

SAFE SMARTPHONE USAGE IN THE CAR

SENSIBLE SOLUTIONS CREATE POSSIBILITIES



TNO innovation
for life

It's hard to imagine life without smartphones. In many ways, they make our lives easier, more convenient and more productive. But when it comes to smartphone usage while driving, it is clear that sensible solutions are needed to make roads safer for us all.

One significant factor in many traffic accidents is driver distraction. And while those distractions come in many shapes and sizes, the smartphone can be a major source. In fact, studies show that drivers who type text messages are 23 times more likely to have an accident. But banning smartphone usage in the car is not the solution. People will not comply with an all-out ban on smartphones in traffic. In addition, smartphones can also serve many helpful functions on the road. TNO strives to find solutions that maximise the helpful features and minimise the dangerous ones.

THE COMPLETE PICTURE

As an independent research organisation, TNO not only explores the technological and engineering solutions that can improve driver safety, but also the psychological and social factors that play a role in human behaviour. From that

perspective, it is clear that banning smartphone usage in the car is an unrealistic objective. Instead, TNO is working to develop solutions that prioritise helpful smartphone functions – such as GPS, traffic alerts, weather updates and voice-activated messaging. Additionally, TNO supports solutions that restrict functionalities that can cause distraction, such as text messaging, social media usage and gaming.

PROMISE FOR THE FUTURE

Together with 40 other organisations, from the Dutch Ministry of Infrastructure and Environment to Samsung Mobile, TNO has signed the Covenant for Safe Usage of Smart Functionality in Traffic. The collective is exploring possible solutions for improving the balance between applications that support drivers, and those that distract them. Together, the collective aims to reduce



the occurrence of traffic accidents due to smartphone usage.

POSSIBLE SOLUTIONS

TNO is exploring solutions that integrate information that is important to drivers into user-friendly apps. Among the technology being explored are applications that send automatic replies to text messages that alert senders that the recipient is driving. Applications that allow voice interfaces can eliminate the need for typing while driving. We also focus on solutions that present important information in accessible ways. For example, a fully integrated car dashboard that operates when the smartphone is installed. The dashboard provides all of the useful information a driver needs – such as traffic alerts, road conditions and speed limit information – and restricts other functionality that may distract the driver. TNO is working on a Priority Manager that will allow drivers to continue to get all the benefits that a smartphone can provide, while limiting their ability to engage in distracting activities. We see these, and many other new developments, as opportunities to improve driver safety.

TNO has also developed sensors that can detect driver distraction when it happens. If a driver deviates from his or her lane or reacts too slowly to changing traffic conditions, the sensors can detect this and provide additional advice and support.

A LOOK TO THE FUTURE

The advent of self-driving cars may change the issues of smartphone distraction. Cars that offer automated driving may offer an enticing new perspective on – and solutions for –

traffic safety. Self-driving cars may allow the driver to engage in other activities. However, during specific traffic conditions, self-driving cars may also need to alert drivers in a timely way and allow the human driver to regain control of the vehicle. And that means ensuring that they put down their smartphones before they take the wheel.

In the near future, four elements need to be logged that will determine when smartphone usage is safe or unsafe

- 1) the capabilities of the vehicle
- 2) the driver
- 3) the traffic conditions and
- 4) the types of smartphone functions.

If we know the status of all four, we can act accordingly.

THE SMART SOLUTION

We believe that the combination of the solutions mentioned above will provide the answer. The key is to provide support that drivers want and need, in a way they will accept and like. If the solutions reward positive behaviour, the long-term effects will be far more positive than harsh restrictions or punishments, also for functions that indeed help driving.

PARTNERING FOR BETTER RESULTS

TNO has been leading the discussion on safer traffic behaviour for many years. But it is only by working together with a variety of stakeholders that true solutions can emerge. Solutions that take driver needs, preferences and privacy into account. TNO is ready to bring its vast amount of knowledge and experience to the table and help develop feasible solutions that drivers will embrace and will make our roads safer for everyone.

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Want more information about TNO's efforts to improve driver safety? Contact us today.

Marieke Martens
Integrated Vehicle Safety
T +31 (0)88 866 58 32
E marieke.martens@tno.nl