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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Missile Defense Agency										Date: February 2015		
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support					R-1 Program Element (Number/Name) PE 0605502C I Small Business Innovation Research - MDA							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	74.888	-	-	-	-	-	-	-	-	-	74.888
MD45: Small Business Innovation Research	-	74.888	-	-	-	-	-	-	-	-	-	74.888
Program MDAP/MAIS Code: 362												
Note N/A												
A. Mission Description and Budget Item Justification												
<p>This project explores innovative concepts pursuant to Public Law 106-554 (Small Business Reauthorization Act of 2000) and Public Law 107-50 (Small Business Technology Transfer Program Reauthorization Act of 2001), which mandates a two-phase competition for small businesses with innovative technology that can be commercialized. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs will develop new dual-use technology for future Missile Defense Agency (MDA) Ballistic Missile Defense Systems (BMDS) needs. Dual-use means that the technology will be judged on the potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new BMDS technology, and as a route to national economic growth through new commercial products. MDA will conduct the competition, award, and manage the contracts.</p> <p>The Missile Defense Agency`s SBIR/STTR investments are divided into 14 Research Areas for the following key components:</p> <p>-Aegis Ballistic Missile Defense (BMD): Develops Naval BMD Capability</p> <p>-Command, Control, Communication, Computer Intelligence Surveillance and Reconnaissance (C4ISR): Defines, develops and deploys an integrated Sensor and Command and Control (C2) capability for the Ballistic Missile Defense System</p> <p>-Program and Integration: Supervises the non-Aegis portfolio including Targets, Terminal High Altitude Area Defense (THAAD), Ground-based Midcourse Defense, and the Israeli programs</p> <p>-Test: Characterizes ballistic missile defense capability and supports fielding of an integrated and effective capability to the Warfighter</p> <p>-Advanced Technology: Develops technology to counter future threats</p> <p>SBIR and STTR topic areas for FY 2014 included:</p> <p>- Secure and Survivable Electronics Software</p> <p>- Standard Missile 3 Materials Design Improvements</p> <p>- Track Refinement from Off-Nominal Break-Up</p> <p>- Command and Control Course of Action Analysis Tool</p> <p>- Innovative and Modular Open System Radar Algorithm Test Environment</p> <p>- Reconfigurable Memory or Central Processing Unit Instruction Architecture</p> <p>- Radio Frequency Field Sensor for Integrated Circuits</p>												

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Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support		PE 0605502C I Small Business Innovation Research - MDA				
<div>- Mapping Debris Trajectories through a Fireball</div> <div>- Late-Time Sensor Characterization for Missile Intercept Debris</div> <div>- Innovative Data Architecture Generation Across a Complex System of Systems</div> <div>- Statistically Significant Simulation of the Ballistic Missile Defense</div> <div>- Development of High Performance Computing Technology for a Distributed Modeling and Simulation</div> <div>Hardware Infrastructure</div> <div>- Innovative Solutions to Insensitive Munitions Fast Cook-off Environments and Testing</div> <div>- Weight Optimized Mitigation to Direct Effects of Lightning Strike on a Missile Body</div> <div>- Missile Avionics Architecture Insensitive to Transient Power Interrupts</div> <div>- Integrated Health Sensing for Highly Efficient Weapon Inspection and Sustainment</div> <div>- Variable Gravity Two-Phase Heat Sink for Airborne Directed Energy Systems</div> <div>- Robust Phase Modulators and Polarization Controllers for High Power Fiber Lasers</div> <div>- Enhanced Sensor Systems</div> <div>- High-End Tactical Grade Inertial Measurement Unit Technology for Missile Defense</div> <div>- Maturity and Durability Enhancement of Advanced Aerospace Materials</div> <div>- High Performance Long Wave Infrared Focal Plane Array Sensor for Missile Defense</div> <div>- Miniaturized Safe and Arm Devices</div> <div>- Failure Avoidance in Microelectronics Due to Coefficient of Thermal Expansion</div> <div>- Base Metal Electrode Capacitor Test Methods</div> <div>- Measurement of Remaining Effective Stabilizer in Solid Propellants</div>						
B. Program Change Summary (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		-	-	-	-	-
Current President's Budget		74.888	-	-	-	-
Total Adjustments		74.888	-	-	-	-
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		74.888	-			
• Other Adjustment		-	-	-	-	-

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Change Summary Explanation FY 2014 funds were transferred to Small Business Innovation Research/Small Business Technology Transfer from other Program Elements in accordance with the SBIR/STTR Reauthorization Act of 2011		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency										Date: February 2015		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605502C / Small Business Innovation Research - MDA				Project (Number/Name) MD45 / Small Business Innovation Research			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MD45: Small Business Innovation Research	-	74.888	-	-	-	-	-	-	-	-	-	74.888
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

This project explores innovative concepts pursuant to Public Law 106-554 (Small Business Reauthorization Act of 2000) and Public Law 107-50 (Small Business Technology Transfer Program Reauthorization Act of 2001), which mandates a two-phase competition for small businesses with innovative technology that can be commercialized. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs will develop new dual-use technology for possible future Missile Defense Agency (MDA) Ballistic Missile Defense Systems (BMDS) needs. Dual-use means that the technology will be judged on the potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new MDA BMDS technology, and as a route to national economic growth through new commercial products. MDA will conduct the competition, award, and manage the contracts.

The Missile Defense Agency's SBIR/STTR investments are divided into 14 Research Areas for the following key components:

- Aegis Ballistic Missile Defense (BMD): Develops Naval BMD Capability
- Command, Control, Communication, Computer Intelligence Surveillance and Reconnaissance (C4ISR): Defines, develops and deploys an integrated Sensor and Command and Control (C2) capability for the Ballistic Missile Defense System
- Program and Integration: Supervises the non-Aegis portfolio including Targets, Terminal High Altitude Area Defense (THAAD), Ground-based Midcourse Defense, and the Israeli programs
- Test: Characterizes ballistic missile defense capability and supports fielding of an integrated and effective capability to the Warfighter
- Advanced Technology: Develop technology to counter future threats

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2014	FY 2015	FY 2016
Title: Small Business Innovative Research	74.888	-	-
Articles:	-	-	-
Description: N/A			
FY 2014 Accomplishments:			
Awarded 111 Phase I contracts (\$113K average) in the following research areas:			
--Advanced Technology			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015
--Aegis BMD --Anti-Tamper --Battle Management and Communications --Directed Energy --Modeling Simulation and Phenomenology --Targets & Countermeasures --QS-Quality, Safety & Mission Assurance --Radar -Awarded 78 Phase II contracts (\$769k average) in the following research areas: --Advanced Technology --Aegis BMD --Anti-Tamper --Battle Management and Communications --Directed Energy --Modeling Simulation and Phenomenology --Targets & Countermeasures --Test Instrumentation FY 2015 Plans: N/A FY 2016 Plans: N/A			
Accomplishments/Planned Programs Subtotals		74.888	-
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			

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E. Performance Metrics N/A		