Gentex Expands Cabin Monitoring Capabilities With the Acquisition of Guardian Optical Technologies

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ZEELAND, Mich., Sept. 06, 2021 (GLOBE NEWSWIRE) -- Gentex Corporation (NASDAQ: GNTX) today announced the acquisition of Guardian Optical Technologies, an Israeli startup that pioneered a unique, multi-modal sensor technology designed to provide a comprehensive suite of driver- and cabin-monitoring solutions for the automotive industry.

Gentex is a long-time supplier of electro-optical products for the global automotive, aerospace and fire protection industries. It's best known for supplying nearly every major automaker with connected-car technologies and advanced electronic features that optimize driver vision and enhance driving safety.

The core of Guardian's technology is an infrared-sensitive, high-resolution camera that combines machine vision, depth perception, and micro-vibration detection. This proprietary sensor configuration allows the system to not only monitor the driver, but also the entire vehicle cabin and all its objects and occupants, assessing their behavior, gestures, and activities.
The system continuously scans, tracks and determines the physical location of every vehicle occupant and object, even without a direct line of sight, by combining two-dimensional video image recognition with 3D depth mapping and optical motion analysis. It's capable of detecting the slightest of movements, including heartbeats.

"Guardian utilizes artificial intelligence and computer vision algorithms to create comprehensive, in-cabin sensing functionality for today's vehicles and the autonomous age," said Gentex Chief Technology Officer Neil Boehm. "With a single sensor module, we can monitor driver alertness, fine-tune airbag deployment, track passenger behavior -- even detect the presence of a child sleeping in a car seat in the rear of the vehicle."

The Guardian acquisition further bolsters Gentex's cabin monitoring expertise. For decades, the company has integrated displays, cameras, and various ADAS features into its smart rearview mirrors. Because the interior mirror area has an ideal view of the driver and the entire vehicle cabin, it's a logical location for the integration of the in-cabin monitoring camera.

"A mirror-borne, in-cabin monitoring system would allow automakers to offer an attractively packaged, scalable, cross-car-line feature in a high-performance location that simplifies regulatory compliance," explained Boehm. "We're currently working on multiple proof-of-concept designs for mirror- and overhead-console-integrated driver monitoring solutions."

In January, Gentex announced the acquisition of Vaporsens, a Utah-based startup that pioneered a new nanofiber sensing technology capable of detecting a wide variety of chemicals, including explosives, drugs, VOCs, toxic industrial chemicals, amines, and more. This digital olfaction technology could be used to monitor in-vehicle air quality in passenger vehicles, and expanded to identify explosives, biohazards and other pollutants for self-driving cars.

"Our goal is to provide automakers with holistic cabin monitoring solutions, from simple driver monitoring through complete cabin monitoring and machine olfaction," continued Boehm. "We're engineering a comprehensive and scalable platform based on robust sensor fusion techniques that will allow us to provide features for today's vehicles, transitionary vehicles, and completely autonomous mobility solutions."

Founded in 2015 and based in Tel Aviv, Israel, Guardian Optical Technologies is dedicated to enabling "passenger aware" cars with cutting-edge, optical sensor technology that makes vehicles safer and more convenient.

Founded in 1974, Gentex Corporation (NASDAQ: GNTX) is a supplier of automatic-dimming rearview mirrors and electronics to the automotive industry, dimmable aircraft windows for aviation markets, and fire protection products to the fire protection market. Visit the company website at www.gentex.com.

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Photos accompanying this announcement are available at:

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Gentex Guardian Multi-Modal Driver & Cabin Monitoring Sensor



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Gentex's Guardian Sensor in an Overhead Console



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Gentex Driver and Cabin Monitoring



The Gentex Guardian multi-modal sensor technology is designed to provide a comprehensive suite of driver- and cabin-monitoring solutions for the automotive industry.

Source: Gentex Corporation