



HARMAN ‘Reverse Pedestrian Detection’ Safety Technology Targets Reduction in Injuries and Death from Back-Over Incidents

Blind Spot Detection safety system eliminates blind spots to reduce accidents that injure 15,000 people and cause 200 deaths a year in the U.S.

STAMFORD, CT – [HARMAN International Industries](#), Incorporated (NYSE: HAR), the premier connected technologies company for automotive, consumer and enterprise markets today announced the development of a new safety system to help eliminate the blind spots that kill or injure 15,000 pedestrians a year in the U.S.. Reverse Pedestrian Detection combines data from a range of existing HARMAN technologies fitted to the car, including a rear camera and sensor, to detect pedestrians behind the vehicle. In one of its most critical uses, it can successfully detect smaller children, aged between 12 and 23 months, who are most vulnerable to being hit.

“Despite the introduction of a range of safety technologies found in today’s cars and even with the most attentive drivers, ‘back over’ accidents cause too many deaths and injuries,” said Danny Atsmon, senior director of machine learning at HARMAN, who created the technology after realising his own two year old child could not be detected by existing sensor solutions. “Tragically, over 70 percent of incidents involving children are caused by a parent or relative behind the wheel.”

The rising popularity of bigger vehicles such as SUVs has exacerbated the blind spot issue for consumers. Coupled with drivers placing too much reliance on the effectiveness of sensors and cameras, HARMAN believes only by combining real-time sensory data with driver attention can the situation improve. The Reverse Pedestrian Detection technology uses advanced computer vision methods and a fish eye camera to detect pedestrians behind the vehicle and fuses it with data from the ultrasonic sensors for close pedestrian verification. To improve the accuracy, the application also uses the steering wheel angle and speed for calculating probable collision trajectories.

“Reversing cameras certainly increase the driver’s field of vision, but there is still an area on either side of the car that is not covered, and traditional reversing sensors are optimised to detect larger obstacles,” adds Atsmon. “No system is infallible, and the driver must still take caution, using mirrors or glancing over their shoulder. With HARMAN’s Pedestrian Detection system, drivers can reverse more safely with confidence.”

HARMAN’s Reverse Pedestrian Detection technology is a cost-effective safety enhancement that is based on software implementation without the requirement of additional hardware: it’s available to automotive manufacturers now. “As we work toward bringing this software to automakers, we have adopted an approach that will enable the software to be housed in existing vehicle infotainment systems to minimise the cost and designed to fit into as many auto makers’ vehicles as possible,” said Atsmon.

Download a video illustrating the technology [here](#).

View the video on YouTube [here](#).

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About HARMAN

HARMAN (harman.com) designs and engineers connected products and solutions for automakers, consumers and enterprises worldwide, including connected car systems, audio and visual products, enterprise automation solutions and connected services. With leading brands including AKG®, Harman Kardon®, Infinity®, JBL®, Lexicon®, Mark Levinson® and Revel®, HARMAN is admired by audiophiles, musicians and the entertainment venues where they perform around the world. More than 25 million automobiles on the road today are equipped with HARMAN audio and connected car systems. The Company’s software services power billions of mobile devices and systems that are connected, integrated and secure across all platforms, from work and home to car and mobile. HARMAN has a workforce of approximately 28,000 people across the Americas, Europe, and Asia and reported sales of \$6.5 billion during the 12 months ended December 31, 2015. The Company’s shares are traded on the New York Stock Exchange under the symbol NYSE:HAR.