Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Missile Defense Agency	Date: May 2017
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605502C / *Small Business Innovation Research - MDA*

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	88.694	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0	88.694
MD45: *Small Business Innovation Research*	-	88.694	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0	88.694

Program MDAP/MAIS Code: 362

Note

Funds are transferred into this PE in the execution year.

A. Mission Description and Budget Item Justification

Small Business Innovation Research (SBIR) 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. 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.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	88.694	0.000	0.000	-	0.000
Total Adjustments	88.694	0.000	0.000	-	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	88.694	0.000			
• Other Adjustment	0.000	0.000	0.000	-	0.000

Change Summary Explanation

FY 2016 funds were transferred to SBIR/STTR from other Program Elements in accordance with the SBIR/STTR Reauthorization Act of 2011

Exhibit R-2A, RDT&E Project Justification: FY 2018 Missile Defense Agency			Date: May 2017
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
MD45: *Small Business Innovation Research*	-	88.694	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0	88.694
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funds are transferred into this Program Element in the execution year.

A. Mission Description and Budget Item Justification

The MDA's SBIR/STTR investments are divided into 16 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: Develops technology to counter future threats

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018
Title: Small Business Innovative Research	88.694	0.000	0.000
Articles:	-	-	-
Description: The SBIR and Small Business Technology Transfer (STTR) programs will develop new dial-use technology for future Missile Defense Agency (MDA) Ballistic Missile Defense Systems (BMDS) needs			
FY 2016 Accomplishments: SBIR and STTR topic areas for FY 2016 included: - Advanced Cognition Processing and Algorithms for Improved Identification - Kinematic Reach/Containment - System Communications - Lethality Enhancement - Gaming Trainer - Command and Control Human-to-Machine Interface - Improved Track Accuracy for Missile Engagements - Innovative Methodologies for Modeling Fracture Under High Strain-rate Loading			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Missile Defense Agency		Date: May 2017
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*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018
- Thermally Efficient Emitter Technology for Advanced Scene/Simulation Capability in Hardware in the Loop Testing - Innovative Antenna Arrays Enabling Continuous Interceptor Communications - Multi-Object Payload Deployment - Interceptor Thermal Protection Systems - Low Light Short Wave Infrared Focal Plane Arrays - Solid State High Power Amplifier for Communications - Non-Destructive Testing Methods for Detecting Red Plague Within an Insulated Silver Plated Copper Conductor - Passive Inter-Modulation RF Emissions Utilized for Identifying Galvanic Corrosion in Metal Structures - Contextual Reasoning for Object Identification - System of Systems Control Interactions - Aerospace Vehicle Signature Modeling Technologies - Spectral Crosstalk Reduction for Dual-band Long Wave Infrared Detectors - Gold Contaminated Solder Joint Characterization for Quantifying Risks Associated with Gold Embrittlement - Open Framework Planner with Embedded Training - Irrefutable Tamper Evidence - Self-Building/Establishing Networks - Inline Threat Generation for Modeling and Simulation - Innovative Ways to Shorten System Level Simulation Integration Time - High Power Fiber Laser Tap Couplers for Phase and Polarization Control - General Wave-Optics Based Scaling Laws for Multiple/Obscured Apertures - Smart Readout Integrated Circuit for Dual Band Infrared Focal Plane Arrays - Advanced Reserve Battery Technologies - MEMS IMU Solutions for Missile Defense Applications - Lithium Oxyhalide Battery Separator Material ***FY 2017 Plans:*** N/A ***FY 2018 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	88.694	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Missile Defense Agency		Date: May 2017
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*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A