



# Production Capabilities

## Features and Benefits

Argon ST's manufacturing center located in Fayette County, Pennsylvania, offers a modern, effective approach to producing electrical and electromechanical products ranging from individual assemblies to complete systems, including system cables and electronic enclosures. All products are tailored to the customer's cost, quality, reliability, and technical requirements by combining past experience with knowledge of state-of-the-art production and testing procedures. As a systems integrator, we realize the importance of having access to the latest Commercial and Government off-the-shelf technologies. Familiarity utilizing COTS and GOTS has enabled us to support products from concept and design development, technological upgrade and throughout equipment life cycle.

### Argon ST Manufacturing Center: (AMC)

- ▶ 60,000 square ft. of dedicated manufacturing and assembly floor space
- ▶ Registered ISO 9001:2000 Quality Systems
- ▶ Facility cleared "Secret" through DOD Defense Security Service
- ▶ Full Environmental Stress Screening (ESS) capabilities
- ▶ Dedicated depot support for spares and repairs
- ▶ Training and field installation support for Out-of-Continental US (OCONUS) and Foreign Military Sales (FMS) customers

### Personnel

- ▶ Total employees – 90 - 100
- ▶ Resident defense contract management representative on site

### Core Competencies

- ▶ Engineering Development Model (EDM)
- ▶ Full system assembly integration and test
- ▶ Build to print, design/build to spec
- ▶ Wire harnesses/cable assemblies
- ▶ Electronic enclosures
- ▶ Electro mechanical assembly
- ▶ Enterprise Requirements Planning (ERP) infrastructure
- ▶ Local support for full machine shop and PCB assembly capabilities

### Certifications

- ▶ Registered ISO 9001:2000 Quality Systems
- ▶ IPC 610 and 620 qualified – 3 instructors on-site
- ▶ J-STD-001 qualified – 2 instructors on-site
- ▶ Certified Joint Service Logistic Support Analysis Record (LSAR)
- ▶ MIL-STD 1388 1A, 2B and Logistics Management Information (LMI)
- ▶ Wiring harness manufacturing association registered
- ▶ Wide area workflow certified
- ▶ Computer Aided Drawings (CAD)

*Argon ST Manufacturing Center in Fayette County, located approximately 75 miles South of Pittsburgh, PA.*





# Production Capabilities

## Argon ST Engineering Technical Center Facility Capabilities (AETC)

### Electrical Engineering

#### Design Capabilities

- ▶ Analog and digital circuit design – COTS and Custom
- ▶ Programmable logic device and FPGA development
- ▶ PCB design – Circuit schematic, PCB layout, and simulation (OrCAD and AutoCAD)
- ▶ Microcontroller and embedded systems development
- ▶ EMI/EMC remediation

#### Test

- ▶ Troubleshooting
- ▶ Component to system level evaluations
- ▶ Field testing

#### Prototype

- ▶ System modeling
- ▶ Printed circuit board development

#### Product/Production Support

- ▶ Test procedure/fixture development
- ▶ Failure analysis

### Software Engineering

- ▶ LabView based automated test
- ▶ Fixture based automated test (Test Engineering)
- ▶ VxWorks real-time development
- ▶ Microsoft based development (Visual C++, Visual Basic, VBA, Access)
- ▶ Linux based development
- ▶ Assembly based development (Motorola, Intel, Microchip, Atmel)
- ▶ Firmware development
- ▶ Language knowledge base includes: Ada, C/C++, JAVA, OOP, LISP, FORTRAN, Perl, SQL and more
- ▶ Communications development (CANbus, Serial, Ethernet, Fiber Optic)
- ▶ Protocol development (Point To Point, Token Ring, GPIB, IP)

### Mechanical Engineering

#### Design and Analysis Tools

- ▶ **Pro/Engineer Wildfire 2.0** – a 3D modeling package for mechanical design and drawing generation
- ▶ **Pro/Mechanica** – basic structural and thermal analysis package
- ▶ **ANSYS Workbench 9.0** – the premier structural analysis program on the market. It is capable of conducting almost any structural analysis imaginable, whether static or dynamic, linear or non-linear. CAD data can be directly imported into ANSYS from Pro/Engineer and large scale parametric studies can be conducted across an almost unlimited number of parameters
- ▶ **Pro/IntraLink V3.4** – a database that provides document control and file management
- ▶ **Dedicated CAD Server** – used to house all of the CAD software and license servers along with the Pro/IntraLink database. Increases calculation speeds, reduces workload for common server, and allows for continued use of desktop computers on other projects while conducting an ANSYS analysis

### Acoustic Capabilities

#### Test Pond

- ▶ Fresh water @ 21 degrees C
- ▶ 14 meters diameter, 13.5 meters deep
- ▶ Enclosed facility
- ▶ Overhead Crane – 25 Ft. lift, 1,200 lb. Load
- ▶ Extension shaft for testing at full depth of tank
- ▶ Provide testing media for underwater acoustic measurements

### Equipment

- ▶ Low Power Amplifier 75 watts  
1Hz-1MHz 125Vrms output  
– Matching transformer 2 ohms - 1kohm
- ▶ 25A Type System Amplifier  
– 1300 Watts, 1kHz to 100kHz  
– High power driver for transducers  
– Signal driver for in water transducers
- ▶ VIT-13 Voltage & Current Sensor  
– 10Hz-200kHz 10KV max 30 A max  
– Provides measurements of drive voltage and current amplitudes at instrument input levels
- ▶ National Instrument PXI System Controller PCI Base  
– Program, control, and data collection
- ▶ NI 100MS/s 16-Bit Arbitrary Waveform Generator - NI PXI-5421  
– Provide any signal required for acoustic testing
- ▶ (3) Dual channel 100MS/s 14-Bit Digitizer (256MB/Channel) - NI PXI-5122  
– Sample analysis FFT, amplitude, phase of outgoing and incoming signals
- ▶ Lecroy Waverunner O-Scope 1 GHz Digitizer  
– Sample monitor and analysis FFT, amplitude, and phase of outgoing and incoming signals
- ▶ Krohn-Hite 3944 (4) CH LP/HP/BP/BR Tunable Active Filter 3Hz-2MHz  
– Filter, select and isolate signal measurements
- ▶ Standard Receive Hydrophones  
– (2) type H-52, 20 Hz-150 KHz -177dB re 1 Volt per 1uPa
- ▶ Type ST-203 Line Array Projector  
– 10KHz-75KHz, TVR @ 77KHz=+150dB  
– Underwater sound reference calibration

### Argon ST Engineering Test Facility

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### Manufacturing Facility

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