Navy ManTech Program

Electro-Optics Center

NSRP All Panel Meeting

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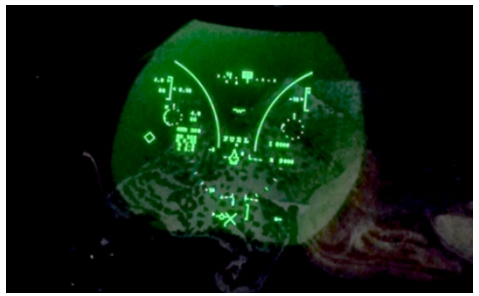
EOC Introduction

PennState Electro-Optics Center

The Electro-Optics Center (EOC) was established at Penn State University in 1999 as one of the Navy ManTech program's Centers of Excellence (https://www.arl.psu.edu/eoc/).

EOC operates within the Electro-Optics and Electronics Division of the Penn State Applied Research Laboratory

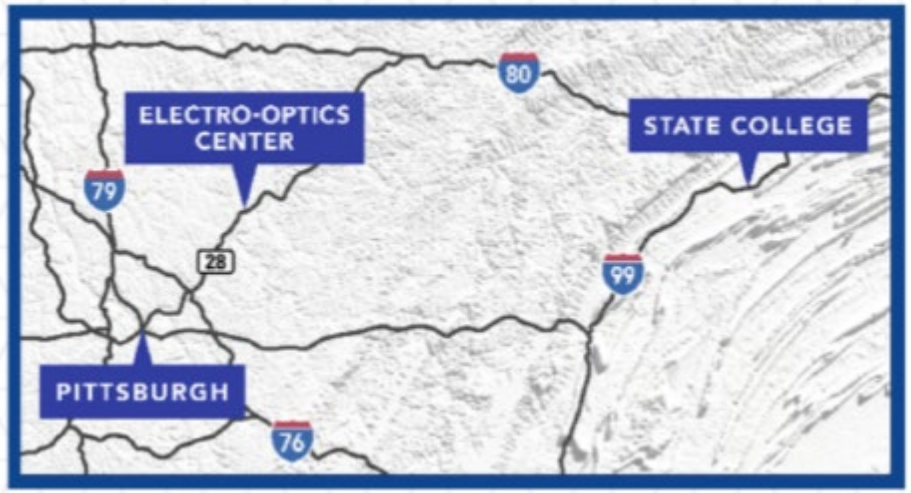


Mission: To transition new electro-optics technologies and applications to Navy-selected focus platforms, through strong technical interactions with DoD and its industrial base, demonstrating acquisition cost savings, lifecycle cost savings, and accelerating capabilities to the warfighter.

EOC Facility and Labs

PennState Electro-Optics Center

- Northpointe Industrial Park, Freeport, PA
- 45,000 sq. ft.
- High Energy Laser Effects Laboratory
- Materials Evaluation Lab and Cleanroom
- Fiber Optics and Photonics Laboratory
- Spectroscopy Lab
- Environmental Test Laboratory
- Optical Coating and Characterization Clean Room
- Optical Assembly and Testing Lab
- Infrared Testing Lab
- Drone Testing Lab
- Crow's Nest



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EOC Technical Thrusts

PennState Electro-Optics Center

- Manufacturing *of* Electro-Optics
  - Sensors, Fiber Optics, Interconnects, Electronics Materials, Lasers, Optics and Windows → Photonic Masts, Tracking Systems, Lighting, Laser Weapons, etc.
- Manufacturing *Using* Electro-Optics
  - Metrology, Inspection, Vision Systems, Augmented Reality, New Sensor Techniques, Drone and Robotics Applications
- Manufacturing Systems
  - Supply Chain Analysis, Modeling and Simulation, Risk Management, Industrial Base Assessments, Technology Obsolescence Management

Fiber Optics and Photonics

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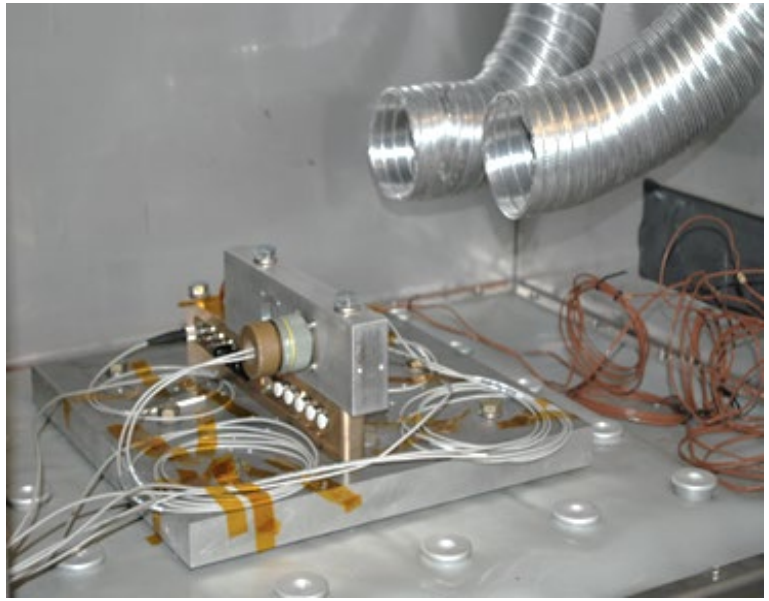

FIBER OPTIC CHARACTERIZATION / INSTALLATION

Environmental testing and lean manufacturing techniques for defect reduction and performance enhancement

INTEGRATED LINK TESTING

Automatic testing of electrical cabling, RF links and optical fiber links, and associated data processing

FIBER OPTIC INTERCONNECT TECHNOLOGY

Automation of fiber optic cable assembly process for military fiber optic connectors

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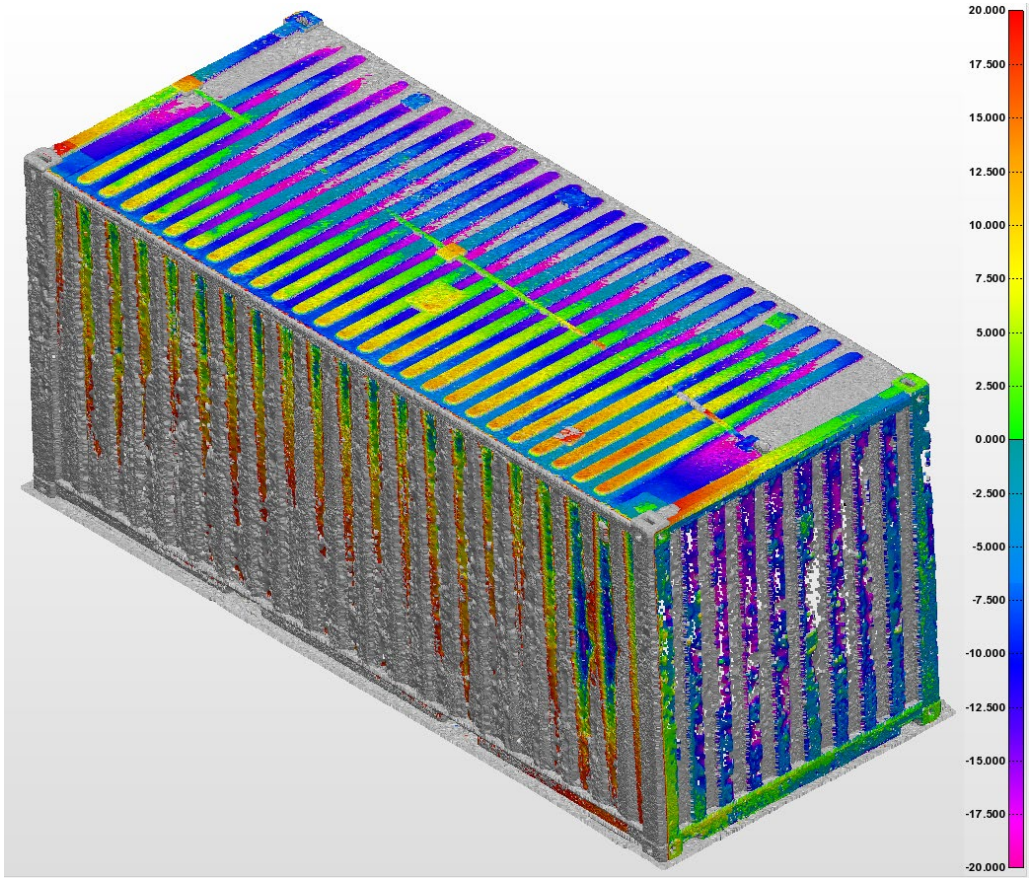
S2828 Automated Metrology for Structural Assembly

- Automated “heat map” of deviations from a large standoff distance
- Optimal point cloud collection for large structures
- Minimal use of targets



S2827 Tank Inspection Using Drones

PennState Electro-Optics Center

- Custom-built drone for visual and chemical inspection of tanks
- Stable navigation through narrow openings
- Long battery life

EOC Key Staff and Contact Info

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