

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency **Date:** March 2014

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 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>
---	---

COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	15.596	-	-	-	-	-	-	-	-	-	15.596
MD95: <i>Advanced Remote Sensor Technology</i>	-	14.698	-	-	-	-	-	-	-	-	-	14.698
MD40: <i>Program-Wide Support</i>	-	0.898	-	-	-	-	-	-	-	-	-	0.898

MDAP/MAIS Code: 362

The FY 2015 OCO Request will be submitted at a later date.

Note

FY 2014 and 2015 funding is requested in the Discrimination Sensor Technology Program Element, 0603177C.

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) is conducting an enhanced discrimination technology demonstration program that will use a wide range of advanced remote sensor technologies and techniques. The goals for enhanced discrimination are to improve the probability of engagement success for stressing threats, expand the Ballistic Missile Defense (BMD) battle space, and increase the ability to negate larger raid sizes. System modeling indicates geographically and spectrally-diverse advanced sensors will improve global persistent tracking and the ability to discriminate by up to an order of magnitude. These improvements increase all weapon systems performance for regional and homeland defense. The advanced remote sensor technology is applicable to space or very-high-altitude basing.

Starting in FY 2014, content previously planned in the Advanced Remote Sensor Technology PE is captured in the Discrimination Sensor Technology PE (0603177C), Project MD95. This content includes maturing emerging advanced detectors, focal planes, and algorithms.

MD40 Program-Wide Support (PWS) consists of essential non-headquarters management costs in support of the MDA functions and activities across the entire Ballistic Missile Defense System (BMDS).

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
---	-------------------------

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 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>
---	---

B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	58.742	-	-	-	-
Current President's Budget	15.596	-	-	-	-
Total Adjustments	-43.146	-	-	-	-
• Congressional General Reductions	-0.025	-			
• Congressional Directed Reductions	-40.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.398	-			
• SBIR/STTR Transfer	-0.222	-			
• Other Adjustment	-1.501	-	-	-	-

Change Summary Explanation

N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
--	---	---

COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD95: <i>Advanced Remote Sensor Technology</i>	-	14.698	-	-	-	-	-	-	-	-	-	14.698
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

N/A

A. Mission Description and Budget Item Justification

Starting in FY 2014, the content planned in the Advanced Remote Sensor Technology (ARST) program transferred to the Ballistic Missile Defense Technology Program Element (0603175C). This content includes maturing emerging advanced detectors, focal planes, and algorithms.

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

	FY 2013	FY 2014	FY 2015
<p>Title: Advanced Remote Sensor Technology</p> <p align="right">Articles:</p> <p>Description: FY 2014 and 2015 funding is requested in the Discrimination Sensor Technology Program Element, 0603177C, Project MD95.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Completed advanced sensor data mining. Reviewed prior MDA programs and other Service/Agency advanced sensor programs. Defined a cost effective incremental program to develop and test next generation advanced sensor technology for missile defense applications. -Initiated advanced sensor technology development. Awarded two contracts to General Atomics to demonstrate advanced sensor concepts and funded Massachusetts Institute of Technology (MIT)/ Lincoln Laboratory (LL) to characterize the Multi-Spectral Targeting System(MTS)-C for missile defense applications. Successfully demonstrated acquisition/tracking of boosting missiles during representative Ballistic Missile Defense System (BMDS) tests (Flight Test Mission (FTM)-21, FTM-22). -Initiated development of advanced sensor system control algorithms and software. Successfully demonstrated first time control of an MTS-C sensor by an upgraded airborne processor against boosting missiles during representative BMDS tests (FTM-21, FTM-22). -Updated models and simulation for advanced sensor system functionality. Verified advanced sensor design modeling and simulation tools and validated advanced sensor functionality. <p>FY 2014 Plans:</p>	<p>14.698</p> <p>-</p>	<p>-</p> <p>-</p>	<p>-</p> <p>-</p>

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
N/A				
FY 2015 Plans:				
N/A				
Accomplishments/Planned Programs Subtotals		14.698	-	-
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				
E. Performance Metrics				
N/A				

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
--	---	---

Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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			
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor data mining	FFRDC	Various : Various	0.000	0.540		-		-		-		-	-	0.540	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor technology development (1)	C/CPFF	General Atomics : Poway CA	0.000	6.103		-		-		-		-	-	6.103	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor technology development (2)	C/CPFF	Space Dynamics Lab : Logan UT	0.000	1.173		-		-		-		-	-	1.173	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor technology development (3)	FFRDC	Massachusetts Institute of Technology / Lincoln Laboratory : Lexington MA	0.000	1.440		-		-		-		-	-	1.440	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor technology development (4)	Various	Various : Various	0.000	0.529		-		-		-		-	-	0.529	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Development of advanced sensor system control algorithms and software	FFRDC	Massachusetts Institute of Technology / Lincoln Laboratory : Lexington MA	0.000	0.720		-		-		-		-	-	0.720	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
--	---	---

Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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			
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Updated models and simulation to verify advanced sensor system functionality (1)	MIPR	Aviation and Missile Research Development and Engineering Center : Redstone Arsenal, AL	0.000	1.200		-		-		-		-	-	1.200	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Updated models and simulation to verify advanced sensor system functionality (2)	FFRDC	Massachusetts Institute of Technology / Lincoln Laboratory : Lexington MA	0.000	0.720		-		-		-		-	-	0.720	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Updated models and simulation to verify advanced sensor system functionality (3)	Various	Various : Various	0.000	0.677		-		-		-		-	-	0.677	-
Subtotal			0.000	13.102		-		-		-		-	-	13.102	-

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
--	---	---

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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			
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor data mining	Various	Various : Various	0.000	0.066		-		-		-		-	-	0.066	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor technology development	Various	Various : Various	0.000	1.127		-		-		-		-	-	1.127	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Development of advanced sensor system control algorithms and software	Various	Various : Various	0.000	0.087		-		-		-		-	-	0.087	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Updated models and simulation to verify advanced sensor system functionality	Various	Various : Various	0.000	0.316		-		-		-		-	-	0.316	-
Subtotal			0.000	1.596		-		-		-		-	-	1.596	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
--	---	---

Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	14.698	-	-	-	-	-	14.698	-

Remarks
N/A

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	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
Develop advanced sensor technology				◆																								
Advanced sensor component fabrication and laboratory testing			✦	✦																								
Advanced sensor test bed integration and demonstrations			✧	✧																								
Advanced sensor algorithm and prototype software development			✦	✦																								
Acquisition, Pointing, and Tracking sensor characterization			✦	✦																								

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Develop advanced sensor technology	4	2013	4	2013
Advanced sensor component fabrication and laboratory testing	3	2013	4	2013
Advanced sensor test bed integration and demonstrations	3	2013	4	2013
Advanced sensor algorithm and prototype software development	3	2013	4	2013
Acquisition, Pointing, and Tracking sensor characterization	3	2013	4	2013

Note

No funding was received during the first and second quarter of FY13 during CRA.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
--	---	--

COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	0.898	-	-	-	-	-	-	-	-	-	0.898
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

The FY 2015 OCO Request will be submitted at a later date.

Note

N/A

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of Missile Defense Agency (MDA) functions and activities across the entire Ballistic Missile Defense System (BMDS). It includes Government Civilians, Contract Support Service, and Federally Funded Research and Development Center (FFRDC) providing integrity and oversight of the BMDS as well as, supporting MDA in enabling the development and evaluation of technologies that will respond to the changing threat. In addition, includes Global Deployment personnel and support performing deployment site preparation and activation. Other costs included provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, travel and agency training, office and equipment leases, rents and utilities, data and unified communications support, supplies and maintenance, logistics and central property management of equipment, and similar operating expenses. Also includes legal settlements. In keeping with congressional intent, PWS is allocated on a pro-rata basis and therefore, fluctuates by year based on the total MDA budget.

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	0.898	-	-
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2014 Plans: FY 2014 plans have been transferred to BMD Technology (0603175C) Program Element			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	0.898	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

Remarks

D. Acquisition Strategy
NA

E. Performance Metrics
NA

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
--	---	--

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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			
Program Wide Support - Agency Operations and Support Services	Reqn	Various : Multi: AL, CA, CO, VA	0.000	-		-		-		-		-	-	-	-
Program Wide Support - Facilities and Maintenance	MIPR	Various : Multi: AL, CA, CO, VA	0.000	0.898		-		-		-		-	-	0.898	-
Subtotal			0.000	0.898		-		-		-		-	-	0.898	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.898	-	-	-	-	-	0.898	-

Remarks
N/A