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STMicroelectronics reveals FlightSense™ multi-zone ToF sensor for gesture recognition, intruder alert, and human presence detection in front of PC

- *Cost-effective non-vision based turnkey solution detects user presence, recognize gestures, and protects against “shoulder surfers” for smoother interactions, enhanced security, and power saving*
- *Now being embedded in select Lenovo PCs¹*

Geneva, July 6, 2022 – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, has unveiled its latest FlightSense™ Time-of-Flight (ToF) multi-zone sensor. Delivered together with a suite of valuable software algorithms, the combination provides a turnkey solution for user detection, gesture recognition, and intruder alert, specially designed for the PC market.

ST's FlightSense multi-zone sensors continuously scan their field of view to map the scene and gather intelligence without using a camera or recording images. By using ToF technology, the sensors can detect and track multiple targets, calculating at high speed their X/Y/Z coordinates and motion.

The latest [VL53L5CP](#) FlightSense multi-zone sensor can detect multiple targets in 64 (8x8) zones within a wide 61-degree field of view. The sensor comes with Presence Premium PLUS, ST's proprietary third generation of algorithms dedicated to PC applications, supporting its advanced and innovative features and enhancing data protection. Interacting with native aspects of the PC hardware and OS, this turnkey solution is certified at the highest level by Intel®.

The VL53L5CP and Presence Premium PLUS software are optimized for PC applications and supported in Windows® 11. PC designers can thus implement innovative features including smart power management, enhanced security, and touchless user interaction. ST's presence solution has been the pioneer to enable wake-on-approach and walk-away lock, which enable a seamless “always-on” user experience while maximizing battery-energy savings. Automatic and immediate walk-

¹ ToF sensor feature may only be available in select Lenovo devices in selected markets. All offers subject to availability. Lenovo reserves the right to alter product offerings, features, and specifications at any time without notice.

away lock also prevents unauthorized access and data protection while the user is away.

In addition, multi-human detection (MHD) senses other people in the field of view and analyzes their position and movements to assess security risks such as “shoulder surfing.” In relevant situations, the system alerts the user.

Another breakthrough innovation in the [VL53L5CP](#) is robust touchless gesture sensing, which allows the user to control PC applications without touching the screen, keyboard, or mouse. The sensor can detect directional swipes and taps, as well as level adjustments. With access to such information, developers can easily implement instructions such as next or previous slide/song/video, play/pause, and volume control.

Global technology powerhouse and the world’s leading PC company² Lenovo is integrating ST’s presence solution in select laptops. Zhaochun Ma, Lenovo Vice President of Consumer and SMB Notebook Development Center, Intelligent Devices Group commented, *“Today’s flexible, mobile working lifestyles demand privacy and ease of use to maximize productivity. That’s why we’ve integrated ST’s presence solution based on camera-free ToF sensing into Lenovo PCs. From logging into and locking one’s device hands-free based on human presence detection to using hand gestures to swipe content, we’re making Lenovo PCs smarter and more adaptive.”*

ST’s Presence Premium PLUS software also enables PC designers to develop custom AI applications in Windows, leveraging the VL53L5CP sensor’s 8x8 multi-zone data to sense user intent, with continuous presence detection. In addition, dynamic programming of the VL53L5CP’s key parameters from Windows allows the end user to personalize parameters such as timing and lock/wake distances.

By enabling these features using non-vision-based ToF technology rather than the PC’s webcam, the VL53L5CP enables superior differentiation in several respects. With no image, it eliminates any privacy concerns. The sensor is always on, hidden behind the bezel, thereby removing dependence on the webcam shutter position. In addition, the sensor integrates a 940nm VCSEL infrared light emitter, invisible to human eyes, which ensures full performance in the dark or low-light conditions. In contrast, cameras need a dedicated power-hungry LED to illuminate the scene.

ST’s FlightSense technology outperforms several other techniques used for human detection. These include traditional infrared sensors, which do not measure distance and are affected by the color and reflectance of detected objects. Ultrasound is sensitive to noisy environments and may affect pets’ hearing. Radar requires very complex software development on top of power-hungry signal processing.

“We continue to unleash more of the extraordinary potential from our FlightSense ToF technology to enable imaginative features across a full range of smart products,” said Eric Aussedat, ST’s Executive VP, Imaging Sub-Group General Manager. *“Now entering the fourth generation, our latest ToF sensor enables PCs to understand their users, creating a stronger connection and more rewarding ownership experience.”*

² Based on International Data Corporation (IDC) Worldwide Quarterly Personal Computing Device Tracker 1Q22 released on April 11, 2022.

The [VL53L5CP](#) FlightSense multi-zone ToF sensor is in volume production and available now with the Presence PREMIUM PLUS algorithms. Please contact your ST sales office for pricing options and sample requests.

About STMicroelectronics

At ST, we are 48,000 creators and makers of semiconductor technologies mastering the semiconductor supply chain with state-of-the-art manufacturing facilities. An integrated device manufacturer, we work with more than 200,000 customers and thousands of partners to design and build products, solutions, and ecosystems that address their challenges and opportunities, and the need to support a more sustainable world. Our technologies enable smarter mobility, more efficient power and energy management, and the wide-scale deployment of the Internet of Things and connectivity. ST is committed to becoming carbon neutral by 2027. Further information can be found at www.st.com.

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