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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Missile Defense Agency **Date:** February 2015

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>
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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	854.335	283.782	268.842	102.795	-	102.795	104.923	106.913	109.599	111.370	Continuing	Continuing
MD20: <i>Israeli Upper Tier</i>	244.841	74.707	74.707	55.050	-	55.050	56.194	57.259	58.695	59.642	Continuing	Continuing
MD26: <i>Israeli ARROW Program</i>	204.931	44.363	56.201	11.019	-	11.019	11.245	11.460	11.748	11.937	Continuing	Continuing
MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>	404.563	149.712	137.934	36.726	-	36.726	37.484	38.194	39.156	39.791	Continuing	Continuing
MD83: <i>Iron Dome</i>	-	15.000	-	-	-	-	-	-	-	-	-	15.000

Program MDAP/MAIS Code: 362

Note

Content supports expected contributions from Israel per international agreements.

A. Mission Description and Budget Item Justification

Since 1986, the United States and the State of Israel have cooperated on missile defense. Currently Missile Defense Agency (MDA) has four major projects with Israel to develop and improve their indigenous capability to defend against short and medium range ballistic missiles. These include Upper Tier Interceptors (MD20), the Arrow Weapon System (MD26), the Short-Range Ballistic Missile Defense, also known as the David's Sling Weapon System (MD34) and the Iron Dome Program (MD83). Within these projects MDA develops and produces weapon systems, conducts tests, and exercises interoperability between U.S. BMDS and the Israeli Missile Defense Architecture.

U.S.-Israel Cooperative Programs consist of the following major efforts:

Israeli Upper Tier Interceptor (UTI) Project (MD20):

The Upper Tier Program provides the Arrow-3 missile, increasing the system's capability against advanced medium range threats by providing approximately four times the current Arrow-2 battle space. The primary near term objective is to complete and demonstrate Upper Tier design and continue acquisition for Long Lead Initial Lot Production (ILP) with first unit delivery in FY 2016.

Israeli Arrow Weapon System (AWS) (MD26):

The Arrow System Improvement Program (ASIP) includes block upgrades to the Arrow Weapon System that enhances capabilities against more stressing evolving medium range threats by increasing the total defended area by approximately 50 percent. ASIP elements include the Arrow-2 missile and launcher, Citron Tree Battle Management Center (BMC), Green Pine (GP) and Super Green Pine (SGP) Radars, and the Hazelnut Tree Launcher Control Center (LCC). Also included is the integration of Block 5 assets which include the Arrow-3 missile and launcher. Arrow Block 5, under the ASIP agreement will also incorporate a Long Range Detection suite that consists of an unmanned aerial vehicle Airborne Early Warning System (ABEWS) and a S-Band Silver Oak radar for increased sensor range, early detection and enhanced raid size capacity. The program also includes the continued development of Arrow's interoperability with U.S. Ballistic Missile Defense System (BMDS).

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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>
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Related activities include the Israeli Test Bed (ITB) and the Israeli Systems Architecture and Integration (ISA&I) study that assesses requirements and growth paths for the 2025 Israel Missile Defense Architecture.

Short Range Ballistic Missile Defense (SRBMD) (MD34):

SRBMD, also known as the David's Sling Weapon System (DSWS), is designed to counter short range rockets, cruise missiles, and tactical ballistic missiles and will be integrated into the Israeli Missile Defense Architecture adding another layer of defense to the current Arrow System. Block 1 capability will enhance the short range rocket and missile defense capability. Block 2 will add capability to defend against medium range and cruise missiles. Block 3 will provide robust defense capability and add significant detection capability to the Israeli Air Defense Architecture. The David's Sling Weapon System (DSWS) includes the Stunner Interceptor, Missile Firing Unit (MFU), Multi-Mission Radar (MMR), Launch Site Controller (LSC) and the Golden Almond Battle Management Center (BMC). The near term objectives are completion of Block 1 development, demonstrate system capability and flight test, and procure material of Initial Lot Production (ILP) utilizing Research, Development, Test, & Evaluation (RDT&E) funding and field the system to the Israeli Air Force for first unit delivery in 2015.

U.S.-Israel Co-Production Program:

Iron Dome (ID) (MD83):

Iron Dome is a mobile all-weather air defense system developed by Rafael Advanced Defense Systems. The system is designed to intercept and destroy short-range rockets and artillery shells whose trajectory would take them to a populated area. FY 2014 funding is for non-recurring engineering costs in connection with the establishment of a capacity for co-production in the United States. Industry of the United States shall produce parts and components for the Iron Dome short-range rocket defense program.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	283.782	96.803	103.940	-	103.940
Current President's Budget	283.782	268.842	102.795	-	102.795
Total Adjustments	-	172.039	-1.145	-	-1.145
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	172.039			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	-1.145	-	-1.145

Change Summary Explanation

FY 2015 adjustments due to Congressional Adds that increased MD20: Israeli Upper Tier by \$20.339 million, MD26: Israeli Arrow Program by \$45.500 million and MD34: Short Range Ballistic Missile Defense by \$106.200 million.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>
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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
MD20: <i>Israeli Upper Tier</i>	244.841	74.707	74.707	55.050	-	55.050	56.194	57.259	58.695	59.642	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This project code encompasses the Missile Defense Agency's (MDA) U.S.-Israeli cooperative program for the Israeli Upper Tier Program.

A. Mission Description and Budget Item Justification

This project provides funding for the Upper Tier component of the Arrow Weapon System (AWS) development. The Upper Tier Interceptor will enhance Israel's indigenous capability to defend against short and medium range ballistic missiles by increasing the battle space by a factor of four. The scope of the Upper Tier Program covers interceptor development, testing, material procurement to include initial lot production, and integration of spiral software development for Block 5 AWS. The United States through the cooperative effort gains knowledge and experience of the Israeli Defense Forces operation of a multi-layered defense architecture. This project also includes the procurement of the Silver Sparrow Air-Launched Target which is necessary to validate the performance of the Arrow-3 Missile and related Block 5 spiral development activities.

The Upper-Tier Interceptor Project Agreement was signed in 2010. This agreement states that the project will be jointly managed by the U.S. Missile Defense Agency and the Israeli Missile Defense Organization. The agreement also documents the U.S.-Israeli cost share, in which the development costs will be equitable between the U.S. and Israel.

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

	FY 2014	FY 2015	FY 2016
Title: Upper Tier Interceptor	74.707	74.707	55.050
Articles:	-	-	-
Description: N/A			
FY 2014 Accomplishments:			
-Conducted Interceptor Fly-Out Test #2 of the Arrow-3 Interceptor.			
-Completed data reduction and analysis for the Interceptor Fly-out Test #2 of the Arrow-3 Interceptor.			
-Conducted algorithm design review for Intercept Test Number #1 to verify requirements.			
-Conducted Hardware in the Loop (HWIL) testing to demonstrate electronic optical seeker Knowledge Points.			
-Conducted preparation activities for Arrow 3 Intercept Test Number #1.			
-Conducted Arrow-3 component Production Readiness Reviews for Initial Lot Production.			
FY 2015 Plans:			
-Conduct lab testing to demonstrate discrimination Knowledge Points.			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016
<ul style="list-style-type: none"> -Conduct Interceptor Test #1 of the Arrow-3 Interceptor. -Conduct four Element-Level Knowledge Point demonstrations to provide critical data to assess viability of component design. -Conduct algorithm design review for Interceptor Test #2 to verify requirements. -Initiate procurement of Long Lead Items for Initial Lot Production assets. -Continue with Arrow-3 component Production Readiness Reviews for Initial Lot Production. <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> -Conduct Interceptor Test #2 of the Arrow-3 Interceptor. -Conduct algorithm design review for Interceptor Test Number #3 to verify requirements. -Continue procurement of Initial Lot Production assets. -Conduct Upper Tier Interceptor Production Readiness Review (PRR). 				
Accomplishments/Planned Programs Subtotals		74.707	74.707	55.050
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
<p>The Upper-Tier Interceptor Project Agreement under the Research, Development, Test and Evaluation (RDT&E) Framework agreement between the U.S. and Israel creates a joint program office to manage this program. Missile Defense Agency (MDA) and the Israeli Ministry of Defense (IMoD) continue to implement best management practices that allow for the more effective use of program management tools to ensure risk is adequately managed to include Knowledge Points that assess Israel's development progress. The DoD U.S. Israeli Cooperative Program Office jointly manages the Upper Tier program with IMoD to ensure that all systems are delivered on time, on budget, and meet the needs of the warfighter. The program is equitably funded between the U.S. and Israel. A portion of the Israeli cost share comes from non-financial contributions such as previously completed work prior to joint program initiation. Contracts are awarded by IMoD or MDA dependent on what is most advantageous to the Joint Governments. In regard to the Upper Tier Interceptor, IMoD will contract with Israel Aerospace Industries (IAI). IAI subcontracts with Israeli companies, Boeing and other U.S. companies.</p>				
E. Performance Metrics				
N/A				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / Israeli Cooperative Programs	Project (Number/Name) MD20 / Israeli Upper Tier
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Upper Tier Interceptor - Upper Tier Interceptor	C/CPFF	Israel Aerospace Industries (IAI) : Israel	244.841	74.707		74.707	Dec 2014	55.050	Dec 2015	-		55.050	Continuing	Continuing	Continuing
Subtotal			244.841	74.707		74.707		55.050		-		55.050	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>
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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	244.841	74.707	74.707	55.050	-	55.050	-	-	-

Remarks
Contract cost reflect U.S. contribution only. Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>

Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity +
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✦

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Israeli Cooperative Arrow 3 Interceptor Flight Test #2 - FY 2014	+	+	+	+																								
Conduct Hardware in the Loop (HWIL) Testing	+	+	+	+																								
Arrow-3 Component Production Readiness Reviews for Initial Lot Production					✦	✦	✦	✦																				
Israeli Cooperative Arrow 3 Intercept Test #1- FY 2015					✦	✦	✦	✦																				
Israeli Cooperative Arrow 3 Intercept Test #2- FY 2016									✦	✦	✦	✦																
Israeli Cooperative Arrow 3 Intercept Test #3- FY 2017													✦	✦	✦	✦												
Israeli Cooperative Arrow 3 Intercept Test #4- FY 2018																	✦	✦	✦	✦								
Israeli Cooperative Arrow 3 Intercept Test #5- FY 2019																					✦	✦	✦	✦				
Israeli Cooperative Arrow 3 Intercept Test #6- FY 2020																									✦	✦	✦	✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Israeli Cooperative Arrow 3 Interceptor Flight Test #2 - FY 2014	1	2014	4	2014
Conduct Hardware in the Loop (HWIL) Testing	1	2014	4	2014
Arrow-3 Component Production Readiness Reviews for Initial Lot Production	1	2015	4	2015
Israeli Cooperative Arrow 3 Intercept Test #1- FY 2015	1	2015	4	2015
Israeli Cooperative Arrow 3 Intercept Test #2- FY 2016	1	2016	4	2016
Israeli Cooperative Arrow 3 Intercept Test #3- FY 2017	1	2017	4	2017
Israeli Cooperative Arrow 3 Intercept Test #4- FY 2018	1	2018	4	2018
Israeli Cooperative Arrow 3 Intercept Test #5- FY 2019	1	2019	4	2019
Israeli Cooperative Arrow 3 Intercept Test #6- FY 2020	1	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency										Date: February 2015		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>				Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>			
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
MD26: <i>Israeli ARROW Program</i>	204.931	44.363	56.201	11.019	-	11.019	11.245	11.460	11.748	11.937	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

This project includes funding for the Arrow Weapon Improvement System (ASIP), Israeli Test Bed (ITB) and the Israeli Systems Architecture and Integration (ISA&I).

The Arrow Weapon System (AWS) continues development of Block 4. Also included is the integration of Block 5 assets which consists of the Arrow-3 missile, launcher and the Long Range Detection Suite (LRDS). The LRDS consists of an unmanned aerial vehicle Airborne Early Warning System (ABEWS) and a S-Band Silver Oak radar for increased sensor range and early detection and enhanced salvo engagement capability. The AWS provides Israel an indigenous capability to defend against short and medium range ballistic missiles. The ASIP effort will enhance the performance of the AWS to defeat longer-range and more robust ballistic missile threats expected to be introduced in the Middle East in the near future. ASIP elements include the Arrow-2 missile and launcher, Citron Tree Battle Management Center (BMC), Green Pine (GP) and Super Green Pine (SGP) Radars, and the Hazelnut Tree Launcher Control Center (LCC). The ASIP also ensures AWS interoperability via Joint Tactical Information Data System (JTIDS) Link-16 common communication architecture with the U.S. Ballistic Missile Defense System elements such as Terminal High Altitude Area Defense (THAAD), AEGIS, Command and Control, Battle Management, and Communications (C2BMC), Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2), and Phased Array Tracking Intercept of Target (PATRIOT) through ground tests, flight tests, and operational exercises.

The Israeli Test Bed (ITB) provides experiments to evaluate Human Machine Interface (HMI) battle management. Israeli Systems Architecture and Integration (ISA&I) conducts studies to assess Israel's future 2025 Missile Defense Architecture. The ITB and ISA&I efforts will continue to support AWS development as well as to define future missile defense architectures and growth paths.

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

	FY 2014	FY 2015	FY 2016
Title: Arrow System Improvement Program	38.001	49.839	4.657
Articles:	-	-	-
Description: N/A			
FY 2014 Accomplishments:			
-Conducted Block 4.2 Critical Design Review.			
-Conducted Juniper Cobra 14 interoperability Combatant Command (COCOM) Exercise test with the United States European Command (EUCOM).			
-Conducted Intercept Test with improved discrimination capability to verify Block 4.1.			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016
<p>-Continued Long Range Detection Suite Development. -Continued Block 5 Arrow Weapon System Integration.</p> <p>FY 2015 Plans: -Continue Block 5 Arrow Weapon System integration. -Continue Long Range Detection Suite Development. -Conduct Lab and flight testing and analysis to demonstrate and complete Knowledge Points.</p> <p>FY 2016 Plans: -Continue Block 5 Arrow Weapon System integration.</p>				
<p>Title: Israeli Test Bed (ITB)</p> <p>Description: N/A</p> <p>FY 2014 Accomplishments: -Conducted Human-Machine Interface (HMI) experiment with warfighters to further define Techniques, Tactics and Procedures (TTPs) and Concept of Operations (CONOPs). -Conducted exercise with warfighters to further refine TTPs and Concept of Operations (CONOPs).</p> <p>FY 2015 Plans: -Conduct HMI experiments with warfighters to integrate David's Sling Weapon System (DSWS) and Iron Dome into Lower Tier TTPs and CONOPS. -Conduct HMI experiments with warfighters to integrate Block 5 Arrow Weapon System TTPs and CONOPS.</p> <p>FY 2016 Plans: -Conduct HMI experiments with warfighters to integrate Block 5 Arrow Weapon System TTPs and CONOPS.</p>		3.535	3.535	3.535
		Articles:	-	-
<p>Title: Israeli Systems Architecture and Integration (ISA&I)</p> <p>Description: N/A</p> <p>FY 2014 Accomplishments: -Conducted studies and analysis to identify the preferred missile defense architecture and reference threat for 10-15 year future epoch and interoperability special studies on regional threats and growth path options.</p> <p>FY 2015 Plans:</p>		2.827	2.827	2.827
		Articles:	-	-

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016
-Conduct studies and analysis to identify the preferred missile defense architecture and reference threat for 10-15 year future epoch and interoperability special studies on regional threats and growth path options.			
<i>FY 2016 Plans:</i> -Conduct studies and analysis to identify the preferred missile defense architecture and reference threat for 10-15 year future epoch and interoperability special studies on regional threats and growth path options.			
Accomplishments/Planned Programs Subtotals	44.363	56.201	11.019

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

The DoD U.S. Israeli Cooperative Program Office jointly manages the Arrow Program with Israel Ministry of Defense (IMoD) to ensure that all systems are delivered with quality on time, on budget, and meet the needs of the warfighter. The program funding is equitably funded between the U.S. and Israel with Israel providing matching contributions. However, a portion of the Israeli cost share comes from non-financial contributions such as previously completed work prior to joint program initiation. Contracts are awarded by IMoD or MDA dependent on what is most advantageous to the Joint Governments. In regard to Arrow System Improvement Program (ASIP), IMoD contracts on behalf of U.S. government with Israel Aerospace Industries (IAI). IAI subcontracts with Israeli and U.S. companies. For the Israeli Test Bed, the Missile Defense Agency (MDA) contracts directly with Elbit Systems, Ltd. while IMoD provides an equitable share of the funding to the U.S. Finally, MDA contracts directly with WALES, Ltd for the Israeli System Architecture and Integration program.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Arrow System Improvement Program - Arrow System Improvement Program (ASIP)	C/CPFF	Israel Aerospace Industries (IAI) : Israel	175.851	38.001		49.839	Dec 2014	4.657	Dec 2015	-		4.657	Continuing	Continuing	Continuing
Israeli Test Bed (ITB) - Israeli Test Bed	C/FFP	Elbit Systems : Israel	17.675	3.535		3.535	Oct 2014	3.535	Oct 2015	-		3.535	Continuing	Continuing	Continuing
Israeli Systems Architecture and Integration (ISA&I) - ISA&I	C/FFP	Wales LTD : Israel	11.405	2.827		2.827	Oct 2014	2.827	Oct 2015	-		2.827	Continuing	Continuing	Continuing
Subtotal			204.931	44.363		56.201		11.019		-		11.019	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>
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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	204.931	44.363	56.201	11.019	-	11.019	-	-	-

Remarks
Contract cost reflect U.S. contribution only.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity Planned Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Intercept Test with Arrow 2	✦	✦	✦	✦																								
Israeli Test Bed Exercise with Warfighter FY2014	✦	✦	✦	✦																								
Israeli Test Bed Human-Machine Interface Experiment with Warfighter FY2014	✦	✦	✦	✦																								
Israeli Test Bed Exercise with Warfighter FY2015					✦	✦	✦	✦																				
Israeli Test Bed Human-Machine Interface Experiment with Warfighter FY2015					✦	✦	✦	✦																				
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2015					✦	✦	✦	✦																				
Israeli Test Bed Experiments FY 2015					✦	✦	✦	✦																				
Israeli Test Bed Exercise with Warfighter FY2016									✦	✦	✦	✦																
Israeli Test Bed Human-Machine Interface Experiment with Warfighter FY2016									✦	✦	✦	✦																
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2016									✦	✦	✦	✦																
Israeli Test Bed Experiments FY 2016									✦	✦	✦	✦																
Israeli Test Bed Experiments FY 2017													✦	✦	✦	✦												
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2017													✦	✦	✦	✦												
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2018																	✦	✦	✦	✦								
Israeli Test Bed Experiments FY 2018																	✦	✦	✦	✦								
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2019																					✦	✦	✦	✦				
Israeli Test Bed Experiments FY 2019																					✦	✦	✦	✦				
Israeli Test Bed Experiments FY 2020																									✦	✦	✦	✦
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2020																									✦	✦	✦	✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Intercept Test with Arrow 2	1	2014	4	2014
Israeli Test Bed Exercise with Warfighter FY2014	1	2014	4	2014
Israeli Test Bed Human-Machine Interface Experiment with Warfighter FY2014	1	2014	4	2014
Israeli Test Bed Exercise with Warfighter FY2015	1	2015	4	2015
Israeli Test Bed Human-Machine Interface Experiment with Warfighter FY2015	1	2015	4	2015
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2015	1	2015	4	2015
Israeli Test Bed Experiments FY 2015	1	2015	4	2015
Israeli Test Bed Exercise with Warfighter FY2016	1	2016	4	2016
Israeli Test Bed Human-Machine Interface Experiment with Warfighter FY2016	1	2016	4	2016
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2016	1	2016	4	2016
Israeli Test Bed Experiments FY 2016	1	2016	4	2016
Israeli Test Bed Experiments FY 2017	1	2017	4	2017
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2017	1	2017	4	2017
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2018	1	2018	4	2018
Israeli Test Bed Experiments FY 2018	1	2018	4	2018
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2019	1	2019	4	2019
Israeli Test Bed Experiments FY 2019	1	2019	4	2019
Israeli Test Bed Experiments FY 2020	1	2020	4	2020
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2020	1	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency										Date: February 2015		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>				Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>			
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
MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>	404.563	149.712	137.934	36.726	-	36.726	37.484	38.194	39.156	39.791	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

A. Mission Description and Budget Item Justification

The goal of the Israeli Short Range Ballistic Missile Defense (SRBMD) program, also known as the David's Sling Weapon System (DSWS) is to provide an affordable SRBM and large caliber rocket defense capability. The current Program Agreement utilizes Research, Development, Test, & Evaluation (RDT&E) funding to develop the capability against large caliber rockets and short range ballistic missiles and procure material for Initial Lot Production (ILP). The DSWS is comprised of the Stunner Interceptor, Golden Almond Battle Management Center, the Multi-Mission Radar, Launch Site Controller and the Missile Firing Unit.

Under the U.S.-Israeli Project Agreement signed in September 2008, the DSWS Program is jointly managed by the U.S. Missile Defense Agency and the Israeli Missile Defense Organization. Responsibilities and cost share are specified in the Project Agreement. Development costs are equitably shared between the U.S. and Israel.

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

	FY 2014	FY 2015	FY 2016
Title: SRBMD Program	149.712	137.934	36.726
Articles:	-	-	-
Description: N/A			
FY 2014 Accomplishments:			
-Conducted Radar Field Test #3.			
-Conducted ground test and simulations to validate missile and system performance to complete 4 Knowledge points and provide data to assess subsystem and system design robustness.			
-Completed production readiness review of the David's Sling Weapon System Sub-Components.			
-Conducted 1 Block One system intercept test with production representative interceptor to validate the Block One system performance.			
FY 2015 Plans:			
- Complete Initial Lot Production (ILP) delivery of first Battle Management Center.			
- Complete Block Two System Preliminary Design Review (PDR).			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency		Date: February 2015		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016
<ul style="list-style-type: none"> - Conduct ground test and simulations to validate missile and system performance to complete 4 Knowledge points and provide data to assess subsystem and system design robustness. - Complete production readiness review of the David's Sling Weapon System. - Deliver Initial Lot Production (ILP) Interceptors to the Israeli Air Force. - Deliver Battle Management and Sensor capability to the Israeli Air Force. - Conduct 1 Block One system intercept test with production representative interceptor to validate the Block One system performance. <p><i>FY 2016 Plans:</i></p> <ul style="list-style-type: none"> -Deliver additional Initial Lot Production (ILP) Interceptors to the Israeli Air Force. -Conduct 1 Block One system intercept test with ILP Interceptor to demonstrate production stunner performance. 				
Accomplishments/Planned Programs Subtotals		149.712	137.934	36.726
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
<p>The Short Range Ballistic Missile Defense (SRBMD) Project Agreement under the Research, Development, Test and Evaluation (RDT&E) Framework agreement between the U.S. and Israel creates a joint program office to manage this program. Missile Defense Agency (MDA) and the Israeli Ministry of Defense (IMoD) continue to implement management practices that allow for the more effective use of program management tools to ensure risk is adequately managed to include Knowledge Points that assess Israel's development progress. The DoD U.S. Israeli Cooperative Program Office jointly manages the SRBMD program with IMoD to ensure that all systems are delivered on time, on budget, and meet the needs of the warfighter. The program is equitably funded between the U.S. and Israel. A portion of the Israeli cost share comes from non-financial contributions such as previously completed work prior to joint program initiation. Contracts are awarded by IMoD or MDA dependent on what is most advantageous to the Joint Governments. For the Stunner Interceptor, Rafael Advanced Systems (an Israeli company), subcontracts to Raytheon Missile Systems for Stunner interceptor components.</p>				
E. Performance Metrics				
N/A				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency												Date: February 2015			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603913C / Israeli Cooperative Programs				MD34 / Short Range Ballistic Missile Defense (SRBMD)							
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SRBMD Program - SRBMD Program	C/CPFF	Rafael : Israel	404.563	149.712		137.934	Dec 2014	36.726	Dec 2015	-		36.726	Continuing	Continuing	Continuing
Subtotal			404.563	149.712		137.934		36.726		-		36.726	-	-	-
Remarks															
N/A															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-	-	-	-
Remarks															
N/A															
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-	-	-	-
Remarks															
N/A															
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Missile Defense Agency **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>
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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	404.563	149.712	137.934	36.726	-	36.726	-	-	-

Remarks
Contract cost reflect U.S. contribution only.

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>

Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity +
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✦

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
System Flight Test #5 FY 2014	✦	✦	✦	✦																								
System Flight Test #6 FY 2015					✦	✦	✦	✦																				
System Flight Test #7 FY 2016									✦	✦	✦	✦																
System Flight Test #8 FY 2017													✦	✦	✦	✦												
System Flight Test #9 FY 2018																	✦	✦	✦	✦								
System Flight Test #10 FY 2019																					✦	✦	✦	✦				
System Flight Test #11 FY 2020																									✦	✦	✦	✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Missile Defense Agency		Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System Flight Test #5 FY 2014	1	2014	4	2014
System Flight Test #6 FY 2015	1	2015	4	2015
System Flight Test #7 FY 2016	1	2016	4	2016
System Flight Test #8 FY 2017	1	2017	4	2017
System Flight Test #9 FY 2018	1	2018	4	2018
System Flight Test #10 FY 2019	1	2019	4	2019
System Flight Test #11 FY 2020	1	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Missile Defense Agency **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD83 / <i>Iron Dome</i>
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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
MD83: <i>Iron Dome</i>	-	15.000	-	-	-	-	-	-	-	-	-	15.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Iron Dome defense system was built by Rafael Advanced Systems and funded by the Israeli Ministry of Defense (IMoD). Iron Dome was declared operational and initially deployed in March 2011 and successfully intercepted a Grad rocket launched from Gaza in April 2011. In FY 2014, \$15 million was provided for non-recurring engineering costs in connection with the establishment of a capacity for co-production in the United States by industry of the United States of parts and components for the Iron Dome short-range rocket defense program. The U.S. signed a co-production agreement in March 2014 to develop Iron Dome parts for Israel. FY 2014 and FY 2015 procurement funds for U.S. based co-production of parts and components by U.S. industry will be implemented in accordance with the March 2014 International Agreement. In 2011, the United States of America provided \$203 million in procurement funds to spur the production and deployment of additional Iron Dome Batteries. In addition to the initial procurement funding, \$70 million was provided in 2012, \$194 million was provided in 2013, and \$445 million was provided in 2014, which included \$225 million provided as a result of the Emergency Supplemental Appropriations Resolution to address emergent operations in support of Operation Protective Edge.