

Compact High Power 3D LiDAR System for (UAS) Unmanned Aircraft Systems, Phase I Project

SBR/STTR Programs | Space Technology Mission Directorate (STMD)



ABSTRACT

Eotron has introduced a high performance 3D Time-of-Flight Laser illumination source based on its patented silicon packaging technology originally developed to improve power and brightness in high-power diode laser modules. Using proprietary design, fabrication and thermal management techniques, Eotron has developed a compact Laser illumination source that achieves a high pulse modulation rate and peak power output with fast rise times. This technology allows for real time 3D imaging and ranging using higher peak power and pulse rate to provide both long distance and high resolution imaging. Eotrons 3D Time-Of-Flight (TOF) technology will add new dimensions and capabilities to a seemingly endless number of applications. Whether it is for collision avoidance systems for manned or unmanned air or ground vehicles, surveillance system?s intruder detection or identification, robotic vision or artificial intelligence, all can benefit from this technology. Add to this that the technology is Wafer Scale Production ready, lowering the cost of production in volume.



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ANTICIPATED BENEFITS

To NASA funded missions:

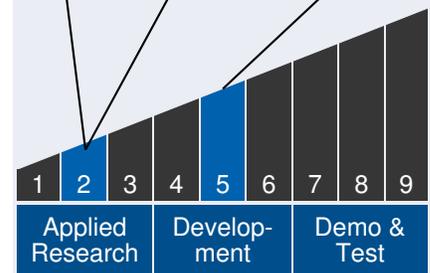
Potential NASA Commercial Applications: Unmanned Aircraft Systems, Collision Avoidance, Robotic Vision, Terrain Mapping, Image Recognition, Security Systems, Gesture Computer Control, Precision Measurement of Large Objects, LiDAR, 3D Imaging

To the commercial space industry:

Potential Non-NASA Commercial Applications: Collision avoidance systems both Auto and Drones, security systems, robotic vision, computer gesture control, 3D imaging

Technology Maturity

Start: 2 | Current: 2 | Estimated End: 5



Management Team

Program Executives:

- Joseph Grant
- Laguduva Kubendran

Program Manager:

- Carlos Torrez

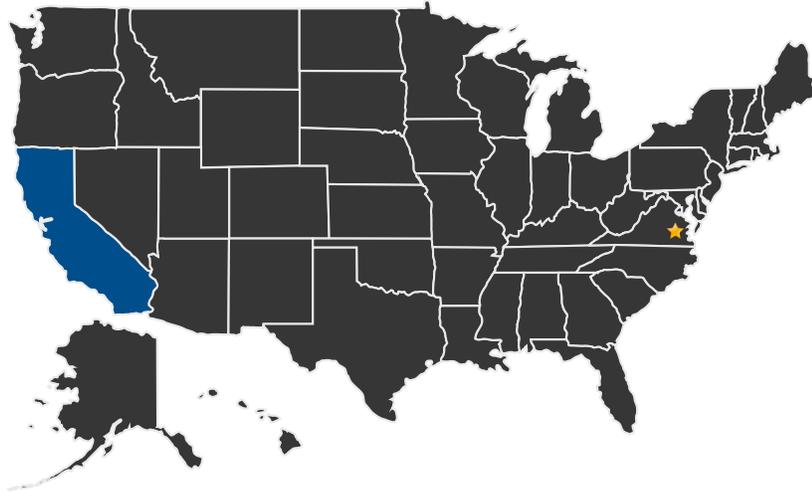
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U.S. WORK LOCATIONS AND KEY PARTNERS



■ U.S. States
With Work

★ **Lead Center:**
Langley Research Center

Other Organizations Performing Work:

- EOTRON, LLC (Oceanside, CA)

PROJECT LIBRARY

Presentations

- Briefing Chart
 - (<http://techport.nasa.gov:80/file/23553>)

Management Team *(cont.)*

Principal Investigator:

- Gerald Kim

Technology Areas

Primary Technology Area:

Robotics and Autonomous
Systems (TA 4)

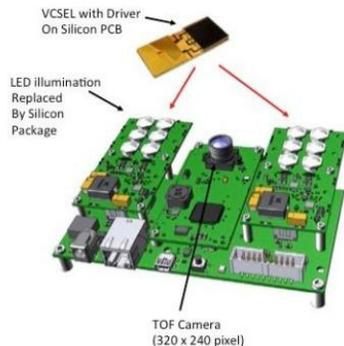
- └ Sensing and Perception (TA 4.1)
 - └ State Estimation (TA 4.1.2)

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IMAGE GALLERY



*Compact High Power 3D LiDAR
System for (UAS) Unmanned Aircraft
Systems, Phase I*

DETAILS FOR TECHNOLOGY 1

Technology Title

Compact High Power 3D LiDAR System for (UAS) Unmanned Aircraft Systems, Phase I

Potential Applications

Unmanned Aircraft Systems, Collision Avoidance, Robotic Vision, Terrain Mapping, Image Recognition, Security Systems, Gesture Computer Control, Precision Measurement of Large Objects, LiDAR, 3D Imaging