

Mechanical Solutions



Mechanical Solutions Division (MSD) is a Rapid Prototyping Organization focused on integrating innovative new technologies with NAE systems and aircraft platforms. MSD provides aircraft mechanical, structural and electrical/avionics modification service supported by a specialized workforce that understands the unique requirements of the Navy's RDT&E Process.

MSD's engineers are co-located with our multi-trade artisans skilled at problem solving and manufacturing, thereby providing a concurrent engineering process that facilitates quick innovative solutions.

facilities

Two Engineering Branches, Machine Shop, Sheet Metal Shops, 101 Hangar Facility, Composite and Wood Model Shops, Painting, Engraving and Plating Shops, Advanced Laser Data Acquisition Center (ALDAC).

State-of-the-art equipment: 4 axis CNC vertical machining centers, full range of CNC and manual lathes, CNC punching & bending brake, modern 3D solid modeling CAD-CAM capabilities, CNC water-jet cutters, rapid prototyping Fusion Deposition Modeling (FDM) machine, laser scanning coordinate measuring machines and X-ray Material Analyzers.



services/capabilities

Design Engineering and Aircraft Modification

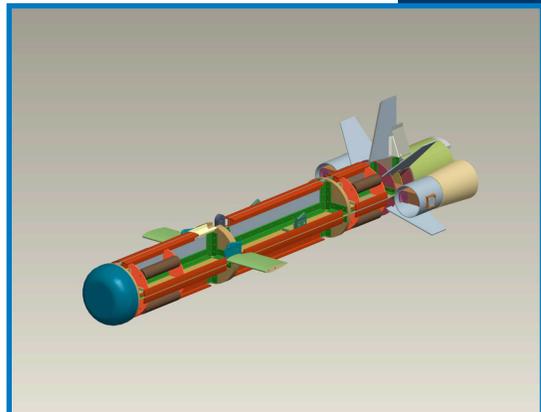
Provides customer-oriented solutions by providing airworthy aircraft structural and electrical design, prototype hardware and documentation that meets the guidelines and requirements of the NAVAIR Flight Clearance Process. Engineering is co-located with Machining & Fabrication to facilitate concurrent engineering.

- Level I to III Drawing Packages and CAD Modeling
- Prototype and System Modeling
- Classical Structural and Finite Element Analyses (ANSYS)
- Design for Flight Loads, Mass Properties and EMI
- Electrical Wiring Diagrams, Schematic Capturing, PC Board Design, and Electrical Load and Thermal Analyses



Reverse Engineering - Advanced Laser Data Acquisition Center (ALDAC) - Quick turn around time on necessary parts essential for the fleet. Using the same model for drafting, the first production part can be machined simultaneously. All models easily imported into modern CAD/CAM software.

Sheet Metal - Performs aircraft modifications, fabrication and installation of prototype devices in hangar facility. Fabricates components by forming, bending, cutting, drilling, and rolling sheet metal and extrusions.



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Machining - Performs fabrication of prototype devices and components by using Computer Numerical Controlled (CNC) and conventional precision machine tools.

Sheet Metal Aircraft Instrumentation - Specializes in fabrication and installation of special flight test instrumentation and distributed data acquisition instrumentation systems such as air data booms, potentiometers, and accelerometers.

Wiring - Provides electrical wiring installations and modifications via our partnership with Aircraft Instrumentation Division.



experienced workforce

Technical Excellence - Talented artisans work concurrently with engineering to develop innovative solutions that meet customer's unique RDT&E needs. Structurally analyze designs and build prototypes as design evolves. RDT&E Customer can visually review potential solutions prior to design completion. MSD's integrated workforce provides quick fielding of new technology in support of war efforts.



customers & sample products

MH-60 Air Ambulance Systems - Designed litter management system and modified Navy helicopters to help evacuate wounded soldiers in Iraq.

E-6 Joint Communications Airborne Communications Suite – redesigned GFE and installed system on aircraft. System used to track supply shipments and counter-terrorist attacks on convoys in Iraq.

Special Forces P-3 – Integrated missile warning and counter measure system to counter shoulder-fired terrorist missiles thereby increasing Special Forces mission success.

F-18 Instrumentation – Design and installed Camera Mounts, Telemetry Packages including boom and pods.

E-2C Surveillance – Modified aircraft and installed Infrared Search and Track Sensor - Used to Track Theater Ballistic Missile testing.

C-2 – Designed Instrument Panel and modified aircraft to install CNS/ATM Upgrade.

KC-130 – APS-115 Radar Install for KC-130F.



for more information

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