

Department of Defense
Small Business Innovation Research
&
Small Business Technology Transfer Programs



Fiscal Year 2016 Annual Report Submission
on
Commercialization Readiness Program (CRP)

March 2017

**Commercialization Readiness Program
FY16 Report**

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The Commercialization Readiness Program (CRP) is part of the SBIR and STTR Reauthorization Act of 2012 (P. L. 112-81, Section 5001) which extends the program through September 30, 2017. The purpose of the Commercialization Readiness Program (CRP) is to accelerate the transition of SBIR and STTR funded technologies to Phase III, especially those that lead to programs of record and fielded systems. This can be done through activities that enhance the connectivity among SBIR and STTR firms, prime contractors, and DoD science & technology and acquisition communities. It can also be accomplished by improving a SBIR or STTR firm's capability to provide the identified technology to the Department, directly or as a subcontractor.

3.2 Air Force Commercialization Readiness Program (CRP)

3.2.1 Air Force CRP Accounting of Funds

Air Force Admin Pilot CRP Allocation			
SBIR FY15 Budget	FY15 CRP Budget (1% of Total SBIR Budget)	FY15 CRP Obligations Made in FY15	FY15 CRP Obligations Made in FY16
\$284.19	\$2.84	\$2.84	\$0
SBIR FY16 Budget	FY16 CRP Budget (1% of Total SBIR Budget)	FY16 CRP Obligations Made in FY16	FY16 CRP Commitments Planned in FY17
\$292.85	\$2.92	\$2.92	\$0

3.2.2 Air Force CRP Funding Narrative

Air Force FY16 CRP funds were obligated to continue the Small Business Innovation Research (SBIR) Transition Support Contract with BRTRC (\$2.92M).

3.2.3 Air Force CRP Program Initiatives and Activities

The CRP mission is to accelerate technology maturation and transition through new initiatives that address barriers in bringing SBIR/STTR technologies to the marketplace. The Air Force CRP approach brings together key stakeholders utilizing Air Force CRP Technology Analyst (TAs) to 1) help focus SBIR/STTR topics on high-priority technology needs, and 2) work with small businesses, system program offices (SPOs), SBIR Program Managers, Technical Points of Contact (TPOCs), and industry technology integrators to identify transition objectives, tasks, timing, responsibilities, and funding sources and document in non-binding SBIR Technology Transition Plans (STTPs). Maturation of high potential SBIR/STTR projects is also supported and, until the last quarter of FY16, was documented in non-binding SBIR Technology Maturation Plans (STMPs). After an improvement initiative and review of current processes,

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the findings resulted in replacing the STMP process with a more streamlined SharePoint workflow process. Both processes accelerate SBIR/STTR technologies into Phase III applied research (6.2) or advanced development (6.3) projects.

The fifteen Air Force TAs remain fully engaged as the program's boots on the ground supporting the Air Force Centers/PEOs and AFRL Technology Directorates. Three TAs support the Air Force Life Cycle Management Center (AFLCMC) located at Eglin AFB, FL; Hanscom AFB, MA; and Wright-Patterson AFB (WPAFB), OH. Three TAs support the Air Force Sustainment Center located at Hill AFB, UT; Tinker AFB, OK; and Robins AFB, GA. Two TAs support the Space and Missile Systems Center, one TA supports the Air Force Nuclear Weapons Center and the Air Force Test Center, one TA supports the Joint Strike Fighter program, and five TAs support AFRL's SBIR/STTR maturation efforts at its technology directorates two located at WPAFB, OH; one at Eglin AFB, FL; one at Kirtland AFB, NM; and one in Rome, NY. With changing leadership and policies, the TAs remain a constant resource for the PMs at these Centers/PEOs and TDs.

A new initiative for FY16 included a push to increase the development and marketing of program transition successes. Through this initiative, the program increased annual success reporting, established a video team and started to create a repository of Air Force SBIR/STTR success videos to share with higher headquarters, other agencies, and a broad range of current as well as potential stakeholders. These videos as well as other program messages are distributed via conventional means (websites and publications) and an expanding range of social media outlets such as Twitter, Facebook and YouTube. In FY 16 seven videos were developed and many more have been identified for FY17. These videos contain testimonials by small businesses and Air Force stakeholders to promote the goals of the program from Innovation to Transition.

Successes come from numerous sources, but a successful approach the Air Force CRP continues to utilize tailored and unique meetings and events to bring key stakeholders together and provide solutions to Air Force warfighter needs. Technology meetings hosted at MDC facilities, benefit all stakeholders, bringing small business capabilities to the larger defense industries, assisting small businesses with visibility into new markets, and increasing return on investment opportunities for the Air Force. In FY16, SBIR/STTR CRP Industry Technology Interchange Meetings (TIMs) were conducted with 8 MDCs including ULA, which was new to the portfolio, L-3 Communications, Orbital ATK, The Boeing Company, Lockheed Martin, Raytheon SAS, Rolls-Royce, and Northrop Grumman, which allowed for active engagement between 91 SBIR companies and these MDC partners. For those returning MDCs, five brought new business units to the table, which continues to confirm that these events are widely supported and highly regarded throughout the organizations. Through these events, the Air Force CRP team facilitated over 115 one-on-ones, targeting over 140 different SBIR projects.

Another unique event receiving positive feedback from the Air Force, small businesses, and MDCs is the one-of-a-kind Air Force Small Business Industry Day (SBIDs) executed by the Air Force CRP team. Based on the feedback and results of the previous three events, the Air Force CRP team continued to refine the process and increase its efforts, completing another event

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hosted by the Air Force Space and Missile Systems Center. This event had the largest participation to date, with over 340 attendees from small businesses, MDCs, and multiple government organizations. It should be noted that approximately 23% of the small business represented had never before worked with the Air Force. Also at the SMC event, nine small businesses were selected by the Air Force to brief their capabilities, as well as another 60 firms that were specifically invited by the Air Force to participate. In addition, over 90 one-on-one meetings were conducted regarding upcoming BAAs and potential SBIR projects that could be transitioned into programs of record. The success and support for these events is evident given that the Air Force Test Center requested to host their second SBID in FY17. The Air Force CRP team is also gearing up for an additional SBID with the AFLCMC at Wright Patterson AFB, OH.

In addition, the CRP team supported numerous outreach events to promote the Air Force SBIR/STTR CRP mission, provide assistance and conduct one-on-one meetings with current and potential SBIR companies. The team participated in seven SBA Road Tours focused on reaching small businesses and underserved communities, such as service-disabled and veteran-owned businesses; both SBIR/STTR National Conferences; and several other small business events and initiatives. The Air Force CRP team continues to work closely with the other services to keep up with the changing climate and assist the warfighter through a presence at the Navy Opportunity Forum in Arlington, VA; Beyond Phase II, in San Antonio, TX; and inviting the Navy and DARPA into the TIM process.

3.2.4 Air Force CRP 2014 Achievements and Results

This year, 49 projects were approved for CRP (i.e. funded). Of the 49 approved projects, 31 were STTPs and 18 were STMPs (see Appendix A). Since inception of the pilot, 609 projects were initiated (see Fig. 1). The total SBIR/STTR funding on CRP projects since inception of pilot is \$662.2M and the total non-SBIR/STTR funding on CRP projects since inception is \$2,110.8M. SBIR/STTR funding includes Phase I, Phase II, and enhancements to CRP approved projects. Non-SBIR/STTR funding sources include industry's Independent Research and Development (IR&D), SBIR firm investment, Air Force Programs of Record, AFRL core budget, DoD transition funds, and state small business funds. Twenty-five major contractors participated in STTP/STMP projects.

Since the inception of the program, one hundred-sixteen Air Force SBIR/STTR CRP projects are considered transition successes and are providing significant benefit to the nation's warfighters in improved performance, new capabilities, increased reliability, and cost savings well exceeding the investment (See Fig. 2). Each project meets the technology needs of at least one Air Force system with

Fig. 1 Number of STTPs and STMPs Initiated Since Inception of the Pilot

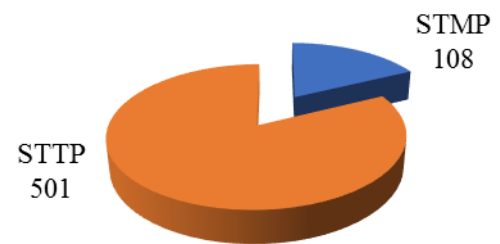
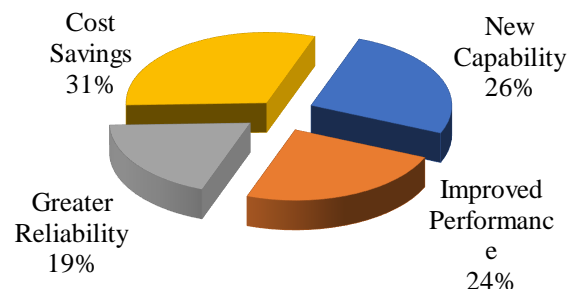


Fig. 2 Benefit to Warfighter from 2016 STTP Successes

(Each STTP provides benefits in multiple areas)



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total cost savings estimated at over \$1B. Eighty-eight of the one hundred-sixteen projects have been reported as successes in the Annual Reports through 2015 and these eighty-eight have continued to mature and yield benefits. During 2016, the following 28 were identified as successes using the DoD SBIR/STTR transition definition - *the production and delivery of products, processes, technologies, or services for sale to or use by the Federal Government or commercial markets*. Each transition success and its benefits are briefly described here:

STTP 2008-70, Optical Physics Co., High Slew Rate Radiation Hardened Star Tracker, AF06-002. Delivered a high performance star tracker with an inertial pointing error of < 1 arc-second at high slew rate and >300 kRad at 10x reduced cost already utilized in a classified mission.

STTP 2009-25, Technical Directions, Inc., Propulsion System for Joint Direct Attack Munition-Extended Range (JDAM-ER), AF05-192. Small low-cost, propulsion turbine needed to extend range of JDAM weapon to 100+ miles. Developed family of various size engines and sold more than 75 to customers including DARPA.

STTP 2010-26, Engineering & Software System Solutions, Inc. (ES3), Development of Pulse Water Strip of Tungsten Carbide HVOF Coatings and Chrome Plating on Landing Gear Components, AF071-317. Environmentally-friendly and more effective removal of Cr+6 chrome plating and HVOF within the Air Force Sustainment Center.

STTP 2010-29, Engineering & Software System Solutions, Inc. (ES3), Development of Cad Plating Replacement with Alkaline Zinc-Nickel Electroplating for Threaded Fasteners/Components, AF081-101. Drop-in corrosion resistance and lubricity equal to or better than toxic cadmium. ES3 now has a \$30M IDIQ to plate parts for AFSC.

STTP 2010-32, Virtual Technology, Handheld Real Time Climatic/Environmental Sensor, AF073-110. Lower cost of visible emissions compliance monitoring at Hill AFB with greater reliability, reduced need for training, and improved data quality. Also successful as a commercial product.

STTP 2011-53, Reynolds Systems, Inc., Micro-chip Development for Weapon Fuzes, AF083-098. Improved electrical foil initiators, survivable in high G environments (hard target impact). Approximately 3,500 manufactured and technology is being incorporated in various products. Expect purchases to continue for the next ten to 20 years.

STTP 2012-08, Engineering & Software System Solutions, Inc. (ES3), Restoration of Dimensional Surfaces/Development of Magnetron Sputtering Aluminum Coatings, AF073-115. Cost savings by restoring aluminum landing gear parts to operational condition. Now successfully sputtering KC-135 nose cylinders at Hill AFB.

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STTP 2012-09, Exquadrum, Inc., Low-Cost Fabrication Methods for Arcjet Heater Segment Development, AF04-287. Sustains unique and extremely critical Air Force Test Center wind tunnel equipment and enables tunnel operation at increased pressures to support all current and future proposed test programs at competitive cost.

STTP 2012-10, Ebert Composites Corp., Hydrophobic/Non-Delaminating Radome Material, AF073-113. Eliminates need for paint or re-surfacing and panels will not delaminate due to abuse, wind impact or bird strikes. Reduces cost and provides 100% reliability at Hill AFB with interest also from the Army.

STTP 2012-11, Aspire Solutions, Inc., Pre-Induction Inspection & Analysis (PII-A), AF073-105. Provides detailed visual work cards to inspectors or mechanics at point of use on a mobile device. Improved maintenance performance and increased reliability for the B-1 at Dyess AFB and Ellsworth AFB will save at least \$7.2 million over five years.

STTP 2012-15, Variation Reduction Solutions, Inc., Affordable Accurate Robot Guidance (AARG), AF091C-001. Automates drilling and inspection for F-35 assembly at Lockheed Martin, a high accuracy hole cell at Warner-Robins, and Boeing 777 assembly to achieve precise tolerances, archiving of data, and \$123M savings for the F-35 program.

STTP 2012-21, Pointwise, Inc., Integrated Overset Meshing and Grid Assembly Capability, AF083-259. Significantly reduces (by up to 50%) manpower for pre-processing of complex computational fluid dynamics (CFD) configurations required with high fidelity CFD software applications, e.g. Overflow, Wind-US, Kestrel, and USM3D.

STTP 2012-26, Aerodyne Research, Inc., Particle Sampling System Designed to Simulate Aging of Aircraft Exhaust Plumes, AF06-302. Measures non-volatile particle matter emissions of the F135 engine and eventually other military turbine engine applications to ensure EPA compliance. Now in draft as an SAE Aerospace standard.

STTP 2012-48, Engineering & Software System Solutions, Inc. (ES3), Improved Landing Gear Grinding/Finishing (ILGF) Methods, AF093-203. Now producing parts for various weapon systems at Hill AFB. Belt grinding prevents grinding burns, increases grinding efficiency, and eliminates costly and time consuming wheel changes.

STMP 2012-A, VEXTEC Corporation (Vanderbilt University), Development of Multidisciplinary, Multi-Fidelity Analysis and Integration of Aerospace Vehicles, AF08-BT03. Transitioned to an Air Force Research Laboratory 6.2 Applied Research Program to predict the fatigue life of aircraft structural components.

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STTP 2013-08, Trident Systems, Inc. Voice and Video Cross Domain Solution (V2 CDS), AF081-028. Provides scalable, secure cross-domain voice and video to enable users between differently classified networks to communicate directly. V2 CDS, recently installed at U.S. European Command in Stuttgart, Germany, significantly improves mission effectiveness and reduces current cost of redundant hardware.

STTP 2013-20, Stottler Henke Associates, Inc., Intelligent Space Surveillance Network Scheduling Applications Using Artificial Intelligence Techniques, AF093-078. Provides satellite communications de-confliction and scheduling for the 50th Space Wing with faster response to distressed vehicles and tactical missions and reduced staff.

STTP 2013-25, Ridgetop Group, Inc., Expert Troubleshooting and Repair System, AF093-208. Saves \$2 million per year per “bad actor” Assembly in direct maintenance for Electronic Warfare (EW), communications, and navigation systems by reducing No Fault Found / Could Not Duplicate occurrences. Total savings will exceed \$30M.

STTP 2013-28, Frontier Technology, Inc., Improvement to LCOM ATK for F-35 Model Input, AF06-016. Reduces modeling time and analysis effort for the F-35 JPO to make better decisions more quickly. Helps verify Key Performance Parameter (KPP) requirements and conduct ad hoc analyses to support lifecycle management.

STTP 2013-38, Luna Innovations, Inc., Instrumented Test Coupons and Monitoring System for Improved Material Performance Evaluations, AF112-218. Quantifies coating performance for inhibiting corrosion and environmental cracking to accelerate qualification and reduce the \$5.2 billion annual cost of corrosion for Air Force aircraft.

STTP 2014-10, Kitware, Inc., Video Exploitation Tools, SB082-021. Provides automated target tracking and change detection with a graphical user interface incorporated into Leidos' Advanced Intel Multimedia Exploitation Suite (AIMES) in the Air Force Distributed Common Ground System (DCGS). Air Force SOC is a current user.

STTP 2014-39, Knowledge Based Systems, Inc., Transformation in Maintenance and Repair (XFMR), AF05-265. Provides shop-wide visibility of test stand capabilities. Oklahoma City Air Logistics Center projects an ROI of at least 14:1, a 10-25% reduction in days Mission Impaired Capability Awaiting Parts (MICAP) in B-1 Avionics, and a 5-10% increase in capacity turns and throughput based on a detailed part and work status.

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STTP 2014-43, The Design Knowledge Company, Integrated Civil Engineering Environment – Situation Awareness, AF093-206. Provide a common graphical user interface that allows authorized users to overlay, analyze, and consolidate reporting of geospatial information from multiple base operations monitoring and control systems.

STTP 2014-45, Physical Optics Corporation, Micro Weather Sensor, Ceilometer Integration, SOCOM10-006. Adds the capability to measure cloud height above Physical Optics' Micro Weather Sensor. Now in use with SOCOM and Air Force SOC.

STTP 2014-56, GATR Technologies, GATR FLEX Antenna, MDA05-T021. Provides a lightweight flexible antenna capable of storage/transport by collapsing, folding and/or rolling to meet USSOCOM's need for a compact flyaway satellite communications (SATCOM) terminal. Cubic Corp. acquired GATR Technologies in 2016.

STTP 2014-57, GATR Technologies, Inflatable Tracking Antenna - 2.4 meter, MDA04-088. Will add tracking capability for SOCOM to downlink with low/medium earth orbit satellites and provide special operations forces with high bandwidth access to multi-intelligence data. Cubic Corp. acquired GATR Technologies in 2016.

STTP 2015-02, Architecture Technology Corporation (ATCorp), Spatio-Temporal Analysis in GIS Environments (STAGE), N111-062. Provides user-friendly spatio-temporal statistical analysis in ArcGIS to continue operation into the next generation with less training. The Joint Warfare Analysis Center (JWAC) has taken delivery of two major releases of the STAGE software and developed plans for the next system upgrade.

STTP 2015-03, Metis Design Corporation, Flight Demonstration of a Structural Health Monitoring System, AF03-T017. Detects and interprets panel structural integrity to quickly target repairs, minimize access requirements, prevent continued degradation, reduce replacements, enhance structural safety, and increase aircraft operational life. Appendix A: Air Force

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FY16 Air Force Companies Approved for CRP

Company Name ¹	Project Title	Contract #	Topic #	PEO	Investor, Customer, or Fielded System ²
Technical Directions, Inc.	Propulsion System for Joint Direct Attack Munition-Extended Range (JDAM-ER)	F08630-00-C-0015	AF99-179	Armament	JDAM
CFD Research Corporation	Accurate Insensitive Munitions Modeling Tool Coupling Detailed Chemical Kinetics and Physical Models	FA9101-13-C-0014	MDA06-041	Armament	AEDC Center for Countermeasures
Physics, Materials, and Applied Mathematics Research, LLC	Non-Intrusive Direct Part Marking with Ultrashort Laser Pulses	FA8117-12-C-0002	AF093-191	Armament	Propulsion Sustainment AFLCMC/LPSAAA
Nokomis, Inc.	Advanced Detection of Electronic Counterfeits (ADEC) Minuteman Pilot	FA8650-08-C-1402	AF071-219	Armament	AFRL/RDHA
Physical Optics Corporation	Digital Aircraft Data Storage System	FA8750-14-C-0218	AF132-001	Fighter Bomber	AFLCMC/WW
Toyon Research Corp.	Improved Real Time Geo-Registration Techniques for Airborne Imagery	FA8650-13-C-1593	AF121-139	Fighter Bomber	AFRL/RV
ThermAvant Technologies, LLC	Next-Generation Micro-chip Carrier for Cooling of Satellite Payload Electronics	FA9453-13-C-0029	AF112-057	Fighter Bomber	AFRL/RV
ACTA, Incorporated	Weapon Burial Model for JWS	FA8651-13-C-0154	AF121-097	Weapons	AFLCMC/ENW C
Strategic Analysis Enterprises	Automated Discourse & Sentiment Analysis Engine: Forecasting Dissident, Brand, and Financial Volatility	FA8650-14-C-6515	AF121-033	Weapons	NASIC
Aptima, Inc.	Confined Space Monitoring System for a Safe & Efficient Depot: Worker Health & Readiness Assessment Capability	N00014-12-G-0546	OSD10-CR1	Weapons	402 AMXG/AMXSS
Exquadrum, Inc.	Novel Upper Stage Engine Cycle	FA9300-15-C-2002	AF121-189	Weapons	SMC/LR
Orbit Logic Incorporated	Autonomus On-Board Control of Satellites for Space Superiority	FA9453-13-C-0038	AF112-069	Weapons	SMC SYSW/ENT

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The Design Knowledge Company	Asset Life-Cycle Information Management (ALCIM)	FA8650-10-C-6122	AF083-027	Weapons	AFSC
Conductive Composites	Shielding of Next Generation Munitions Systems	FA8650-14-C-5022	AF131-108	Weapons	AFNWC
Ultra Communications Inc.	Miniature RF Photonic Multi-Channel Transmitter	FA8750-13-C-0024	AF112-043	Weapons	AFRL/RI
Exquadrum Inc.	Towed-Glider Air-Launch System	FA9300-13-C-2010	AF112-181	Weapons	412TW/HCTF
CFD Research Corporation	Molecular Design of Energetic Materials	FA9300-11-C-3004	AF083-125	Weapons	AFRL Rocket Propulsion Directorate
SA Photonics, Inc.	Compact Beam Direction and Tracking System for the Towed Optical Plume Simulator (TOPS)	FA9453-13-C-0031	AF112-059	Weapons	Center for Countermeasures
Atmospheric & Space Technology Research Associates	GPS Autonomous Micro-Monitor (GAMMA)	FA9453-13-C-0035	AF112-065	Weapons	SMC/SYAG/TA
Knowledge Based Systems, Inc.	Echelon-Centric, Logistics integrated Planning, Scheduling, and Execution (ECLiPSE)	FA8117-14-C-0012	AF121-213	Weapons	76 CMXG/ENA
Securboratorion Inc.	Annotated Semantic Engine for information Retrieval (AnSER)	FA8750-15-C-0004	AF13-AT14	Weapons	DTIC
eSpin Technologies, Inc.	AFSC Air Filtration	FA8651-04-C-0338	AF03-121	Weapons	76 MXSG/EN

Notes: ¹ Order listed is in numerical order by STTP/STMP Number and does not convey any prioritization of CRP projects.

² Additional information about Investor, Customer, or Fielded System is available on request.

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3.3 Army Commercialization Readiness Program (CRP)

3.3.1 Army CRP Accounting of Funds

Army SBIR Admin Pilot CRP Allocation			
SBIR FY15 Budget	FY15 CRP Budget (1% of Total SBIR Budget)	FY15 CRP Obligations Made in FY15	FY15 CRP Obligations Made in FY16
\$151,708,861	\$1,517,089	\$ 138K	\$175K
SBIR FY16 Budget	FY16 CRP Budget (1% of Total SBIR Budget)	FY16 CRP Obligations Made in FY16	FY16 CRP Commitments Planned in FY17
\$191,832,007	\$1,918,320	\$195K	\$250K

3.3.2 Army CRP Funding Narrative

At the conclusion of the Army’s CPP support contract, it was decided to combine CRP support into the overall SBIR support contract. Administration of CRP has been managed within the provisions of the Army SBIR support contract effort since 2013.

3.3.3 Army CRP Program Initiatives and Activities

Under the Army’s CRP approach, technical points of contact for all Phase II efforts are encouraged to work with relevant PEOs and the small businesses to identify opportunities where a promising technology has a strong transition potential if technical barriers to PEO adoption are met. Examples of such barriers are need for higher technical maturity, need for additional test articles, and minor specification changes to prototypes to meet PEO designs. These opportunities are vetted by the sponsoring organization and PM SBIR and must include: Technical Director concurrence, tangible investment from the transitioning PEO or other transition partner(s), Statement of Work and Cost Proposal. These requirements ensure that there is real transition opportunity, all stakeholders are in agreement with the approach and investments, and the opportunity can be addressed in a timely manner. and the opportunity can be addressed in a timely manner.

3.3.4 Army CRP 2016 Achievements and Results

In FY16, 22 companies were provided additional funding to address the technical barriers slowing adoption of their technologies by acquisition programs. They were provided a total of \$10.8M above the approximately \$25.3M provided under Phase I and Phase II funding for these efforts. An additional \$4.4M was provided from outside (i.e., non-SBIR) sources as initial

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investments in these CRP efforts. Since the initiation of the Army CRP approach, 115 companies have been provided additional funding. Overall the Army SBIR has provided \$69.7M toward CRP efforts with an additional outside investment of \$57.6M. While too early to provide specifics of success, Army SBIR expects at least a 5:1 return on investment (~\$250M) within the next five years.

Appendix A: Army Small Business Innovation Research Commercialization Pilot Program

FY 2016 Companies Approved for CRP

Company Name ¹	Project Title	Contract #	Topic #	Investor, Customer, or Fielded System ²
Torch Technologies	Rapid Scene Creation for Multispectral Terrain Signature Models and Simulations	W31P4Q-14-C-0009	A12-085	AMRDEC (M)
Steven Winter Associates, Inc	Energy Reducing, Ruggedized, Solar Lighting System	W911QY-13-C-0031	A11-126	NSRDEC
Thermal Storage Systems	Selfpowered Solar Water Heater	W911QY-12-C-0058	A10-168	NSRDEC
Nanosyntex	Lightweight Material for Full-Scale Parachutes	W911QY-13-C-0019	A11-128	NSRDEC
Spectral Platforms	Rapid diagnostic tools for wound infections	W911NF-13-C-0047	A11-021	ARL
NALAS Engineering Services Inc.	Novel Oxidizer for Ammonium Perchlorate Replacement	W31P4Q-14-C-0054	AF103-211	AMRDEC (M)
Creative Engineering Solutions Inc	A Novel Attachment Method for Legacy and Future DoD Vehicles	W56HZV-13-C-0060	A11-061	TARDEC
SAFCell, Inc	Feasibility Study for a Propane Fueled 50 W SAFC System	W911NF-13-C-0076	A12-023	ARL
Advanced Optical Technologies	Optimization of Active Polarimeters for ATR	W909MY-12-C-0023	A11-032	CERDEC
Bridger Photonics	Dual-Mode Continuous-Wave Ladar and Optical Communications System	W9132V-14-C-0002	A12-089	ERDC
Creare, LLC	Physics-Based, High Resolution Soil Strength Prediction	W913E5-14-C-0002	A12-094	ERDC
Busek Company, Inc	Autonomously Adaptable Wireless	W91CRB-	A12-102	PEO-Soldier

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	Power Charging System	14-C-0049		
Spatial Cognition, LLC	Immersive Vision, Data Fusion and Threat Awareness for Enhanced Sensor-to-Shooter Engagement/Targeting	W15QKN-13-C-0001	A11-080	ARDEC
Frontier Performance Polymers Corp	Advanced Lightweight Bomb Suit Facial Protection System	W911QY-12-C-0026	A09-164	NSRDEC
Global Embedded Technologies Inc	Power Control Solution for Electrical System Improvements	W56HZV-13-C-0061	A11-062	TARDEC
CTW Development Company, LLC	Novel Textiles for Use as Friction Buffer on Parachutes	W911QY-14-C-0008	A12-052	NSRDEC
Materials Sciences Corporation	Residual Property Prediction for Damaged Composite Structures (MSC P 4141)	W31P4Q-14-C-0036	A12-083	AMRDEC (M)
GALT LLC	High Efficiency Spectroscopic Angular Imaging via a Compton Camera using Fast Inorganic Scintillators	W15QKN-12-C-0047	A09-136	ARDEC
DIApedia Inc	Advanced Military Footwear System with Composite Orthotic	W81XWH-12-C-0041	A11-109	MRMC
Nano Terra, Inc	A Novel Strategy for Treating Peripheral Nerve Injury	W81XWH-14-C-0064	A13-084	MRMC
Omnitek Partners	Miniaturized Electrical Initiation Systems for Miniature Thermal Batteries	W15QKN-16-C-0025	A07-035	ARDEC
WW Technologies Group	Cost-Effective Mixed-Criticality Systems	W911W6-12-C-0001	AF093-005	AMRDEC (A)

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3.4 Navy Commercialization Readiness Program (CRP)

3.4.1 Navy CRP Accounting of Funds

Navy Admin Pilot CRP Allocation			
SBIR FY15 Budget	FY15 CRP Budget (1% of Total SBIR Budget)	FY15 CRP Obligations Made in FY15	FY15 CRP Obligations Made in FY16
\$261,337	\$2,695	\$1,453	\$1,227
SBIR FY16 Budget	FY16 CRP Budget (1% of Total SBIR Budget)	FY16 CRP Obligations Made in FY15	FY16 CRP Commitments Planned in FY17
\$306,593	\$3,193	\$1,680	\$1,513

3.4.2 Navy CRP Funding Narrative

DON CRP funds were obligated in FY16 (\$2.74 million) for CRP project management/execution including program office support, database management/reporting, contracting, acquisition office assistance, and outreach/prime contractor coordination. CRP funds also supported firm assistance including due diligence, transition planning, risk reduction assessments and planning, manufacturing/production readiness assessments, technical readiness assessments, and market analysis.

3.4.3 Navy CRP Program Initiatives and Activities

One of the primary initiatives of the DON CRP remains the set-aside and application of approximately twenty percent of overall SBIR funding to selected CRP projects. The projects must meet a high-priority DON need and demonstrate potential for rapid transition into an acquisition Program of Record, fielded system, or future naval capability.

DON has ongoing initiatives and activities that CRP participants can leverage. The Navy SBIR/STTR Transition Program (STP) is available for new Phase II projects and provides market analysis, business planning, and development of marketing materials for a minimum of 12 projects annually. Participation in STP culminates with a technology showcase and presentation at the Forum for SBIR/STTR Transition (FST). This event enables DON to hold one-on-one meetings with Phase II firms to discuss CRP requirements and transition potential of the technologies. In FY 2016, the STP assisted 126 Phase II companies while the FST showcased 105 projects represented by 98 different companies. Additionally, CRP participants can leverage technical assistance services that include assessments in the areas of risk, manufacturing and production, technology transition, and engineering analysis. DON also offers an enhanced search

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capability to the public at www.navysbirsearch.com to provide access to information on thousands of SBIR/STTR-developed technologies for those looking to find proven technologies for solving existing problems as well as those looking to partner with firms whose expertise can assist in solving new problems. Additionally, the DON held the Primes Summit meeting which brought together senior DON leaders; S&T, T&E, and Acquisition PEO PMs; with DoD/DON major contractors to discuss integration/leveraging of SBIR/STTR.

3.4.4 Navy CRP 2014 Achievements and Results

The DON approved a total of 38 CRP projects in FY 2016 (see Appendix A), increasing the number of CRP projects to 323 since the inception of the program. Cumulatively, the DON has invested over \$608 million in SBIR funding and \$106 million in concurrent matching funds to CRP projects, which includes funding for the acceleration of transition efforts on Phase I/II awards. Navy CRP Projects have received a total of \$820M in Phase III government and non-government funding as reported in the DOD SBIR/STTR Company Commercialization Report.

Appendix A: NAVY Small Business Innovation Research Commercialization Readiness Program

FY 2016 Companies Approved for CRP

Company Name ¹	Project Title	Contract #	Topic #	PEO	Investor, Customer, or Fielded System ²
Advanced Coherent Technologies	Joint Multi-Mission Electro-Optic System(JMMES) for UAV Platforms	N68335-15-C-0342	N092-114	PEO (U&W)	Navy and Marine Corps Multi-mission Tactical Unmanned Air Systems
Agiltron Corporation	Hull Contamination Measurement	N00024-12-C-4136	N101-066	PEO Sub	Virginia Class Sub
Analytical Mechanics Associates, Inc	Innovative Concepts for Stabilization and Control of Aerial Refueling Drogues	N68335-16-C-0339	N07-172	PEO(JSF)	Advanced Development and Aerial Refueling Program
Aptima, Inc	Training Requirements: An Empirical and Computational Analysis for MAGIC CARPET (TRECA-MC)	N68335-14-C-0369	N08-012	PEO (A)	MAGIC CARPET Aviation Training Systems
ASSETT, Incorporated	Analytical tool sets with models,	N68335-16-C-0405	N04-069	PEO (U&W)	UAV - CCS (Common Control

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	metrics, and measurement techniques for System Architecture development				System)
BlazeTech Corp	Prediction of the Full-Scale Cook-off Response Based on Small-Scale Testing	N68335-16-C-0038	N10A-T011	PEO MCM	Insensitive Munitions (IM) modeling for PBXN-111
BST Systems Inc.	Novel Methods to Improve Performance of Silver-Zinc Batteries	N00024-12-C-4119	N101-054	PEO Sub	ASDS and DDS
Charles River Analytics Inc	Advanced Mission Planning Tools	N68335-16-C-0241	N122-124	PEO (U&W)	Unmanned Vehicles Control Systems
Corrdesa	Selective Electroplating Technology Improvement (SETI)	N68335-16-C-0449	N112-154	FRC	F-18
Creare LLC	Compact, Inexpensive, Microchannel Recuperators for Small Gas Turbines	N68335-16-C-0396	A12-080	PEO (U&W)	Unmanned Aerial Vehicle (UAV)
Engineering & Software System Solution, Inc.	Development of Cad Plating Replacement with Zinc Nickel on High Strength Steel Components	N68335-16-C-0037	AF071-320	FRC	Reduction of Toxic Substances in Aircraft Maintenance & Repair
Global Engineering and Materials, Inc	Innovative Analysis Tool for Damage Growth From Loaded Composite Fastener Holes	N68335-16-C-0159	N092-095	PEO (A)	Heavy Lift Helicopters
Group W Inc	Air Anti-Submarine Warfare Modeling and Simulation Tool	N68335-16-C-0167	N101-004	PEO (A)	High Altitude ASW, Maritime Patrol and Reconnaissance
Information Systems Laboratories, Inc	Data Fusion of Electric Field and Acoustic Data	N68335-16-C-0349	N091-019	PEO (A)	Air ASW Systems, Maritime Surveillance Aircraft
Inovati	Kinetic Metallization	N68335-16-C-0376	N07-122	FRC	E-6B, H-1, V-22 Programs

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	Process and Equipment for Dimensionally Restoring Bores of Aircraft Components				
M4 Engineering, Inc	Bonded Joint Analysis Method	N68335-16-C-0176	N12A-T004	PEO (U&W)	Aerial Target and Decoy Systems
MAST Technologies	High Temperature Survivability Coating Materials with Innovative Application Processes	N68335-14-C-0088	N101-041	JSF	Joint Strike Fighter / Joint effort with US Air Force
Mide Technology Corporation	Innovative Energy Absorbing Aerial Refueling (AR) Hose	N68335-16-C-0161	N112-112	PEO (U&W)	JSF
Mohawk Innovative Technology, Inc	Innovative Bearing Concepts For High Speed Rotating Machines	N68335-16-C-0448	N093-184	PEO (T)	F-18 & E-6B
MZA Associates Corporation	Naval Platform Aero-Optic Turbulence and Mitigation Methodology	N68335-16-C-0212	N13A-T001	PEO (T)	Aircraft Directed Energy Program
Navmar Applied Sciences Corporation	Commandable Mobile Anti Submarine Warfare Sensor (CMAS)	N68335-16-C-0160	N08-008	PEO (A)	Commandable Mobile ASW Sensor (CMAS)
Probus Test Systems Inc	Intelligent Agents for Automated Planning and Scheduling of Aviation Weapon Handling Aboard Aircraft Carriers	N68335-16-C-0321	N092-096	PEO (T)	Aircraft Launch and Recovery Equipment
Progeny Systems Corporation	Secure Open Architecture Open System Technologies for Tactical Networks	N00024-11-C-4159	N093-196	PEO Sub	Submarine Combat and Weapons Control Programs
Proto Manufacturing	Advanced NDI/E Tool for Residual	N68335-16-C-0140	N05-120	FRC	Naval Aircraft Non-Destructive Testing

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Inc	Stress Management				In-Situ
Rite-Solutions	Integrated Communications System-Next	N00024-15-C-4048	N101-047	PEO Sub	VA Class & SBSD Submarine
Rock West Solutions, Inc.	Affordable Broadband Radome	N68335-16-C-0162	N101-034	PEO (U&W)	Aerial Target Systems
SA Photonics, Inc	ADVANCED PROCESSING ELECTRONIC ATTACK (EA) Digital Radio Frequency Memory (DRFM)	N68335-16-C-0138	N121-036	PEO (U&W)	F/A-18, JSF
SAFE, Inc	Multi-Axis Vibration Mitigation and Habitability Improvement for Seated Occupants	N68335-16-C-0385	N101-026	PEO (T)	E-2 Hawkeye Program
Scientific Systems Company, Inc	Backup Landing System for Fire Scout	N68335-16-C-0325	N112-127	PEO (U&W)	Fire Scout
SeaLandAire Technologies, Inc	Precision High Altitude Sonobuoy Emplacement (PHASE)	N68335-16-C-0354	N08-023	PEO (A)	Air Anti Submarine Warfare Program
SI2 Technologies, Inc	Wideband Conformal Array for Wing Store (1000-347)	N68335-16-C-0208	N08-018	PEO (T)	Next Generation Jammer; Joint Strike Fighter Program
Signal Processing, Inc	Intelligent Proxies for Automated Mission Planning	N68335-16-C-0154	N111-022	PEO (U&W)	MQ-4C
Toyon Research Corp	Optimizing Track-to-Track Data Fusion for Variable Cases	N68335-16-C-0237	N111-016	PEO (U&W) & (T)	UCLASS UAV & Broad Area Maritime Surveillance (BAMS) program
Trident Systems Incorporated	Force Level Automated Certification of Downward Compatible Baseline Software	N00024-16-C-4043	N00-062	PEO IWS	AN/SPY-6 Air and Missile Defense Radar
Triton Systems, Inc	Life improvement of Plain Airframe Bearings by Preventing	N68335-15-C-0343	N131-016	PEO (A)	JSF

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	Contamination				
Ultra Communications Inc	Robust Optic Signal Distribution within Enclosures for Aerospace Applications	N68335-16-C-0374	AF093-003	PEO(JSF)	JSF
Vescent Photonics Inc	High Throughput, Waveguide Based, Non-Mechanical Laser Beam Steering	N68335-16-C-0187	N111-039	PEO (T)	Missile targeting,/detection, and ship/UV collision avoidance, & dynamic positioning systems
WW Technology Group	Techniques for High Assurance in Submarine Systems	N00024-15-C-4045	N06-065	PEO Sub	SSN 774

Notes: ¹ Order listed is alphabetical and does not convey any prioritization of CRP projects.

² Additional information about Investor, Customer, or Fielded System is available on request.