



## Funding Alert from the Michigan SBIR/STTR Assistance Program

[Program link](#)

### DoD 2016.1 SBIR Topics DoD 2016.A STTR Topics

Pre-release opens December 11, 2015

Open discussion with TPOCs through January 10, 2016

Solicitation opens January 11 and proposals due February 17, 2016 at 6:00 a.m. ET

*Note:* Be sure to check the solicitation when released on Dec. 11 as topics may have been added, deleted or modified.

### DOD SBIR 2016.1 Topics

#### AIR FORCE

- AF161-001 Rapid Expeditionary Fuel Reclamation
- AF161-002 Fast-setting, High-strength Material for Expedient Pavement Repair
- AF161-003 Explosively Driven Fragment Imaging
- AF161-004 State-of-Health Monitoring for Plasma Sources to Correlate Ground Test and Space Environment
- AF161-005 Heterogeneous Porous Media for Thermal Transport Mitigation in Hypersonics
- AF161-006 Neutral Particle Dynamics in Transient Plasma to Determine Ground Test Chamber Interactions
- AF161-007 Validation of Low Hydrogen Embrittlement (LHE) Alkaline Zinc Nickel Electroplating for Steel and Aluminum Electrical Connectors, Back-Shells and Components
- AF161-008 Generator Power Recapture
- AF161-009 Material Sensor Technology for Chemical Cleaning and Stripping Process
- AF161-010 Additive Manufacturing Technique for Replacement of Complex Castings
- AF161-011 Acoustic Emission of Frangible, Composite, Concrete and Metallic Radar Towers
- AF161-012 Additive/Rapid Manufacturing Reverse Engineering, Processing and Production Integrated Solution for Agile Manufacturing of Air Force Tooling, Fixture and Prototype Production
- AF161-013 High Precision, Non-Line-of-Sight Point Cloud Generation
- AF161-014 Reconfigurable Interface Test Adapter
- AF161-015 Maintenance Data Collection from Non-Networked Automatic Test Equipment
- AF161-016 Radio Frequency Range Modernization, Compatibility and Capability Study
- AF161-017 Prediction of Stress Corrosion Cracking
- AF161-018 Landing Gear Fatigue Model K Modification
- AF161-019 Reconfigurable Manufacturing: A New Paradigm for Improved Performance of Depot Processes
- AF161-020 Quasi-Model Development using Digital and Non-destructive Inspection Data
- AF161-021 In-Process and Final Non-destructive Inspection Methods of Additive Manufactured (AM) Simulated Aerospace Critical Parts
- AF161-022 Installed Systems Near Field Antenna Pattern Measurement System
- AF161-023 Avian Collision Deterrents for Reflective Surfaces
- AF161-024 Prediction of Boundary Layer Transition on Hypersonic Vehicles in Large-Scale Wind Tunnels and Flight
- AF161-025 Micro-Climate Automated Recorder
- AF161-026 Real-Time Parameterized Reduced-Order-Model (ROM)-Based Aeroservoelastic Simulator
- AF161-027 Millimeter-Wave Micro-SAR (MMW uSAR)
- AF161-028 Cryo-Vacuum FTS using COTS Parts for Sensor Responsivity Measurements
- AF161-029 High Temperature Superconducting (HTS) Magnets
- AF161-030 High Speed Extraction of Hyperspectral Images within a Plume Radiation Database Structure
- AF161-031 Rapid Assessment of Structural Vulnerability

AF161-032 IRIG Data Recorder Validation  
 AF161-033 Precise Autonomous Vehicle Velocity Control  
 AF161-034 Fiber Metrology Verification and Validation for High Power Fiber Lasers  
 AF161-035 Image Processing that Supports Air-to-Air, High-Bandwidth, Image-Based, Active Tracking  
 AF161-036 Mitigation of Scintillation and Speckle for Tracking Moving Targets  
 AF161-037 Compact Optical Inertial Reference Unit for High Energy Laser System Line-of-Sight Stabilization  
 AF161-038 Generation of High Rep-rate/High Average Power USPL Sources  
 AF161-039 Game-Based Combat Rescue Helicopter Aircrew Mission Training and Rehearsal  
 AF161-040 Wearable Head Tracker System (WHTS)  
 AF161-041 Software Architecture Evaluation Tool for Evaluating Offeror Proposals  
 AF161-042 Simplified Aero Model Development and Validation Environment  
 AF161-043 PED Operational Domain (POD)  
 AF161-044 Finite Element Model of the F-35 Ejection Seat  
 AF161-045 Information Fusion to Enable Shared Perception between Humans and Machines  
 AF161-046 Inexpensive Haptic Devices and 3D Medical Game for the Interosseous Infusion Procedure  
 AF161-047 Cognition Biomarker Measurement in Sweat as an Index of Human Performance  
 AF161-048 Microdosimetry of High Amplitude Ultrashort RF and Electric Fields  
 AF161-049 Multi-modal Synthetic Sensor Data Generator with Real-World Environmental Effects and Sensor Physics  
 AF161-050 Microcosm Forecasting Utilizing Swarm Unmanned Aerial Vehicle Technology  
 AF161-051 Airborne Network using Spectrum-Efficient Communications Technologies (ANSECT)  
 AF161-052 Cognitive Airborne Communications with RF Interference Mitigation and Anti-jam Capabilities (RIMA)  
 AF161-053 Airborne Cloud for the Tactical Edge User (ABC)  
 AF161-054 Big Data Analytics  
 AF161-055 Survivable, Secure and Dependable Wireless Communications  
 AF161-056 Fusion of Multiple Motion Information Sources  
 AF161-057 Secure and Survivable Antennas for Communication in a Nuclear Environment  
 AF161-058 Modular, Secure and Affordable Design for NextGen ADS-B Integration  
 AF161-059 Event Recognition for Space Situational Awareness  
 AF161-060 Anti-Fragility for Virtualized Systems  
 AF161-061 Object Based Production (OBP) for Satellite Characterization  
 AF161-062 Innovative TWTs for VV Band Communications  
 AF161-063 Mission Visualization  
 AF161-064 Coordinated Data, Better Information, Enhanced Decision Making  
 AF161-065 Information Synthesis Algorithms for Sense and Avoid (SAA)  
 AF161-066 Rapid and Reliable Identification of Counterfeit Electronic Components  
 AF161-067 High-Performance Body Armor-Integrated, Multifunctional Batteries for Dismounted Soldier  
 AF161-068 High-Temperature Electric Wires  
 AF161-069 Physics-based airframe stress calculations at flow-separation dominated flight conditions for aircraft operational clearance, life prediction and inspection scheduling  
 AF161-070 Advanced Circuit Technologies for Reliable, Low-Cost, High-Temperature Electronic Controls  
 AF161-071 High-Speed Measurements of Flame-Stabilization Processes in Vitiated Augmentor Environments for Understanding Screech, Rumble, and Blowoff  
 AF161-072 Structurally Embedded Heat Exchanger  
 AF161-073 Online Chemical Diagnostics for Fuel System Flows  
 AF161-074 Durable Pre-cooling Heat Exchangers for High Mach Flight  
 AF161-075 Automated Synthesis of Propulsion-Power-Thermal Architectures  
 AF161-076 Probabilistic Design of Fuel Thermal Management Systems  
 AF161-077 Fast Valve for Starting Hypersonic Wind Tunnels  
 AF161-078 Integration of  
 AF161-079 Embedded Computing Cyber Testing and Assessment Methods  
 AF161-080 Additive Manufacturing Techniques  
 AF161-081 Precision Spacecraft Instrumentation Booms  
 AF161-082 L Band Analog to Digital and Digital to Analog Converter  
 AF161-083 GNSS Jammer Location Using Multipath Exploitation  
 AF161-084 Cognitive UHF Radio for Enhanced GPS Crosslinks  
 AF161-085 Improved Satellite Catalog Processing for Rapid Object Characterization  
 AF161-086 Solid-State Power Amplifier Thermal Management  
 AF161-087 Algorithm Development for WFOV Mission Data Processing  
 AF161-088 Integrated Code Base and High Performance Embedded Computing Tool

- AF161-089 Development of Flat Lens Technology
- AF161-090 High Data Rate/Low SWaP-C GPS Crosslinks
- AF161-091 Low Probability of Intercept PNT Augmentation Network
- AF161-092 Hypervelocity and Plasma Reentry Research Testbed
- AF161-093 Multi-material Additive Manufacturing for Advanced Space Systems
- AF161-094 Robust spacecraft solar array technology
- AF161-095 Resilient Structural Sensing Technologies for Responsive Anomaly Resolution
- AF161-096 On-orbit Calibration of Staring Imaging Sensors Using Innovative Techniques and Field-deployable Instrumentation with High Radiometric and Temporal Sensitivity
- AF161-097 Novel High Transmittance Curved Surface Laser Eye and Sensor Protection
- AF161-098 Enhanced Starting Reliability and High Altitude Operation of Internal Combustion Engines on Miniature Munitions
- AF161-099 Ultra Miniature Beam Steered Laser Radar System
- AF161-100 Multi-Axis Precision Seeker-Laser Pointing Gimbal
- AF161-101 Fiber Optic Networking Technology for Advanced Payload Integration on F-35 and Other Platforms
- AF161-102 High Fidelity Algorithm to Model the Statistical Variations of Ground Target Signatures in Scene Generator Systems
- AF161-103 Low Signal to Noise Ratio Radar Technology Investigation
- AF161-105 Sensors for Remote Airfield Assessment
- AF161-106 Compact SWIR DFOV Optics
- AF161-107 Integrating the EPIC Hydrocode with MEVA and Endgame Framework
- AF161-108 Innovative, Cost-Effective Techniques for Antenna Electronic Beam Steering
- AF161-109 Develop Urban Target Cumulative Structural Damage Models
- AF161-110 Ultra-Wideband Structurally Integrated Antenna Architectures
- AF161-111 Manufacturability Improvements for Highly Integrated Monolithic Exploding Foil Initiator
- AF161-112 Armament Life-cycle Status Monitoring Device
- AF161-113 Direct Measurement of Protection System Breakdown and Corrosion Processes within Aircraft Structures
- AF161-114 Alternative Nondestructive Testing Inspection Method of In-service Aircraft Bolts and Wheels
- AF161-115 Direct Measurement of Bondline Temperature During Composite Repair/Fabrication
- AF161-116 Rapid, Local Characterization of the Fatigue Crack Growth Behavior
- AF161-117 Automated High Speed Grind for- High Pressure Compressor Blade Repair
- AF161-118 Blade Repair of Integrally Bladed Disks (IBDs)
- AF161-119 Non-Destructive Inspection for Repaired Integrally Bladed Disk Airfoils
- AF161-120 Development of a High-Temperature Bond Coat for Environmental Barrier Coatings on SiC/SiC Ceramic Matrix Composites (CMCs)
- AF161-121 NDI Tool for Heat Damage Detection in Composites
- AF161-122 Novel Moderate Temperature Polymeric Absorbing Material
- AF161-123 MQ-9 Lightweight Anti-Ice/De-Ice Solution
- AF161-124 Accelerated Adhesive Cure for Nutplate Repair
- AF161-125 Self-Referencing Positioning System
- AF161-126 Structural High Power Microwave, Nuclear and Electromagnetic Pulse Protection of Organic Matrix Composite and Ceramic Materials for Munitions
- AF161-127 Chromium-Free Flexible Primer
- AF161-128 Materials Processing for Heterogeneous Integration of Optical Isolators
- AF161-129 Certification Modeling for Composites with Voids and Wrinkles for Engines and Structures
- AF161-130 Innovative Application and Modifications of Scanning Kelvin Probe Technologies for Measurement of Coating Degradation and Detection of Corrosion
- AF161-131 Airborne Graph Analytics Applications for Multi-sensor Fusion and Integration
- AF161-132 Fully-Adaptive Radar Modeling and Simulation Development
- AF161-133 Radar Agnostic, Low Computation Synthetic Aperture Radar (SAR) Automatic Target Recognition (ATR)
- AF161-134 Low Profile Multiband Airborne Satellite Communications (SATCOM) Antenna
- AF161-135 Lightweight Infrared Search and Track Systems
- AF161-136 Deployable Lightweight Upper Air Sensing System
- AF161-137 Wideband Efficient Dual Polarized High Frequency (HF) Communication Antenna
- AF161-138 Cognitive Processing & Exploitation of 3D Laser Imaging Detection & Ranging (LIDAR) Imagery Data
- AF161-139 Automated Target Recognition (ATR) Detection from Laser Imaging Detection and Ranging (LIDAR) Data
- AF161-140 Multi-Attribute Circuit Authentication and Reliability Techniques

AF161-141 Integrated Circuit Authentication and Reliability Tool and Techniques  
 AF161-142 Integrated Circuit (IC) Die Extraction and Reassembly  
 AF161-143 Electronic Image Stabilization for Staring Infrared Search and Track (IRST) Sensors  
 AF161-144 Continuous High Pulse Repetition Frequency (HPRF) Mode for Anti-Access/Area Denial (A2AD)  
 AF161-145 Compact Wideband Direction Finder  
 AF161-146 V-Band Terminal Low Noise Amplifier  
 AF161-147 High Performance Global Positioning System (GPS) M-Code Acquisition Engine  
 AF161-148 Q-Band Uplink Solid State Power Amplifier (SSPA)  
 AF161-149 Synergistic/Combine Radio Frequency/Electro-Optical (RF/EO) Processing for Synthetic Aperture Imaging (SAR)  
 AF161-150 Cloud Services for Trustworthy Microelectronics Assurance  
 AF161-151 Automated 3D Reconstruction of a Scene From Persistent Aerial Reconnaissance Video at High Zoom  
 AF161-152 Broadband Beam Steering Devices for Midwave Infrared (MWIR)  
 AF161-153 Fusion of Kinematic and Identification (ID) Information  
 AF161-224 Hypersonic weapon airframe simulator for thermal loading and structural vibration

## ARMY

A16-001 Reduced-Order Inflow Model for Propeller-Airframe Flow Interaction Noise Assessment  
 A16-002 Metal Matrix Composite Bearing Liner Installation for Rotorcraft Drive Systems  
 A16-003 Rotorcraft Chaff Dispense Modeling  
 A16-004 High-Strain Capable, High-Strength Composites  
 A16-005 Three-Dimensional Imagery Presentation from Multiple Aircraft Sensors  
 A16-006 Printable Materials with Embedded Electronics and Radio Frequency Components  
 A16-007 Innovative Hypervelocity Control Techniques for future Army Aerospace Vehicle  
 A16-008 Dynamic Vehicle Modeling Composed of Mechanical and Thermal Interaction with High-Resolution Synthetic Scenes  
 A16-009 Laser Source with Variable Pulse Width Capability  
 A16-010 Colloidal quantum dots as the fluorescent penetrant for nondestructive examination of surface flaws  
 A16-011 Multimodal trace explosive detection at stand-off distances  
 A16-012 Multimodal nondestructive evaluation of internal surfaces of holes in steel structures  
 A16-013 Research in Tool Shape Optimization for Electrochemical Machining  
 A16-014 Laser Nanostructured Surfaces for Armament Applications  
 A16-015 Innovative, shock-load resistant Pulsed Power supply.  
 A16-016 High-strength Nanostructured Silver for Shape Charge/EFP Liner Applications.  
 A16-017 High Quality Factor, Thin-Film, Electrically Tunable Varactors and Filters  
 A16-018 Development of a Non-Contact Transmission for Helicopter Applications  
 A16-019 Bone Conduction Audio & Vibrotactile Transducer for Dual-Use Communication  
 A16-020 Low-Loss Commercial Deposition Technology for Thick Ferrites and Ferrite/Insulator Films on Printed Circuit Boards  
 A16-021 Electronic grade, single crystal or large-grain polycrystalline diamond wafer development.  
 A16-022 Development of Lightweight Heat Exchangers for Man-Portable Battery Recharging System  
 A16-023 Processing of Metallic Scrap Materials for Battlefield Additive Manufacturing  
 A16-024 Development of a high resolution long-wave infrared (LWIR) Polarimetric imaging system for long range human identification  
 A16-025 On-Demand Property Modification for Performance Enhancement of Adaptive Systems  
 A16-026 Optical Thin Film Technologies for High Energy Lasers  
 A16-027 Cyber Battlefield Operating System Simulation Tools for LVC Simulations  
 A16-028 Miniature, software-defined Man-Portable Doppler Radar (MPDR) for Atmospheric Measurement  
 A16-029 Computationally Driven Development of Energy Absorbing Materials and Manufacturing Processes for Rotorcraft  
 A16-030 Mode 5 Identification Friend or Foe (IFF) simulation and subsequent RF injection  
 A16-031 Forest/Jungle Positioning Based on Geo-Registered Images from Foliage Penetrating Radar  
 A16-032 Innovative X-Band Antenna Architecture for BFT 3  
 A16-033 Multi-Band Body Wearable Antenna  
 A16-034 Open Architecture Antenna Controller for Directional MANET  
 A16-035 Multi Product UHF L-band System Extension (MPULSE)  
 A16-036 Mission Command of Micro-Robot Swarms: How to select individual agent actions so as to evoke a specific emergent swarm behavior  
 A16-037 Predicting, Prognosticating, and Diagnosing via Heuristics and Learned Patterns  
 A16-038 Superimposing Computer-Generated Imagery within Mission Command Environments.



A16-039 Thin Film High-k Dielectric Semiconductor Materials Development for IRFPAs  
 A16-040 Digital Readout Integrated Circuits With Efficient, Low Power On-chip Data Compression Development  
 A16-041 Use of Augmented Reality in Experimentation with New Equipment Training for Electro-Optic Infrared (EOIR) Sensors  
 A16-042 Extended Short-Wavelength Infrared (SWIR) Focal Plane Arrays (FPA) for Hyperspectral Imaging  
 A16-043 Enterprise Enabled Intelligent Agents to Optimize Intelligence, Surveillance, and Reconnaissance (ISR) Collection  
 A16-044 Simple Cognitive Based Visualization  
 A16-045 Portable Ultraviolet Raman Imaging Spectrometer for Explosives Detection  
 A16-046 High Conductivity Carbon Microfibers for Infrared Obscuration  
 A16-047 Leveraging Networked Mobile Devices to Improve Terrain Analysis and Intelligence Preparation of the Battlefield  
 A16-048 Heuristic-based Prognostic and Diagnostic Method for Installations  
 A16-049 Conservation and Maintenance of Trauma Injured Tissues for Autologous Repair and Reconstruction  
 A16-050 On-Demand Cell and Tissue Biologics for Mass Casualty Response  
 A16-051 Particulate delivery system for next-generation malaria vaccine  
 A16-052 Semi-Autonomous Airway Management Device  
 A16-053 Secure Wireless Disposable Pulse Oximeter Patch that Generates a PPG Waveform  
 A16-054 Machine Learning & Medical Predictive Algorithm for Medical Applications on End User Devices  
 A16-055 Miniature, point-of-care device for establishing sterile connections in combat environments  
 A16-056 Portable Occult Hemorrhage Detector and Resuscitation System  
 A16-057 IND-Enabling Studies for Development of a Novel Therapeutic Agent for the Treatment of Combat-Related Posttraumatic Stress Disorder  
 A16-058 Device Solution to Enhance Vascular Access by Reducing Pain and Simplifying Procedure  
 A16-059 Effective targeted treatment of peripheral neuropathy  
 A16-060 Visual and Physical Footprint Reduction of Parachutes on the Ground  
 A16-061 Continuous Mode Conveyor Cooking Appliance for Unitized Group Rations (UGR-A) for Military Field Feeding  
 A16-062 High Pressure Resistant, Non-Powered, Flexible Chemical/Biological Protective Closure System  
 A16-063 Adjustable Reusable Platform for Expeditionary Military Shelters  
 A16-064 Biofidelic Headform for Evaluation of Head Protection Against Blast, Sound and Blunt Trauma Threats  
 A16-065 Nanostructured Metal Alloy for Individual Armor  
 A16-066 Solid State High Voltage Switching Device for Multi-Point Initiation  
 A16-067 Next Generation Materials for Armor Piercing (AP) Small Caliber Projectiles  
 A16-069 Airborne Based Sense and Avoid (ABSAA) Sensor for Tracking Non-cooperative Aircraft for RQ-7 Shadow and Larger UAS  
 A16-070 The Internet of Things for Body Area Networks  
 A16-071 Back Extraction Blast Seat  
 A16-072 In-Field Repair Procedure for Fiber-Reinforced Composite Structures  
 A16-073 Abrams Engine Stall Detection Sensor  
 A16-074 Two-Speed Final Drive for Recovery Vehicle  
 A16-075 Synthetic Megacity Representation in Army Modeling and Simulation (M&S) Environments  
 A16-076 Augmented/Mixed Reality for Force-on-Force Combat Casualty Care Training  
 A16-077 Micro-Electro-Mechanical Systems (MEMS) for Image Stabilization in Small Missiles  
 A16-078 Repurposed Software Programmable Radio Technology to Support Flexible Missile Uplink/Downlink Implementations  
 A16-079 High Bandwidth Redundant Communication Links for Small Satellites  
 A16-080 High Power Direct Diode Laser  
 A16-081 Advanced Reverse Osmosis Elements  
 A16-082 Structural Battery Development for Military Vehicle Applications  
 A16-083 Laser Protection for Day Cameras  
 A16-084 High Power Density Diesel Engine Piston Temperature Measurement System  
 A16-085 Lifecycle Test Optimization  
 A16-086 High Fidelity Simulator for Hardware-in-the-Loop Testing  
 A16-087 Gallium Nitride (GaN) based 28 VDC Circuit Protection and Distribution  
 A16-088 Gallium Nitride (GaN) based 28 VDC to 120 VAC Inverter  
 A16-089 Robotic/Automated Occupant Assist of Unmanned Ground Vehicles

**NAVY**

- N161-001 Mid Frequency Active Sonobuoy
- N161-002 Alternative Positioning, Navigation and Timing (PNT) Technologies for Global Positioning System (GPS)-Degraded and GPS-Denied Operation
- N161-003 Aerial Refueling Tanker and Receiver Aerodynamic Interaction Modeling and Simulation
- N161-004 Maritime Traffic Model Aided Tracking
- N161-005 Compact Ultraviolet (UV) Laser Emitter in the 320-355 Nanometer (nm) Spectral Range
- N161-006 Large Aperture Agile Scanning Mirror
- N161-007 Immersive Parachute Descent Procedure, Malfunction and Decision-Making Training System
- N161-009 Innovative Sensing Fasteners for Aircraft Fatigue Monitoring
- N161-010 Novel Method to Utilize Multi-scale Physics-based Technique for Crack Path Determination in Fiber-reinforced Composites
- N161-011 Turbomachinery Distortion Characterization by Non-intrusive Measurement Methods
- N161-012 Next Generation Lithium-ion (Li-ion) Batteries (NGLB) with Novel High Energy Anode Architectures
- N161-013 Image Correspondence Figure of Merit (FOM)
- N161-014 Robust Electronics for Aircraft End Speed Indicator
- N161-015 Collaborative Undersea Warfare Mission Planning for Manned and Unmanned Vehicles
- N161-016 iPhone Operating System (iOS) Framework and Application Development for Electronic Kneeboard
- N161-017 Efficient On-Aircraft Composite Repair Process Requiring Minimal Support Equipment
- N161-018 Physics-Based Maritime Target Classification and False Alarms Mitigation
- N161-019 Multi-Frequency Shock Survivable Fuze Components
- N161-020 Human Computer Interfacing (HCI) for Autonomous Detect and Avoid (DAA) Systems on Unmanned Aircraft Systems (UAS)
- N161-021 Variable Amplitude Passive Aircraft Vibration and Noise Reduction
- N161-022 Shaped Radome and Embedded Frequency Selective Surface Modeling for Large-Scale Platforms
- N161-023 Sinking Hose System for Amphibious Bulk Liquid Transfer System (ABLTS)
- N161-024 Ruggedized, Condition-Based Maintenance for Vacuum Insulation Systems
- N161-025 Digital Early Warning Receiver (EWR) for the Next Generation Submarine Electronic Warfare (EW)
- N161-026 Fault Current Limiting (FCL) Distribution Cable
- N161-027 Shallow Water Communications for Mine Warfare
- N161-028 Advanced Persistent Cyber Threat Anomaly Detection
- N161-029 Shipboard Cabling using Rugged Wavelength Division Multiplexing
- N161-030 Safe High Density Undersea Power Source
- N161-031 Efficient, Low-Loss Combiner Technology for Affordable Transmit and Receive Module Manufacturing
- N161-032 Tactical Video Distribution to Shipboard Consoles, Video Walls, and Tablets
- N161-033 Low Power Fiber-based Laser Range Finder
- N161-034 Radio Frequency over Fiber (RFoF) for the Next Generation Submarine Electronic Warfare (EW) System
- N161-035 Underwater Near Field High Data Rate Non-Acoustic Communications
- N161-036 Reduced Cost Fabrication of Optical Sapphire Hyper-hemispheres for Submarine Masts
- N161-037 Versatile Robotic Mission Module Mover (VRM3)
- N161-038 Shipboard Additive Manufacturing (AM)/3D Printing
- N161-039 Extremely Small, High Performance Intelligence, Surveillance, and Reconnaissance (ISR) Payloads for Expendable Undersea Platforms
- N161-040 Advanced Materials for Carbon Dioxide (CO<sub>2</sub>) Capture
- N161-041 Guided Missile Submarine SSGN Seawater System Antifouling
- N161-042 Theater Multi-Mission Planner
- N161-043 Automated Verification and Validation for Distributed Testing
- N161-044 OHIO Class External Hull Antifouling
- N161-045 Coastal Battlefield Reconnaissance and Analysis (COBRA) Hardware In The Loop and Software Sensor Simulator
- N161-046 Ceramic-Metal Joining for Hypersonic Vehicle and Missile Components
- N161-047 Lithium Battery Early Warning Fault Indication System
- N161-048 Miniaturized Electric Actuation System
- N161-049 Joint Tactical Radio System (JTRS) Compliant Anti-Jam Waveform for Littoral Combat Ship (LCS) Unmanned Vehicle Beyond Line of Sight
- N161-050 Undersea Domain Multi-level Security Data Miner
- N161-051 Modular Expendable Electronic Warfare (EW) Decoy Buoy for Undersea Platforms

- N161-052 Advanced Heat Spreader Technology for Gallium Nitride (GaN) Monolithic Microwave Integrated Circuits (MMICs)
- N161-053 Modular Tethered Antennas for Undersea Platforms
- N161-054 Maritime Electromagnetic Maneuver Warfare (EMW) Environmental Sensing
- N161-055 Imaging through Fog
- N161-056 Intuitive, High Confidence Human-Machine Interface Symbolology for Carrier Landing
- N161-057 Short-Wave Polarimetric Imager
- N161-058 Computer-Aided Cryptographic Algorithm Design and Exploration Workbench
- N161-059 Very High Powered, Low Frequency Underwater Projectors
- N161-060 Measuring and Assessing Maneuver Squad Leader Adaptability
- N161-061 Non-aqueous Environmentally Benign Surface Preparation for Aluminum Pre-treatment Processes
- N161-062 Low Size, Weight, Power and Cost (SWaP-C) Cryogenic Heat Exchangers based on Highly Anisotropic Materials
- N161-063 High Energy, High Repetition Rate, non-chirped pulse amplification (CPA), Ultra Short Pulsed Laser (USPL) Systems
- N161-064 Development of a Portable Platelet Apheresis Machine
- N161-065 Ocean Sensing Lab on a Chip
- N161-066 Medium Voltage Silicon Carbide Power Components
- N161-067 Novel Materials and Components for New Liquid Monopropellant Propulsion Systems
- N161-068 Low Probability of Detection Acoustic Communication
- N161-069 Effective Crack Arrestors for On-Board Fatigue Crack Repair of Aluminum Ship Structures
- N161-070 Retrofitting Code into Binary Executables and Firmware to Add New Functionality for Embedded Systems
- N161-071 Additive Manufacturing Development of Naval Platform Heat Exchangers
- N161-072 Expeditionary Solid Oxide Fuel Cell

#### **DARPA** (Defense Advanced Research Projects Administration)

- SB161-001 Rapid Assembly and Transfer Techniques for Large DNA Constructs
- SB161-002 Miniaturized Wireless Microscope and Tissue Diagnostics
- SB161-003 Rugged, chip-scale, optical frequency combs for real-world applications
- SB161-004 Building Trustworthy Software Systems using Big Code
- SB161-005 High Dynamic Range Atomic Magnetic Gradiometer
- SB161-006 Long Link Range Maritime Communications
- SB161-007 Persistent Platform in Geosynchronous Earth Orbit

#### **CBD** (Chemical and Biological Defense)

- CBD161-001 Dual-Purpose Biocidal and Chemical Warfare Agent/Reactive Textile Finish
- CBD161-002 Development of Chemical and Biological Aerosol and Liquid Repellent Coatings
- CBD161-003 Dermal Medical Countermeasures for Chemical Weapons Exposure
- CBD161-004 Medical Countermeasure Development for Viral Induced Encephalitis Using Single Domain Antibodies
- CBD161-005 Smartphone Application for Mask Sizing and Projecting Quantitative Fit
- CBD161-006 Contaminated Materiel Transfer Case

#### **DHP** (Defense Health Program)

- DHP16-001 Warrior Health Avatar
- DHP16-002 Severe Trauma Female Simulation Training System
- DHP16-003 Value Based Monitoring of Cycles of Care
- DHP16-004 Automated Vision Tester Technology Development for Aircrew Clinical Vision Screening
- DHP16-005 Iron Status Determination Point-of-Care Device
- DHP16-006 Diagnostic device for detecting biomarkers of early multiorgan injury in saliva
- DHP16-007 Creating Sterile Water for Injection (SWFI) at/near Point of Injury (POI)
- DHP16-008 Selective Brain Cooling for Traumatic Brain Injury
- DHP16-009 Selective Aortic Arch Perfusion Technologies for Hemorrhage-induced Cardiac Arrest
- DHP16-010 Filtration technologies for bridge dialysis in austere medicine

**DLA (Defense Logistics Agency)**

- DLA161-001 Manufacturing Improvements for DLA Lithium Batteries
- DLA161-002 Aircraft Alternative Braking System for Reduced Cost of Sustainment
- DLA161-003 Economically Recovering Rare Earth Materials
- DLA161-004 Advanced Technologies for Smart Connected Logistics

**SOCOM (Special Operations Command)**

- SOCOM16-001 Alternative or Redundant Global Positioning System Navigation
- SOCOM16-002 Environmentally Stable Portable Point of Care Blood Analyzer
- SOCOM16-003 Next Generation Identity Management Technologies / Tools
- SOCOM16-004 Optically Transparent Tapered Resistive Films
- SOCOM16-005 Wide Bandwidth High Frequency Digital Radio

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- AF161-108 Innovative, Cost-Effective Techniques for Antenna Electronic Beam Steering
- AF161-109 Develop Urban Target Cumulative Structural Damage Models
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- AF161-130 Innovative Application and Modifications of Scanning Kelvin Probe Technologies for Measurement of Coating Degradation and Detection of Corrosion
- AF161-131 Airborne Graph Analytics Applications for Multi-sensor Fusion and Integration
- AF161-132 Fully-Adaptive Radar Modeling and Simulation Development
- AF161-133 Radar Agnostic, Low Computation Synthetic Aperture Radar (SAR) Automatic Target Recognition (ATR)
- AF161-134 Low Profile Multiband Airborne Satellite Communications (SATCOM) Antenna
- AF161-135 Lightweight Infrared Search and Track Systems
- AF161-136 Deployable Lightweight Upper Air Sensing System
- AF161-137 Wideband Efficient Dual Polarized High Frequency (HF) Communication Antenna
- AF161-138 Cognitive Processing and Exploitation of 3D Laser Imaging Detection and Ranging (LIDAR) Imagery Data
- AF161-139 Automated Target Recognition (ATR) Detection from Laser Imaging Detection and Ranging (LIDAR) Data
- AF161-140 Multi-Attribute Circuit Authentication and Reliability Techniques
- AF161-141 Integrated Circuit Authentication and Reliability Tool and Techniques



- AF161-142 Integrated Circuit (IC) Die Extraction and Reassembly  
 AF161-143 Electronic Image Stabilization for Staring Infrared Search and Track (IRST) Sensors  
 AF161-144 Continuous High Pulse Repetition Frequency (HPRF) Mode for Anti-Access/Area Denial (A2AD)  
 AF161-145 Compact Wideband Direction Finder  
 AF161-146 V-Band Terminal Low Noise Amplifier  
 AF161-147 High Performance Global Positioning System (GPS) M-Code Acquisition Engine  
 AF161-148 Q-Band Uplink Solid State Power Amplifier (SSPA)  
 AF161-149 Synergistic/Combine Radio Frequency/Electro-Optical (RF/EO) Processing for Synthetic Aperture Imaging (SAR)  
 AF161-150 Cloud Services for Trustworthy Microelectronics Assurance  
 AF161-151 Automated 3D Reconstruction of a Scene from Persistent Aerial Reconnaissance Video at High Zoom  
 AF161-152 Broadband Beam Steering Devices for Midwave Infrared (MWIR)  
 AF161-153 Fusion of Kinematic and Identification (ID) Information  
 AF161-224 Hypersonic weapon airframe simulator for thermal loading and structural vibration  
 AF16-AT01 Wafer-Level Electronic-Photonic Co-Packaging  
 AF16-AT02 Noise Measurements in the Atmosphere  
 AF16-AT03 Flexible Sensor Network and Its Embedded Integrated Circuits for Structural Health Monitoring  
 AF16-AT04 Investigating Satellites Cataloged as Debris (ISCAD)  
 AF16-AT05 Prototype for Rapid Reconstitution for Ground-based Space Situational Awareness Capability for Near-geosynchronous Objects  
 AF16-AT06 Three-dimensional Measurement of Fluid Density Distribution  
 AF16-AT07 Streaming Model for Field-of-Light Displays (SMFoLD)  
 AF16-AT08 Training for Resilient System Design  
 AF16-AT09 Coordination and Performance Metrics in Command and Control Environments  
 AF16-AT10 Securing the Internet of Things (IoT)  
 AF16-AT11 Diversified Hypervisors  
 AF16-AT12 Heterogeneous Data Discovery  
 AF16-AT13 High-Speed Measurements of Dynamic Flame Stabilization Processes in High-Pressure Combustion Systems  
 AF16-AT14 Modeling and Simulation of Lean Blowout in High-Pressure Swirl-Stabilized Combustors  
 AF16-AT15 Experimentally Derived Scaling Laws from Spatiotemporally Resolved Measurements in High-Pressure Combustors  
 AF16-AT16 Novel Approaches for Integrated Controls with TMS and Power  
 AF16-AT17 Packaging and Assemblies for High-temperature Intelligent Aerospace Controls  
 AF16-AT18 Low-cost, Reliable, and Long-life Components for the Next-Generation Aerospace Controls  
 AF16-AT19 Embedded Computing Systems Runtime Integrity Protection  
 AF16-AT20 Development of Room-Temperature Ionic Liquids for Reversible Electroplating  
 AF16-AT21 Space Object Energy Parameter and State Inference To Support Object Detection, Tracking, Identification and Classification  
 AF16-AT22 Infrared Light Emitting Diode Arrays for Target Image Projection  
 AF16-AT23 Modeling and Simulation of Structural Energetic Materials  
 AF16-AT24 Transient Aerothermoelastic Experimental Response of a Full-Scale Curved Panel  
 AF16-AT25 Small Scale Research Molecular Beam Epitaxy for Material Development  
 AF16-AT26 Novel Polymer-Derived Carbide and Boride Refractory Ceramics  
 AF16-AT27 Properties Of Structural Composite Materials Using Novel Carbon Fibers  
 AF16-AT28 Laser and Rapid-thermal Crystallization of Low-defect GeSn and SiGeSn Layers for High Performance Infrared Detectors and Integrated Si-based Optoelectronic Devices  
 AF16-AT29 Information Theory Models for Multi-Sensor Design of Signature Exploitation Systems  
 AF16-AT30 Space-Division-Multiplexing (SDM) Components for Infrared (IR)

## ARMY

- A16A-T001 Chemical Kinetic Pathway Effects in Turbulent Reacting Flows  
 A16A-T002 Solid State Additive Manufacturing of Titanium Alloys  
 A16A-T003 Green Diode Lasers (480-550 nm Spectral Regime)  
 A16A-T004 Acoustically/Vibrationally Enhanced High Frequency Electromagnetic Detector for Buried Landmines  
 A16A-T005 Overcoming RTOS Barriers to Deployment of Innovative Real-Time/Embedded Systems  
 A16A-T006 Situational Awareness System  
 A16A-T007 Quantification Model and Systems for Assessing and Developing Resilient Wireless Communication Operation

- A16A-T008 Field Drug Identification Kit
- A16A-T009 Metamorphic Buffer Layer Growth for Bulk InAs(x)Sb(1-x) LWIR Detectors
- A16A-T010 Tactical Immune System (TIS)
- A16A-T011 Nadir-Looking Synthetic Aperture Radar (NadirSAR)
- A16A-T012 Man-Portable and Fieldable Mass Spectrometer for Sequencing Peptides
- A16A-T013 Beliefs, Values, Interests and Practices of Identities, Networks, Groups for Planning & Analysis
- A16A-T014 Technologies to Target Circadian Rhythm Disruption in PTSD
- A16A-T015 Manufacturing of Flame Resistant (FR) Combat Printed Nonwoven Material
- A16A-T016 Spectrum Analyzer Using Spintronic Radar Arrays

## NAVY

- N16A-T001 High Hesitivity Magnetic Materials for Magnetic Toroid and Flat Dipole Antennas
- N16A-T002 Methods for Actionable Measures of Absolute Cognitive Workload
- N16A-T003 Innovative Multi-scale/Multi-physics based Tool for Predicting Fatigue Crack Initiation and Propagation in Aircraft Structural Components using Phase Field Model Technique
- N16A-T004 Quantifying Uncertainty in the Mechanical Performance of Additively Manufactured Parts Due to Material and Process Variation
- N16A-T005 Air Cycle Machine Low Friction, Medium Temperature, Foil Bearing Coating
- N16A-T006 Novel, High-Efficiency, Light-weight, Flexible Solar Cells as Electrical Power Generation Source
- N16A-T007 Optimized High Performance Stainless Steel Powder for Selective Laser Melting Additive Manufacturing (AM)
- N16A-T008 Novel Separator Materials for Achieving High Energy/Power Density, Safe, Long-Lasting Lithium-ion Batteries for Navy Aircraft Applications.
- N16A-T020 Embedded Space Analytics
- N16A-T021 High Performance Energetic Propellant Ingredient Process Research and Development
- N16A-T022 Integrated Computational Material Engineering Approach to Additive Manufacturing for Stainless Steel (316L)
- N16A-T023 Epitaxial Technologies for Gallium Oxide Ultra High Voltage Power Electronics
- N16A-T024 Multi-Access Optical System for Communications and Sensing Applications
- N16A-T025 Hybrid Unmanned Air / Underwater Vehicle for Explosive Ordnance Disposal (EOD) and Mine Countermeasures (MCM)

## DTRA (Defense Threat Reduction Agency)

- DTRA16A-001 Rapid Development of Weapon Payloads via Additive Manufacturing
- DTRA16A-002 Self-fragmenting Structural Reactive Materials (SF-SRM) for High Combustion Efficiency
- DTRA16A-003 Innovative Mitigation of Radiation Effects in Advanced Technology Nodes
- DTRA16A-004 Compact Laser Drivers for Photoconductive Semiconductor Switches