTENTION THROUGH GUIDED MEDIATION
AND ATTENTION TRAINING

Verena Blunder
Bertrandt Ingenieurbüro GmbH

Follow this and additional works at: https://www.tdcommons.org/dpubs_series

Recommended Citation
Blunder, Verena, "INCREATING DRIVER ATTENTION THROUGH GUIDED MEDIATION AND ATTENTION TRAINING", Technical Disclosure Commons, (April 23, 2020)
https://www.tdcommons.org/dpubs_series/3184

This work is licensed under a Creative Commons Attribution 4.0 License.
This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.
INCREASING DRIVER ATTENTION THROUGH GUIDED MEDIATION AND ATTENTION TRAINING

Technical task:
The technique described here enables situation-dependent meditation exercises for vehicle occupants.

Initial situation:
During monotonous driving tasks, such as in a traffic jam situation, waiting at a traffic light or when traffic is slow, the driver's attention often wanders. It can happen that the driver's thoughts drift far away from the current situation and he or she is no longer fully aware of his or her surroundings. However, it is precisely in these situations that accidents, such as rear-end collisions, occur more frequently. The cause is often the inattention of the driver. Up to now, there is no program available to specifically increase the driver's attention.

Solution:
The targeted use of attention training or attention meditation can support the driver and sharpen his focus on the current situation. If the driver seems distracted or if the driver is in one of the situations described above or in a comparable situation, the vehicle suggests a guided attention meditation. This can be started via the MMI, for example, and is then played back via the vehicle's built-in speakers. The duration of the exercises is always adapted to the situation and ends as soon as the situation resolves or changes. With specially designed programs, the meditation exercise invites the driver to consciously engage with his environment. The program voice guides him through his environment (with focus on the immediate area around the vehicle). Possible scenarios include e.g.:

- drawing attention to the current weather situation combined with an indication of how calming rain on the asphalt can be
- the conscious listening to noises, which are in and around the vehicle
- to point out the safety of the vehicle and to let it affect you and to feel into it
- guided emotional investigations of the driver's current mental state

This principle is used in many meditation exercises or mediation programs. The aim is to sharpen the driver's self-perception (am I tired, stressed, relaxed, etc. at the moment) and to increase attention to the environment. The driver learns to better assess his current physical and mental condition and, if necessary, to improve it by taking a break. During a break, e.g. at a rest area or during a piloted drive, the system can offer the driver further meditation exercises, which can be longer and more intensive because the driver does not have to deal with the driving task. In this situation the driver can be shown a selection of different exercises. In addition to the driver, these or similar meditation exercises can also be offered to the passengers and can be specially adapted to their situation.

Advantages:
- Increasing the short-term and long-term attention of the driver with an associated increase in safety.

Possible application:
The vehicle detects the current status of the driver via the installed sensors (e.g. driver observation camera) and detects, e.g. with Machine Learning, as soon as the driver appears distracted. At the same time, the current driving situation as well as the environment is evaluated e.g. with the help of the vehicle cameras, navigation data, GPS data, calendar and traffic light information. If the driver is in a suitable situation (in a traffic jam, at a traffic light, standing at a rest area, etc.), the MMI or voice system suggests a meditation exercise suitable for the situation. The program evaluates the online and sensor information in order to start a meditation with the appropriate, predicted duration after the driver's confirmation. By means of object recognition in the cameras and control units, the built-in microphones and/or the map data, the program can instruct the driver to focus his attention on certain objects (flowers in the green strip in front of the vehicle, noises around the vehicle, the hectic hustle and bustle of passers-by, etc.). The program then explains the benefits of mindfulness in daily life. The aim is to encourage the driver to live in the moment instead of letting his thoughts wander and to integrate this behavior into his daily life. While the vehicle is being driven, the meditation exercises are designed so that the driver is always mindful of his environment. By comparing the driver's diary on his mobile phone, it is possible to see what kind of journey he is currently making (going to a business meeting, to the office, from work to home, to the airport, etc.). This information is then used to predetermine the appropriate mediation exercise. For example, a nervousness-reducing meditation exercise can be specifically suggested.