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INTELLIGENT FLASH ASSIST

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INTELLIGENT FLASH ASSIST

Technical task:

The approach of the idea is the "uncontrolled / careless lane change". With an intelligent control device, the idea pursues an "intelligent, head-controlled and situation-dependent flashing" to increase safety in road traffic.

Initial situation:

The situation is known from everyday life that a vehicle on the parallel lane in front of your vehicle suddenly has to change lanes without indicating the lane change with the turn signal in order to avoid an accident.

Also the situation often arises that you have to avoid a sudden obstacle due to the traffic.

It is not only in these two situations that the driver is surprised and forgets to indicate the change of direction with the indicator.

Solution:

The signal path and the processing of the associated image data are performed in the order shown below:

1. a first interior camera monitors the direction of view/position of the eyes/and the head position of the driver
2. in parallel, the same details, i.e. the focus of the driver, are monitored by one, two and three cameras installed in the outside mirrors
3. the synchronous image processing of the at least two cameras detects the predictive/intentional behaviour of the driver who may intend to change lanes by aligning them
4. by the direct, simultaneous, i.e. parallel, detection and evaluation of the steering signals of the electrical steering / cf. steering systems and signals from radar sensors, the intended lane change is also sensed / monitored by the driver
5. Finally, if the front camera, as the fourth image recording component, detects that the vehicle's longitudinal axis will cross the road marking in a short chronological sequence, then
6. if an automatic flashing occurs - i.e. the change of direction is detected intelligently and intuitively by the behaviour of the driver and the vehicle and a change of direction signal is triggered.

In special versions, point 5 can also be switched as follows =>

- 5.1 Last but not least, does the front camera detect that, for example, on the right-hand edge of the roadway there is a pedestrian group and/or a cyclist, etc., then => 6.
- 5.2 Last but not least, if the front camera detects that there is an obstacle in your lane, then => 6.

If with the same BUS time stamp, i.e. at least three image signal evaluations from cameras and signals from radar sensors and one steering signal at the same time, the driver wants to change lanes, or has to align himself in the current lane because of a two-wheel driver/pedestrian, etc. in the lane crosswise guidance so as not to collide, then the indicator for the assistance system "Intelligent flash assist" is automatically activated.

Advantages:

Increased assistance when changing lanes quickly, e.g. when

- The traffic situation changes quickly, for example a truck suddenly pulls into its own lane which has to be left quickly.
- A cyclist, e.g. a cyclist must be avoided in order not to collide with him in his own lane.
- A suddenly occurring obstacle in the roadway, e.g. lost object on the motorway, etc. must be quickly avoided
- Warning of the following traffic regarding cyclists/pedestrian groups/obstacles in the lane

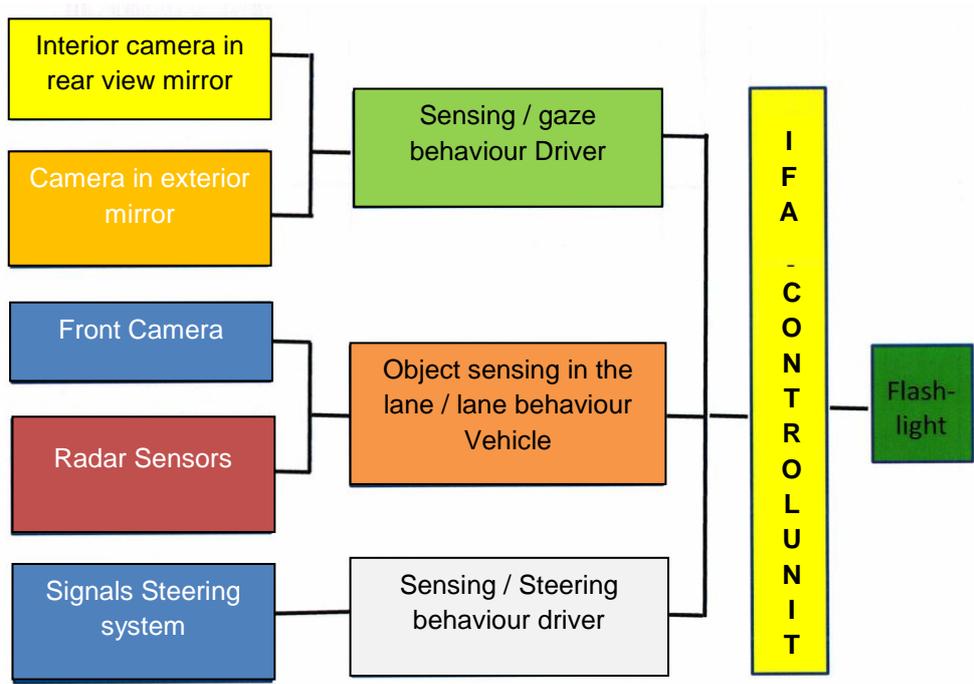


Figure 1