OIB-TECH

Organic Industrial Base Technology Enhancement & Cyber Hardening

The Challenge

The Navy Organic Industrial Base (OIB) operates with legacy and modern equipment that lacks connectivity, interoperability, and real-time visibility into operations. This constraint significantly limits the adoption of digital manufacturing capabilities—digital twins, artificial intelligence, predictive maintenance—needed for operational agility and data-driven decision-making.

24	$2.7M
Month Duration	Federal Funding

Objectives

- Define scalable open systems architecture for NAWCAD Lakehurst PMD
- Design cyber-secure operational technology network
- Integrate legacy and modern equipment into unified platform
- Enable real-time visibility and predictive analytics

Key Requirements

- Connect initial 75+ manufacturing devices
- Establish scalable architecture for 300+ devices
- Install sensors and monitoring equipment on legacy assets lacking data generation capability
- Minimize facility downtime during deployment

Expected Outcomes

- Cyber-secure industrial network demonstrating connectivity for 75+ devices
- Integrated digital manufacturing suite (IIoT, monitoring, analytics)
- Vendor-agnostic modernization blueprint for broader Navy OIB use

The Facility

NAWCAD Lakehurst PMD

305,000+ square feet with 300+ computer controlled and conventional manufacturing machines

Representative Use Cases

Data-Driven Programming

Provide machinists with historical part data, proven speeds and feeds, and setup notes to minimize errors and reduce scrap rates.

Real-Time Process Monitoring

Monitor machine parameters in real time to detect process drift, tool wear, and anomalies before quality is impacted.

Quality-Driven Improvement

Correlate inspection data with machine parameters to automatically adjust tool offsets and feed process improvements back into programming.

Implementation Milestones

- **Current State Assessment,** documented the existing environment, identified gaps and opportunities.
- **Architecture Definition and Engineering Development,** Open Systems Architecture and sufficient engineering definition to proceed with implementation.
- **System Integration and Commissioning,** specified use cases implemented at NAWCAD Lakehurst which are ready to proceed through verification and validation testing.
- **Demonstration, Validation and Transition,** implemented solution meets the approved requirements and acceptance criteria and has transitioned to NAWCAD Lakehurst PMD.