

ALTITUDE: Affordable LIDAR Technologies for Integration and Unmaned Deployment

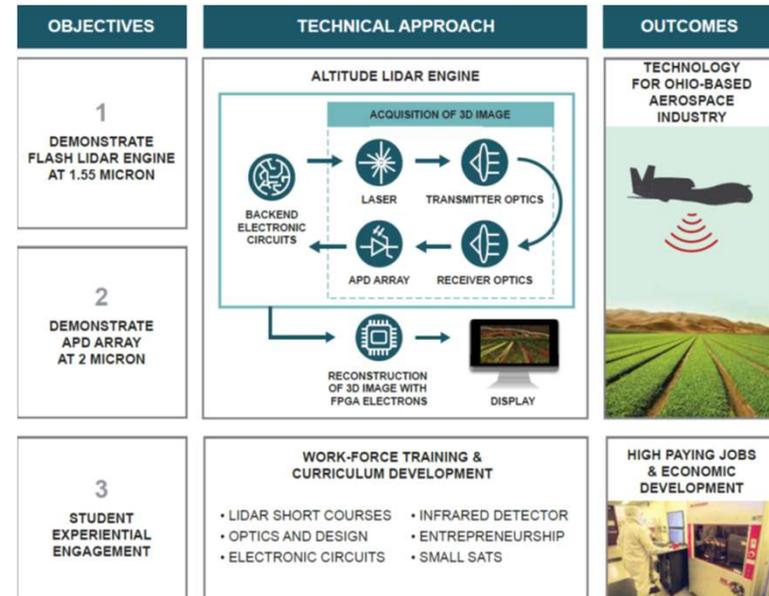
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 Federal partners: AFRL Sensors Directorate, NASA GRC

ALTITUDE Team:



Graphical Depiction



Objectives and Technology Description

- **Objectives:** development of a Flash LIDAR system
 - For commercial avionics market (1.55 micron)
 - For DoD surveillance (2 microns)
 - Using novel avalanche photodiode (APD) focal plane arrays
- **Novelty:** three key technical innovations
 - Expanded LIDAR functionality enabled by 1.55 and 2 micron operation
 - Low SWaP-C enabled by high operating temperature avalanche photodiode arrays
 - Manufacturability and scalability enabled by InP substrates
- **Application:** integration onto expendable or attritable air platforms for long-range surveillance and targeting
- **Maturity:** Entry TRL: 3, Exit TRL: 4

Benefits and Impact

- **Impact:** Long-term economic benefits include:
 - Establish aerospace LIDAR technology base in Ohio
 - Create ~50 high tech jobs by 2025, train/mentor workforce
 - Generate and license university IP for commercial use
 - Enhance high tech manufacturing in small & large companies
- **Project needs:** Short-term needs to mature technology
 - Government and industry funding sources
 - Commitment by potential federal and commercial user base
 - Prospective manufacturing partners

Airspace Management

Command & Control

Comms

Power & Energy Storage

Propulsion

Sensors & Awareness

Other