



IAA 2017: HELLA presents new functions of SHAKE sensor

- **SHAKE sensors detect parking damages and protect pedestrians**
- **Technology now also allows touch interaction with the vehicle**

Lippstadt, September 12, 2017. Autonomous driving, digitization and connectivity as well as individualization are driving trends in the automotive industry. The lighting and electronics expert HELLA is actively shaping these trends. The company is developing the so-called SHAKE (Structural Health and Knock Emission) technology in the field of assisted driving, amongst other things. The company has added further safety and comfort functions to the sensor on the occasion of this year's International Motor Show Germany (IAA). The sensor does not only detect parking damages (Intelligent Damage Detection) and protect pedestrians (Adaptive Impact Detection) but now also initiates personalized scenarios based on touch (Smart Touch Detection). HELLA started the series development for a premium original equipment manufacturer in late 2016. The start of series production of the sensor is planned for 2018.

The SHAKE technology complements the existing assistance and safety systems in the vehicle. It allows the vehicle to not only "see" its environment (camera systems, radar systems) but to also "feel" it and therefore also covers the invisible area between all driver assistance systems in the immediate vicinity of the vehicle. For this purpose, the sensor detects structure-borne sounds and vibrations generated by contact or knocks on the vehicle body by means of a piezoelectric foil. The sensor analyzes these sounds or vibrations and initiates corresponding actions. Currently, the SHAKE sensor enables up to three functions in one sensor system. Manufacturers can choose one or even all functions due to the system's modular principle.

HELLA has developed the function Smart Touch Detection to offer drivers individual convenience and safety functions. For example, vehicle users initiate autonomous parking with a touch of their hand on the vehicle body. Visitors can try the function themselves by a simulation on a demo vehicle at IAA: When they tap the body once –

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the vehicle shows by a light function that it will stop. When they tap twice – the LED signal indicates that the car will start driving again.

Traffic safety continues to be an important issue and this is the case for automated driving as well. For the function Adaptive Impact Detection, two sensors are installed in the front or rear end of the vehicle. The front sensors detect the structure-borne sounds emitted for the slightest touch by cars or pedestrians on the bumpers of the vehicle at up to 20 km/h. The sensors immediately trigger a signal to stop the vehicle immediately and to avoid more extensive damage. Likewise, the rear sensors detect contact with an obstruction during assisted parking and initiate an emergency stop before serious damage to the vehicle can occur.

It is aggravating when "parking damages" like scratches, dents and paint damage happen to a vehicle that just was in mint condition. For new mobility solutions such as car sharing, it is hard to tell where and when the damages occurred and who is responsible for them since the owner changes frequently. The function Intelligent Damage Detection tackles this challenge. The SHAKE sensors in the entire vehicle body immediately detect the severity of the damage and the time and place of the damage. Thanks to the increasing connectivity, it is also possible for vehicle owners and mobility companies to receive a damage report including video recordings by mobile devices.

At IAA Cars, interested visitors can learn more about the SHAKE functions at the HELLA booth from September 12th to 17th (Hall 3.1, booth B31).

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