

UTC Aerospace Systems Develops World's Highest-Resolution SWIR Camera for ONR

CHARLOTTE, N.C. – Under a contract with the Office of Naval Research (ONR), UTC Aerospace Systems' Sensors Unlimited business has developed the world's highest-resolution indium gallium arsenide Near Infrared/Shortwave Infrared (NIR/SWIR) imaging sensor, the company announced Oct. 31.

The new sensor includes a 16-megapixel photo-detector array on a 5-micron pitch, providing roughly 16 times more detail than the company's existing high-definition sensor, released in 2012, which has a resolution of 1.3 megapixels. UTC Aerospace Systems is a unit of United Technologies Corp.

The first-of-its-kind sensor is hybridized to a matching silicon Complementary Metal Oxide Semiconductor read-out integrated circuit and packaged into a hermetically sealed focal plane array. Imaging electronics were also designed and developed to integrate the focal plane array into a complete imaging camera.

Per ONR's requirement, the sensor is compatible with the RQ-21A payload SWAP (size, weight and power) envelope and offers the following capabilities:

- High coverage rate spectral sensing in the SWIR band.
- Ability to continuously monitor a wide area activity at a resolution (temporal and spatial) consistent with dismount detection/tracking.
- High fidelity inspection sensing in both of the above collection modes.
- Autonomous identification of objects, behaviors and

materials of interest with accuracy rates high enough to enable a useful real-time dissemination of information directly to warfighters.

UTC Aerospace Systems developed the sensor for the U.S. Navy's Spectral and Reconnaissance Imagery for Tactical Exploitation (SPRITE) program and has delivered four prototypes to the service as part of a three-year, \$9.7 million award.

"Our newest SWIR camera uses groundbreaking technology to provide operators with a higher resolution and greater level of detail than ever before," said Michael Daugherty, program manager, UTC Aerospace Systems. "For the warfighter, this means an improved ISR [intelligence, surveillance and reconnaissance] situational awareness capability. We're honored to support the U.S. Navy and look forward to continuing to support the SPRITE program in the years ahead."