

# MRG Engineered Products Capabilities

## Core Capabilities

### Products

- Ground Support Equipment
- Electronic Rack Assemblies
- Junction Box Design
- Wire Harness Design
- Training Equipment Design

### Services

- Manufacturing Services
- Engineering Services
- 3D Modeling
- Technical Drawing
- ISO Certification



## Products

### Ground Support Equipment (GSE)

- Compact Aircraft Support Cart (CASC) Model 125P-CASC45DC
- Oxygen Servicing Cart Model A/M26U-14
- Logistics and spare parts support

### Electronic Rack Assemblies Design, Assembly and Fabrication

- Turnkey systems
  - Populated/non-populated (components and wiring)
  - Single and multiple rack systems
- Design
- MIL-STD Testing

### Junction Boxes Design, Assembly and Fabrication

- Power entrance panels, power distribution units, transformers, etc.
- Signal entrance panels, signal interface panels, etc.
- RF entrance panels, patch panels, etc.
- Component types such as
  - Terminal boards, lugs, in-box wiring, etc.
  - Circuit breakers, relays, etc.
  - Electrical connectors, bulkheads, etc.
  - Power supplies, transformers, etc.
  - EMI / RFI filters
  - Grounding and bonding components
- Wire harness design, assembly and fabrication
  - Power cables and wiring
  - Signal / data cables and wiring
  - MIL-STD-1553 data bus
  - RF cables and wiring
  - Connector types such as
    - MIL-circular (MIL-DTL-22992, MIL-DTL-26482, MIL-DTL-38999, etc.)
    - N-type, C-type, BNC, SMA, etc.
    - U-183, U-228, U-229, etc., six pin audio
    - DB-type, HD-type, USB, etc.
    - IT / telephonic (RJ45, etc.)
    - Fiber optic ST, SC, FDDI, T-FOCA family, etc.

## **Training Equipment Design and Manufacturing (Surface, Subsurface and Aviation)**

- Partial Task Trainers (PTT)
- Technical Training Equipment (TTE)

## **Services**

### **Manufacturing Services**

- Build to Print
- Contract manufacturing
- 3D printing (additive manufacturing)
  - Bed Size: 1m (39.37") x 1m (39.37") x 0.5m (19.68")
  - Min Layer Height: 70 µm (.0027")
  - Available Materials: PLA, ABS, XT CF-20 (carbon fiber blend), Ninja Flex, PETG, specialty filaments upon request

### **Engineering Services**

- Finite Element Analysis (FEA)
- Computational Fluid Dynamics (CFD)
- Thermal Analysis
- Integrated System Design (electrical and mechanical design from prototype to final product)
  - Validation and verification
  - Critical and final design review
- Programming (LabVIEW, microcontrollers)
- Rapid Prototyping
- Engineering test plans
  - Mechanical and electrical test plans
  - Design and development of test fixtures and systems

### **3D Modeling (Electrical, Mechanical, Hydraulic and Pneumatic Systems)**

- SOLIDWORKS models for concept, prototyping, detailed design and manufacturing

### **Technical Drawings IAW ANSI Y14, NAVSEA, and NAVAIR Formats**

- Conceptual level
- Developmental level
- Production level
- Electrical schematics and wiring diagrams

### **ISO Certified (9001:2008) Currently Transitioning to 9001:2015**

- Full Design

## **Customers**

- Naval Air Warfare Center (NAWC)
- Naval Surface Warfare Center (NSWC)
- Naval Undersea Warfare Center (NUWC)
- National Aeronautics and Space Administration (NASA)
- Naval Ship Systems Engineering Station (NAVSES)
- Various Commercial Aerospace and Aviation Companies
- Foreign Militaries

## **Contact**

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