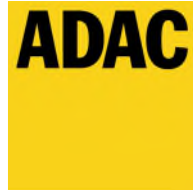


ADAC position on marker lights for automated driving (marker lamps)



Background

One challenge in road traffic is the mixed operation of vehicles driven by drivers and those that are automated. Although it can be assumed that automated vehicles drive very defensively in road traffic, all occupants are passengers and their behaviour has no direct influence on the vehicle's response. This is important when non-verbal communication between road users is common to clarify a traffic or right-of-way situation, such as at busy right-turn intersections, road narrowings, intersections with pedestrians and cyclists, but also in special situations such as accidents, breakdowns or when emergency services are present. In such situations, it is common for drivers to establish eye contact and use gestures to clarify the situation.

It can be assumed that motor vehicles with increasingly effective driver assistance systems will initially drive automatically on certain routes and in certain situations. Therefore, it will not be possible to tell from the type and appearance of a vehicle whether it is in automated or autonomous driving mode or whether the occupant in the driver's seat is currently responsible for driving. Automated or autonomous motor vehicles do not respond to human gestures, or do so inadequately, and cannot respond or confirm them in a similar manner. Non-verbal communication does not work in this context. In addition, gestures made by a passenger in the supposed driver's seat have no influence on the vehicle's response, which could lead to misunderstandings. In addition, increasingly effective assistance systems are blurring the lines between assisted and automated driving. Consumers misjudge the driving mode and their responsibilities.

At UNECE level, the use of cyan-coloured marker lights for vehicles in automated or autonomous driving mode is therefore currently being discussed.

Objective

Motor vehicles with an automated or autonomous driving mode will be equipped with specific indicator lights that differ in colour, position and, ideally, shape from the signal and indicator lights currently used in road traffic. When driving in automated or autonomous mode, the marker lights will be activated accordingly so that human drivers can adjust to the situation, adapt their behaviour accordingly and not expect a response or reaction to their non-verbal communication attempts. The visual distinction made by a uniform marker lamp creates clarity in communication with road users and, through standardisation, sets limits on individual marketing measures by manufacturers.

ADAC Position

Motor vehicles with automated and autonomous driving functions will be used in mixed traffic with driver-controlled vehicles. Although it can be assumed that these vehicles will behave defensively in road traffic, non-verbal communication with the occupants of a vehicle in automated and autonomous driving mode is not effective in special situations.

From the ADAC's point of view, it would therefore be helpful for other road users to be able to identify vehicles that are in automated or autonomous driving mode so that they can adapt to the situation and be aware of other types of communication that may be developed in the future.

The following points should be taken into account:

- Vehicles travelling in automated mode in mixed traffic should be marked with one or more marker lights visible from all sides.
- Marker lights should have a uniform colour and shape that can be clearly distinguished from other signal and identification lights commonly used in road traffic.

- Marker lights should be positioned at a sufficient distance from signal lights on the vehicle so that they can be clearly distinguished and the visibility of signal lights is not impaired.
- Marker lights should be designed in such a way that they do not glare other road users.

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