Hochschule für Technik und Wirtschaft Berlin
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INNOVATIVE TECHNOLOGIES FOR THE FUTURE

Electronics and Electrotechnology

16693 Concept for the control of mobile communication when using smartphones in road traffic

Introduction / Abstract

The invention means that the mobile phone can no longer be used while actively participating in road traffic. For this purpose, a security function is implemented as an app or directly in the mobile phone's operating system.

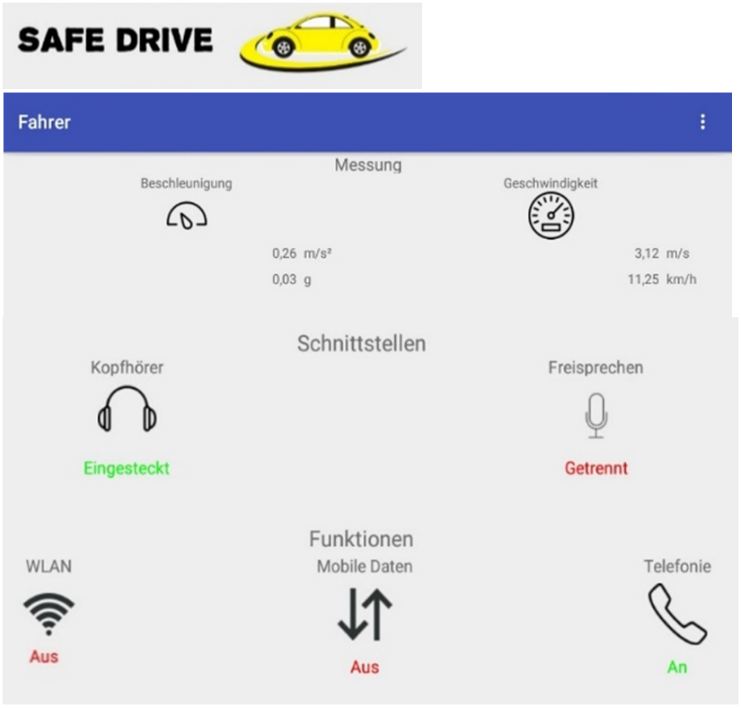

Fig. 1: Interruption of mobile phone functions when a certain speed is exceeded

Background

Current mobile phones have standardized physical sensors and interfaces. These include acceleration sensors, GPS sensors and Bluetooth/NFC.

There are different approaches to the use of mobile phones in road traffic. Google Android offers the "car mode", which increases the user comfort of the mobile phone. Apple iOS has the "CarPlay" system. Here the functionality of the mobile phone is transferred to the display of the car and can be integrated in vehicles from

Technology Readiness Level

TRL 1

Patent situation

Country: DE
Code: 10 2018 111 408 A1
Status: pending

Angebot

License for commercial use; Cooperation possible; Sale

Keywords

acceleration sensor, Bluetooth, GPS, HTW Berlin, Inventor: Prof. Dr.-Ing. Mohammad Abuosba, network, road traffic, safety and security, sensor, Smartphone, vehicle

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2016. Cellcontrol also sells the product "Cellcontrol DriveID".

Motivation

Previous measures do not restrict the scope of functions in accordance with legal requirements or the restrictions are made by additional boxes.

Innovation / Solution

The invention is based exclusively on the use of the existing and largely standardized functionalities of mobile phone sensors and independent of a vehicle. These are the acceleration sensor, gyroscopes and the GPS signal. The invention even enables a particularly energy-saving method of blocking mobile phone functions, since the GPS is only used for calibration and further speed detection takes place via the acceleration sensors.
The inventive concept is as follows:
1. Determination of the speed by means of an acceleration sensor,
2. Calibration of the speed by means of GPS,
3. Switching off the network connectivity depending on the determined speed,
4. Enabling of functionalities depending on the connected periphery (e.g. hands-free kit),
5. Localisation of the driver within the vehicle,
6. Disconnection of network connectivity depending on detected speed and driver position in the vehicle.

Benefits

- Applicability in a wide environment of road users
- Can be used by cyclist, skater or jogger
- Functionality based on existing core functions of the mobile phone without additional peripherals
- Configuration of country-specific legal requirements (here initially only Germany)
- No connection to the chosen means of transport

Fields of application

Smartphone industry, automotive industry