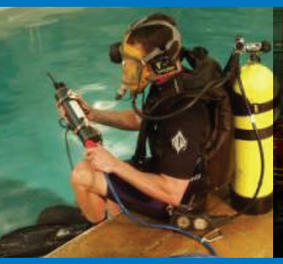

SPECIALIZED EQUIPMENT & FACILITIES

- Large-scale destructive test equipment
- 500,000 lb. capable fatigue testers
- Research pool (33 ft. deep)
- Shock and vibration actuators
- Hyperbaric chambers
- Friction and wear testers
- Vehicle dynamometers
- Access to crash test facilities
- Temperature, humidity and contamination chambers
- Scanning electron microscopes
- Analysis software and HPC cluster: Fluent, Star CCM+, Comsol, Matlab, Simulink, ABAQUS, CFDesign, ADAMS, Mathcad
- Class 100 clean room and Class 1000 secure clean room
- Manufacturing facility
- High bay integration space
- Circuit card assembly
- Material analysis facilities
- Corrosion facilities
- Radiographic labs

Every day, the people of Battelle apply science and technology to solving what matters most. At major technology centers and national laboratories around the world, Battelle conducts research and development, designs and manufactures products, and delivers critical services for government and commercial customers. Headquartered in Columbus, Ohio since its founding in 1929, Battelle serves the national security, health and life sciences, and energy and environmental industries. For more information, visit www.battelle.org.

800.201.2011 | solutions@battelle.org | www.battelle.org

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ADVANCED MISSION SYSTEMS

Unique, multidisciplinary solutions to advanced engineering challenges

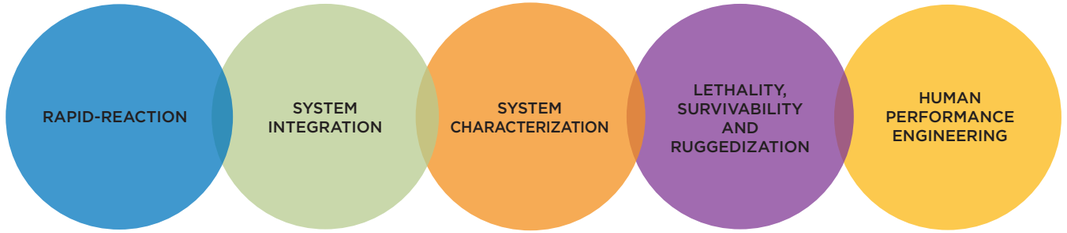
BATTELLE
It can be done

Image courtesy of DVIDS

BATTELLE

Advanced Mission Solutions: Providing a range of services from rapid prototyping, technology insertion and system integration to mission-critical equipment development and deployment across domains, Battelle is trusted by military customers to transform discoveries from the lab to mission-ready solutions.

KEY CAPABILITIES



MULTIDISCIPLINARY EXPERTISE

Part of Battelle's advantage is our people. The research and development organization includes 1,500 scientists and engineers with expertise in nearly every discipline, including:

- Requirements Development
- Material Science
- Electronics and Electromagnetics
- Failure Analysis and Design Optimization
- Design for Manufacturability
- Software Engineering and Modeling and Simulation
- Survivability
- Integration and Verification

SURVIVABILITY ENHANCEMENT

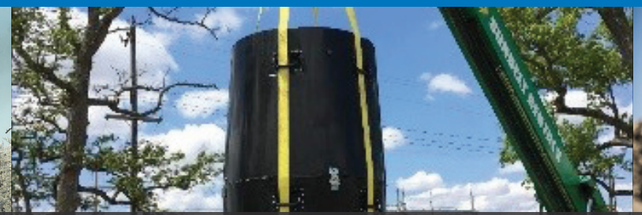
HeatCoat™ Active, In-Flight Ice Protection System

Challenge: Develop an anti-icing/de-icing product for new or existing unmanned aircraft with lower SWaP than competing technologies.

Solution: Developed and integrated a carbon nanotube anti-icing coating with minimal impact on vehicle performance (50% less weight, 30% less power consumption than competitors). The novel solution:

- employs existing power sources,
- conforms to existing skin of the aircraft and utilizes intelligent sensors and controls, and
- can be directly sprayed or applied as a laminate film.

RUGGEDIZED PAYLOADS AND EQUIPMENT



Specialized Shock Dampening Containers

Challenge: Design a packaging system to ensure survivability of a non-hardened vehicle and its payloads from impulse loading experienced during mission transport and deployment in operational environments.

Solution: Designed, fabricated, tested and delivered a container systems to protect equipment. The solution included:

- developing novel laboratory test approach to prove survivability,
- accommodating special mission requirements, including assembly time and other human factors, and
- delivering three (3) packaging systems, verification report and complete technical data package, including drawings for future builds.

DESIGN OPTIMIZATION AND PROTOTYPING

DroneDefender™ Handheld cUAS Device

Challenge: Rapidly develop and field a tool to neutralize drone threats without risking collateral damage

Solution: A handheld, non-kinetic system that instantaneously disrupts the adversary's control of the drone, neutralizing it so that no remote action, including detonation, can occur.

SERVICE LIFE EXTENSION

Dramatic UH-60 Lifecycle Improvement

Challenge: Design, develop and manufacture replacement components for the U.S. Army's UH-60A/L Black Hawk cockpit instrument panel.

Solution: Developed an ongoing solution for replacement of obsolete parts for the Army's aging legacy systems by leveraging commercial electronics technology advancements. Maintained nearly identical look-and-feel to the original items—reducing operational impact. The new parts cost less, weigh less, and use less power while delivering increased readiness, reliability, availability, and maintainability.

MISSILE DEFENSE

Missile Intercept Detection System

Challenge: Design a highly precise sensor system that measures the exact time and location of impact of U.S. interceptor missiles against enemy target missiles.

Solution: Developed and fielded an intercept detection system utilizing an original design to determine the impact and analyze how damage is propagated during missile intercept tests.

The system has been successful in every deployment (30+ total).

The system includes specially designed software that provides rapid data transmission from missile to ground at extremely high speeds—millionths of a second.