MeBeSafe – Consortium presents final results on nudging and coaching measures in traffic

The EU-financed Horizon 2020 project MeBeSafe (Measures for Behaving Safely in Traffic) has presented its final results in their Final Event [digital]. The project partners presented well-evaluated nudges and coaching measures to reduce the number and severity of road accidents. Several nudging and coaching interventions nudge car drivers and cyclists via HMI and infrastructure measures as well as coach truck drivers towards safer driving behaviour.

Navigating in traffic can be defined as a relatively well-trained process. Over time, when we perform our actions repeatedly within the same context, our behaviour becomes more automatic. This means that drivers might run into risky situations without even knowing it. Driving becomes a habit, guided by environmental cues. This comes along with a reduced level of attention – which could lead to us not spotting a truly dangerous situation.

MeBeSafe aims to change habitual traffic behaviour, such as reduced attention or habitual speeding. Existing measures to make traffic safer often rely on our conscious decision-making. They deliberately ask us to change our behaviour. But unintended violations are not made consciously. They are made on a sub-conscious level. Therefore, in a high number of cases, we also need interventions that target this level.

One way to do this is to make the safest choice the easiest choice, while still preserving the road users' freedom of action. This is called "nudging", a concept from behavioural economics. MeBeSafe has adapted nudging to traffic, both implemented within vehicles and in the infrastructure. Further, MeBeSafe has adapted coaching, another option to steer people towards safer traffic behaviour.

When navigating in traffic, hazards may occur from every possible direction. We may not be able to see all of this, partly because of the sheer number of possible interactions but also because some of it could be blocked by obstructing objects.

MeBeSafe has found a way to direct driver attention to these potential hazards by projecting a constant green line onto the windshield that appears to follow the road. This is followed by a dent in the line indicating the direction a cyclist is possibly approaching from. The dent intends to direct the driver's attention towards the potentially hazardous situation. The field test revealed just that: drivers approaching the intersection increased their attention and decreased their speed.

In certain situations, drivers may not be aware that they drive at an inappropriate speed or that possible risks may still be out of their sight. Therefore, lights were placed at ground level on both sides of a road, which could either be statically illuminated or be lit up so they appear to move towards the driver. This creates the illusion of going faster than the driver actually is. Drivers who are driving too fast are detected and only these drivers are nudged by the system. Results revealed a decrease in speed by the nudge as well as a high acceptance from drivers.

Cyclists might also adopt inappropriate speed at certain locations. MeBeSafe has found that flat stripes running across the road can help in slowing them down. These stripes get progressively closer together. And as they get closer and closer together on your approach, your perception is that you are going faster and faster, causing you to slow down.

Car drivers can drive too close to other cars. Using safety systems such as Adaptive Cruise Control (ACC) could prevent too close following. MeBeSafe developed two designs aimed to nudge drivers into using ACC to prevent close following. The nudges consist of visual cues that in different ways reflect each driver's use of ACC. And indeed, both the ambient display nudge and the competitive leaderboard nudge increased drivers' ACC use.

A way to make an impact over time is to use coaching. Partners in MeBeSafe have developed the DriveMate app, which measures the driving behaviour of truck drivers by in-phone sensors and delivers feedback and coaching material. At the same time it is protecting their data: the only one to see this data is the trucker whom it concerns.

After analysing the driving behaviour, the app suggests that the trucker should meet up with a fellow truck driver and discuss certain topics, as truckers are the ultimate experts for their own job.

"We are proud to present the results of 3.5 years of hard work and to show that our initial ideas did not only work in theory and the lab, but in the field tests across Europe as well", Stefan Ladwig, coordinator of MeBeSafe points out. *"It is an honour for the coordinating team to have been part of this great research and innovation action activity already since the early set up phase together with the core team – composed of Volvo Car Corporation, TNO, SAFER/ Chalmers University, Shell and the Institute for Automotive Engineering (ika) of RWTH Aachen University. The success of MeBeSafe is inseparably bound to the professional consortium which shows a best fit regarding both team-spirit and excellence."*

The final event of MeBeSafe took place digitally and will continue for the upcoming weeks. Presentations and further information on the developed measures will continuously be shared on the project's website and social media.

MeBeSafe is a € 7.1 million H2020 RIA project, granted by the European Commission and coordinated by the Institute for Automotive Engineering (ika) – RWTH Aachen University. The project started on the 1st of May 2017 and will run until the 31st of October 2020.

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