

PRESS RELEASE - DRAFT

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HARMAN Demonstrates New Detection Capabilities for Keeping Autonomous Vehicles Protected Against Sensor Spoofing

The beta product being demonstrated can successfully detect and report on spoofed speeding signs that can affect the vehicle's behavior

CES 2018 – Las Vegas, NV – January 8, 2018 – HARMAN International, a wholly-owned subsidiary of Samsung Electronics Co., Ltd. focused on connected technologies for automotive, consumer and enterprise markets, is demonstrating at the Consumer Electronics Show in Las Vegas new detection capabilities, part of the HARMAN SHIELD Solution, that protect autonomous and semi-autonomous vehicles against cyber-attacks aimed at the vehicle's sensors.

The technology demonstration shows how an adversary image with a speed limit sign was able to fool the on-board traffic sign recognition system of a production vehicle, to present false information to the driver and impact other vehicle systems, such as adaptive cruise control. That spoofed traffic sign was successfully detected and reported to HARMAN Cybersecurity Analysis Center – a full dashboard and analytics solution which provides 24/7 visibility of broad vehicular security-related events from HARMAN SHIELD Agents.

Adversary images are images that have been intentionally manipulated in such a way that a human recognizes them correctly but a neural network or computer vision-based system will misclassify them. The use of such images opens a way to new attacks on autonomous cars and ADAS systems, requiring non-conventional cybersecurity techniques to detect and possibly mitigate. These attacks do not require any physical access to the car or tampering with the communication system and the consequences of such attacks can be grave, including major traffic disruptions.

“In 2017, dozens of cities around the world have deployed autonomous vehicle pilots, from San Francisco to Las Vegas and London, all while the attack surface of autonomous vehicles continues to grow and change,” said Yuval Weisglass, vice president, automotive cyber security at HARMAN Connected Services. “In order to protect autonomous vehicles against these types of cyber-attacks, now is the time to adopt a security-by-design approach, developing unconventional detection and protection capabilities. As part of our ongoing investment in R&D, we constantly revalidate our threat assessments in order to identify new fields that might impact the attack surface of connected and autonomous vehicles.”

More than 30 cities around the world [are already piloting](#) autonomous vehicles projects, with nearly 100,000 Fully Autonomous vehicles expected to [enter the market in 2020](#) – vehicles which can be hacked by attacking their sensors or manipulating the environment these vehicles interact with. In addition, IHS Markit [forecasts](#) that 25% of vehicles sold globally 6 years from now will be equipped with cybersecurity cloud services, such as those offered by HARMAN. “Cybersecurity is becoming a key technology for the automotive industry as connected cars grow,” said Egil Juliussen, Ph.D. and research director for IHS Markit. “It is especially important for self-driving and driverless cars where it will be required.”

A strong cyber security infrastructure that protects our cars is necessary for the deployment of autonomous driving on public roads. This September, the [House of Representatives passed](#) the SELF DRIVE Act bill that lays out a basic federal framework for autonomous vehicle regulation, with specific mention of cybersecurity

measures, such as having an on-board intrusion detection system. The bill, Safely Ensuring Lives Future Deployment and Research In Vehicle Evolution Act ([SELF DRIVE Act](#)), will create a base regulation for vehicles across the United States and is expected to pass the Senate soon before reaching the president's desk to sign.

HARMAN SHIELD Solution, the Cybersecurity Analysis Center and the new technology preview are demonstrated during CES 2018 in Las Vegas, January 8-11, at the invite-only HARMAN Exhibition at the Hard Rock Hotel.

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