



Aerocyonics, Inc.

Launching Creative Innovation & Security

Capability Statement

About Aerocyonics, Inc.

Aerocyonics, Inc. is a technology company focused on advancing microelectronics assurance, hardware security, and supply chain risk management for mission-critical systems. We support government and industry partners in addressing complex challenges related to system integrity, counterfeit detection, and trusted hardware.

Our team brings expertise in hardware and software assurance, cyber-physical systems security, data analytics, and machine learning, with applications spanning defense, aerospace, and high-reliability sectors. We specialize in developing innovative, practical solutions that strengthen device-level trust, improve traceability, and enable confident decision-making across the lifecycle.

Aerocyonics is committed to delivering high-impact technical solutions, supporting national security priorities, and advancing the state of practice in microelectronics assurance.

Core Competencies

- Microelectronics Assurance and Hardware Security
- Counterfeit Parts Avoidance, Detection, and Risk Analysis
- Cyber-Physical Systems Security
- Systems Security Engineering
- Supply Chain Risk Management (SCRM)
- Risk Management Framework (RMF) Support
- Hardware Assurance (HwA), Validation, and Test & Evaluation
- Microelectronics Reverse Engineering (Die-to-Netlist)
- Data Analytics for mission-critical systems

Advanced Technology Development & Commercialization

- Ultrafast Laser Nano-Machining
- Design Validation and Analysis Tools
- Artificial Intelligence and Machine Learning for Hardware Assurance and Analytics
- Integrated Manufacturing and Inspection Technologies
- Wafer, Die, Assembly, and System-Level Tagging and Traceability
- Multimodal Analytical Software
- Advanced Computing Architectures beyond Moore's Law

Company Data

- DUNS Number: 116835597
- CAGE Code: 87FJ2
- SAM UEI: TJW5NDLH8TN1
- Active JCP Certification# 0080884

NAICS

- 541715 Research and Development in Physical, Engineering, and Life Sciences
- 541713 Research and Development in Nanotech
- 541330 Engineering Services
- 541611 Administrative & General Management Consulting
- 541618 Other Management Consulting Services
- 541690 Other Scientific and Technical Consulting Services
- 541990 Professional, Scientific & Technical Services
- 334516 Analytical Laboratory Instrument Manufacturing
- 334519 Other Measuring and Controlling Device Manufacturing

Current & Past Performance

- **Missile Defense Agency (MDA) SBIR Phase II – Contract HQ0860-25-C-7418.** Developing an ultrashort pulse laser processing capability for decapsulation and sample preparation of microelectronics in support of destructive physical analysis (DPA), failure analysis, and related microelectronics evaluation workflows.
- **Counterfeit Parts Test Laboratory Evaluation – U.S. Army DEVCOM AVMC/T&AM.** Evaluated laboratory proficiency and the effectiveness of counterfeit defect detection using AS6171 test methods.
- **Information Exchange Contract – Department of Energy Laboratories.** Assessed industry practices related to cyber-physical systems security, hardware assurance (HwA), software assurance (SwA), and supply chain risk management.
- **Certificate Authority Project – GlobalFoundries.** Performed analysis and feasibility assessment for certificate authority implementation.
- **DMEA Phase I STTR – AI-Enabled Automated PCB Analysis and Reverse Engineering Using Data Augmentation.** Conducted a feasibility study of non-destructive methods for PCB reverse engineering.
- **DMEA eNVM Study – GlobalFoundries.** Conducted an analysis and feasibility study supporting onshoring of embedded non-volatile memory.
- **Semiconductor Fabrication Assurance (SFA) and Rapid and Assured Microelectronics (RAMP II) – GlobalFoundries U.S. Inc.** Supported development and implementation of an improved enterprise architecture using a quantified assurance approach to identify, analyze, and mitigate cyber and hardware assurance risks to intellectual property, manufacturing operations, and products.
- **DMEA Phase I SBIR – Intelligent Automatic Serial Sectioning Using Ultrashort Pulse Laser Polygon Scanning.** Developed an approach integrating ultrashort pulse laser processing, polygon scanning, laser-induced breakdown spectroscopy (LIBS), gas processing, machine learning, and AI-based machine vision for controlled, automated, high-precision, high-throughput material ablation.
- **DMEA Phase I SBIR – Intelligent Ultrafast Laser/Imaging System R&D.** Developed an ultrafast laser and imaging approach integrating femtosecond laser technology, microscopy, and artificial intelligence for high-throughput, high-precision material removal, sample preparation, surface restructuring, and 3D tomography.
- **AFRL Subcontract – Counterfeit Parts Avoidance & Detection Guidebook.** Developed a two-volume guidebook for DoD program and contracting officers and formed and led the SAE G-32 Cyber-Physical Systems Security Committee, including hardware and software assurance subcommittees.