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Device for achieving a redundancy in

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DEVICE FOR ACHIEVING A REDUNDANCY IN THE WHEEL SPEED SENSOR FAILURE ESP. FOR PILOTED DRIVING IN TRAFFIC (FAIL OPERATIONAL)

Technical task:
The object of the technical innovation is to compensate for a possible wheel speed sensor failure in order to ensure the function of the assistance systems, so that the safety continues to exist, especially in piloted driving.

Initial situation:
Piloted or (partially) autonomous driving requires that some safety-relevant vehicle systems such as today's fail-safe must be executed fail-operational. This also applies to the braking system esp. For the brake pressure build-up and the brake modulation (ESC functions). Depending on the system characteristics, the brake system must detect both braking and steering tasks in the event of a fault and automatically bring the vehicle safely to a standstill and hold it.
In driver assistance systems such as ABS, ASR, ESP or ACC, sensors are used by the control units to detect the wheel speed. The wheel speed information is also provided via data lines from the ABS control unit to other systems (engine, transmission, navigation and suspension control systems). Thanks to this versatile use, speed sensors make a direct contribution to driving dynamics, driving safety, ride comfort, lower fuel consumption and low emissions.

Solution:
Duplication of the Asics responsible for the evaluation on / in the sensor or duplication of the Asics responsible for the evaluation on / in the brake control system.

Advantages:
- An existing redundant wheel speed signal for stabilization functions allows i.a. autom. Drive.
- High security.

Possible application:
- All vehicles intended for automated driving.