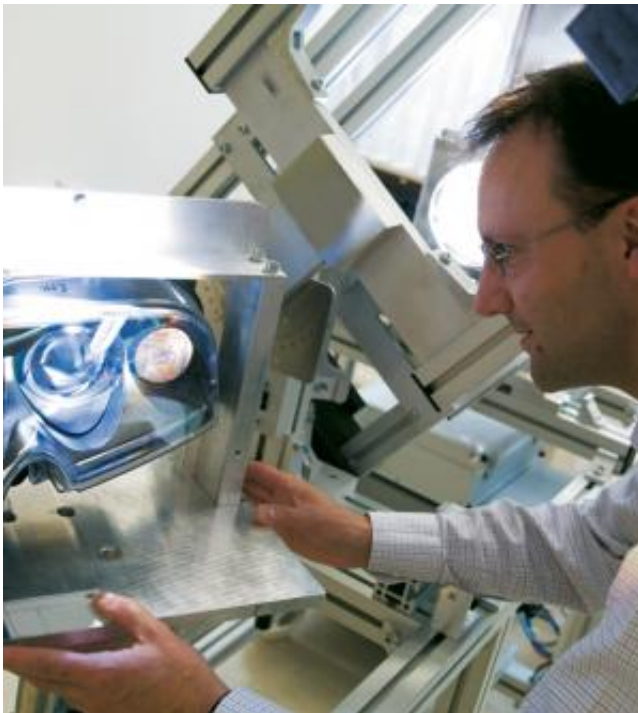# How did that dent happen? Smart car panels answer back

February 9 2015, by Nancy Owano

We've heard much about technology's presence in the car market, adding an increasingly electronic infrastructure rich with sensors. German supplier Hella has turned to the outer shell of the car; they have come up with smart body panels that can tell when someone damages your car. Vehicles are to get this sense of touch, said reports, with Hella's Intelligent Damage Detection System. It can detect whenever a car's

body panel sustains damages, from scratches and dents to worse events.

"Germany's Hella is developing a smart body panel that uses a grid of foil-like pressure-sensitive electronic sensors (plus special algorithms) to detect when someone dents or scratches your vehicle," wrote Jon Fingas in *Engadget*. "It can even tie into onboard cameras and GPS to both record where the car was and get some video evidence," he said. If the car owner uses such a system, the benefit lies in having evidence, for example, if where you parked somewhere and came back to find damage caused by someone else's parking errors, such as a scrape on the door caused by another car in a mall parking lot. Working with forward- and rear-facing cameras, the system could help determine the cause of damages in parking mishaps. On the other hand, the system could benefit agencies you rent the car from, able to identify you if damages were caused while the car was in your possession. With a link to the car's GPS, Hella's system could pinpoint the time and place when the damage occurred. The information could be sent to a fleet administrator.

Gabriel Brindusescu in *autoevolution* joined in noting the benefits, saying "knowing exactly when your car gets dinged in the parking lot can spare you and fleet operators of further investigations and resulting headaches. Imagine the car sensing a scratch and instantly notifying its owner so he/she can immediately run to the parking lot and see what's happening before it's too late." Tom Murphy, in *WardsAuto*, went into detail about the technology at play. "You could have an app so the car calls you the moment it happens," Marc Rosenmayr, CEO of the company's electronics business for North and South America, said, in Murphy's report. The system works equally well with all materials – steel, aluminum, thermoplastic, fiberglass and carbon fiber. The system involves a piezo-based electronic sensor. The foil-based sensor "can be glued behind a body panel or added to an existing sensor used for Park Distance Control, the technology that allows a vehicle to parallel-park itself by sensing an opening along a curb and then taking control of the

steering wheel to back in."

Murphy said the algorithm was powerful enough to detect structure-borne noise and determine the strength of damage, such as door ding or tree falling on a car. You can identify where the scratch is and its intensity. Marc Rosenmayr, CEO of the company's electronics business for North and South America, said in Murphy's report that, depending on how much information a customer wants about vehicle damage, the system was able to function "with as few as four body sensors and as many as 12."

Companies are interested in the technology, including one that wants to use it as an extension of an anti-theft system, said Murphy, and expectations are for the technology in production vehicles by 2018.

More information: www.hella.com/

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