NEWS RELEASE

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Insight LiDAR Develops Industry's First "Gesture Detection" Sensing Technology for Autonomous Vehicle LiDAR Systems

Insight 1600 Capability Enables AV Systems to Detect Small Movements Even at Distance

Lafayette, CO, April 7, 2021 – Autonomous Vehicle (AV) technology company Insight LiDAR (www.insightlidar.com) today announced that its product, Insight 1600, is the first LiDAR with the combined high resolution and velocity detection to enable pedestrian gesture recognition. The new capability -- demonstrated here **--** can be used by AV perception teams to quickly and accurately predict the actions of pedestrians.

Vice President of Business Development Greg Smolka explains, "When humans drive, we're constantly scanning the environment around us. We're watching for cars moving into our lane and looking at nearby pedestrians to see what they might do. For example, if a pedestrian looks both ways at an intersection, drivers understand that that person intends to cross the street."

According to Insight LiDAR Vice President Chris Wood, detecting these subtle pedestrian movements that convey intent is an important safety capability that has eluded AV developers until now.

"When we initially designed Insight 1600, we expected its ultra-high resolution and instantaneous low velocity detection with every pixel to be critical in making vehicle decisions, especially regarding other vehicle movement," Wood said. "However, we've been surprised by all the ways perception teams are using this critical information. From separating close objects and more accurately identifying distant ones to now predicting pedestrian movement, we're seeing how important this data is to safe AV operation." Wood reports that Insight LiDAR's FMCW sensors are believed to have the lowest minimum detectable velocity on the market.

About FMCW Technology
Unlike most conventional LiDAR systems, the Insight 1600 offers a more sensitive technology to assess the environment. Known as Frequency Modulated Continuous Wave, or FMCW, this advanced LiDAR sensor technology utilizes a low power continuous wave of light instead of high-power laser pulses to sense its environment. Much more sensitive than traditional LiDAR, this allows AVs to see objects much further away. The Insight 1600 also boasts the industry's highest resolution, 4-64x better than competitors. This ultra-high resolution, coupled with Insight's highly sensitive FMCW architecture, detects enough pixels to enable AV software to not only detect, but also identify small, low reflectivity objects at distances exceeding 200 m.

"The Insight 1600 with its ultra-high resolution and advanced FMCW technology, opens the door to substantially better Advanced Driving Assistance Systems, as well as more capable and safer Autonomous Vehicles," commented Michael Minneman, CEO of Insight LiDAR. "What's key here is both the quality and the amount of data the Insight 1600 generates. More data makes the AI easier and, ultimately, drives safety. As we drive, we're all used to watching pedestrians to understand their intent. Now, for the first time, LiDAR can do the same thing."

But abundant data isn't the only thing needed for faster AV adoption. Cost and reliability are critical, too.

Insight 1600's Chip-Scale Architecture Drives Low Cost
With more than 12 years of experience in high-resolution medical and industrial imaging, Insight LiDAR is using a combination of enabling technologies and patented techniques with Insight 1600., Utilizing Photonic Integrated Circuits (PICs) and ASICs , Insight 1600 is based on a semiconductor architecture that can be scaled up for low-cost production in the millions of units.

To learn more about Insight LiDAR's Insight 1600, go to insightlidar.com. Direct inquiries to the company can be made to contact@insightlidar.com or by calling (303) 604-5130.

About Insight LiDAR

Launched in 2016, Insight LiDAR is developing chip-scale, ultra-high resolution, FMCW LiDAR sensors. Based in Boulder, CO, the company and its parent, Insight Photonic Solutions, is an award-winning, global leader in 3D imaging and fast-scan, swept wavelength laser technology. Its products are used in applications ranging from automotive to biomedical imaging, semiconductor manufacturing to material processing.

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