

# Global Deterrence & Defense Department Overview



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# STRATEGIC MISSIONS CENTER

Strategic Missions encompasses the full range of Department of Defense activities that alter an adversary's will and ability to attack the United States and its interests.



**DETER. DEFEND. DEFEAT.**

# STRATEGIC MISSIONS THRUST AREAS



- ✓ Trusted Electronics & Hardware Cybersecurity
- ✓ Navy-Air Force-MDA Collaboration
- ✓ Emerging Missions



- **DoD Executive Agent & Technical Warrant Holder** for Printed Circuit Board Technologies
- Joint Federated Assurance Center **Hardware Assurance Lead** for DoD and for the Navy
- **DoN S&T Lead** for Anti-tamper
- Naval Sea Systems Command (NAVSEA) Anti-tamper **Technical Warrant Holder**
- **Deputy Chair**, NAVSEA Counterfeit Material Prevention Policy Integrated Product Team
- **Chair** Strategic Rad Hard Electronics Council
- **Knowledge Champion** for Emerging Missions
- **Technical Execution Lead** for Strategic Rad Hard Electronics Council



- Thermal Protection
  - Model-Based Avionics Architecture Development
  - Inertial Instruments (e.g. Gyros, Accelerometers)
  - Data Collection Instrumentation
  - Advanced Radiation-Hardened Electronics
  - Stellar Technologies (e.g. Sensor, Optics, and Algorithms)
  - Trajectory Modeling
  - Performance Modeling of Complex Systems
  - Thermodynamics
  - High Temp Ceramic Composites
- System Engineering
  - Model Based Systems Engineering
  - System-Level Modeling and Simulation
  - System Accuracy and Reliability
  - Enhanced Fault Diagnostics / Detection
  - Material Availability and Obsolescence Evaluation
  - Hardware-in-the-Loop Integration
  - Enhanced Ground Test
  - Radiation Effect Modeling, Design, & Test
  - Design Verification & Validation
  - Advanced Modeling & Simulation of Complex Systems of Systems at the Component Scale
  - Topology Optimization
  - Digital Twins for Hypersonics
- Intelligent System Protocols
  - Secure Data Exchange
  - Secured Computing Architecture
  - Hardware Trust
  - Unmanned Aerial Vehicle Response
  - Unmanned Underwater Vehicle Response
  - Sensors
  - Post-Launch Communications
  - Situational Awareness
  - Logistics
  - Counterfeit Detection
  - Anti-Tamper
  - Supply Chain Risk Management

- Predictive Aging Models
- Material Science
- Data Analytics
- Propulsion Systems
- Control Systems
- Supply Chain Risk Management
- Failure Analysis
- Material Analysis
- Environmental Effects
- Cyber Security
- Batteries
- Modeling & Simulation
- Software Engineering
- Internal Communications
- External Communications
- Radiation Hardening
- Nuclear Effects Modeling – Fratricide
- Post-Flight System Accuracy Assessment
- Exo/Endo Flight Phenomena
- Underwater Launch
- Computational Fluid Dynamics
- Sensors & Sensor Systems
- Neuroscience
- RF/Wireless Systems
- Undersea Navigation
- Artificial Intelligence
- Computing Architectures
- Fault Diagnostics
- Systems of Systems
- Navigation Systems
- Guidance Systems
- Logistics
- Strategic Weapons Facility Operations
- Threat Analysis
- Unmanned Systems
- Unmanned Systems Defeat