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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army **Date:** February 2016

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0605052A / Indirect Fire Protection Capability Increment 2
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	83.995	-	83.995	63.370	43.204	109.323	133.326	0.000	433.218
EY7: IFPC Increment 2 - Block 1	-	0.000	0.000	83.995	-	83.995	63.370	43.204	109.323	133.326	0.000	433.218

Note

Funding for FY17 and out has been realigned for Block 1 activities from BA4, PE 0604319/DU3 to BA5, PE 0605052/EY7.

A. Mission Description and Budget Item Justification

This program supports the overall Air and Missile Defense (AMD) architecture and provides a robust intercept capability against Cruise Missiles (CM), Unmanned Aircraft System (UAS) and Rocket, Artillery, and Mortar (RAM) threats for deployed forces. The Indirect Fire Protection Capability Increment 2 - Intercept (IFPC Inc 2-I) is a ground-based weapon system that will be designed to acquire, track, engage, and defeat UAS, CM, and RAM. The System will provide 360-degree protection and will simultaneously engage threats arriving from different azimuths. A block acquisition approach will be used to provide this capability. The Block 1 system will consist of an existing interceptor and sensor and development of fire control software and a Multi-Mission Launcher (MML) to support the UAS and CM mission. The IFPC Inc 2-I System will be compatible with the Army Integrated Air and Missile Defense (IAMD) Command and Control (C2) architecture. The IFPC Inc 2-I System will be transportable by Army common mobile platforms.

B. Program Change Summary (\$ in Millions)

	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017 Base</u>	<u>FY 2017 OCO</u>	<u>FY 2017 Total</u>
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	83.995	-	83.995
Total Adjustments	0.000	0.000	83.995	-	83.995
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	83.995	-	83.995

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Army										Date: February 2016		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605052A / Indirect Fire Protection Capability Increment 2				Project (Number/Name) EY7 / IFPC Increment 2 - Block 1			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EY7: IFPC Increment 2 - Block 1	-	0.000	0.000	83.995	-	83.995	63.370	43.204	109.323	133.326	0.000	433.218
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funding for FY17 and out has been realigned for Block 1 activities from BA4, PE 0604319/DU3 to BA5, PE 0605052/EY7.

A. Mission Description and Budget Item Justification

This program supports the overall Air and Missile Defense (AMD) architecture and provides a robust intercept capability against Cruise Missiles (CM), Unmanned Aircraft System (UAS) and Rocket, Artillery, and Mortar (RAM) threats for deployed forces. The Indirect Fire Protection Capability Increment 2 - Intercept (IFPC Inc 2-I) is a ground-based weapon system that will be designed to acquire, track, engage, and defeat UAS, CM, and RAM. The System will provide 360-degree protection and will simultaneously engage threats arriving from different azimuths. A block acquisition approach will be used to provide this capability. The Block 1 system will consist of an existing interceptor and sensor and development of fire control software and a Multi-Mission Launcher (MML) to support the UAS and CM mission. The IFPC Inc 2-I System will be compatible with the Army Integrated Air and Missile Defense (IAMD) Command and Control (C2) architecture. The IFPC Inc 2-I System will be transportable by Army common mobile platforms.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Indirect Fire Protection Capability Increment 2 - Intercept (IFPC Inc 2-I) System Engineering & Program Management	-	-	25.134	-	25.134
Description: Funding is provided for the following efforts:					
FY 2017 Base Plans:					
- Continue RDT&E efforts associated with the Engineering and Manufacturing Development (EMD) phase					
- Perform system engineering, logistics engineering, system test and evaluation management, technical control, and business management activities					
- Conduct system and program reviews					
- Begin Milestone C preparation and documentation activities					
- Continue Interceptor Pre-Milestone preparation and documentation activities					
Title: IFPC Inc 2-I Engineering and Technical Support	-	-	36.592	-	36.592
Description: Funding is provided for the following efforts:					
FY 2017 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605052A / <i>Indirect Fire Protection Capability Increment 2</i>	Project (Number/Name) EY7 / <i>IFPC Increment 2 - Block 1</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
- Continue engineering and technical support for design of system hardware, software, and integration requirements and definition - Participate in system and program reviews - Perform technical assessments, concept studies, cost reduction, risk reduction, final design, and required documentation					
Title: IFPC Inc 2-I System/Subsystem Development, Integration, and Testing Description: Funding is provided for the following efforts: FY 2017 Base Plans: - Continue system component hardware, software, and integration development activities - Participate in system and program reviews - Continue development of technical data package - Perform integration, component, and system level risk reduction - Continue system/subsystem hardware, software, and integration test activities - Continue manufacturing, assembly, and integration of Engineering and Manufacturing Development (EMD) phase test assets, to include all Major End Items (MEIs)	-	-	22.269	-	22.269
Accomplishments/Planned Programs Subtotals	-	-	83.995	-	83.995

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PE 0605456A, Proj PA3: <i>PAC-3/MSE MISSILE</i>	33.709	2.272	-	-	-	-	-	-	-	0.000	35.981
• SSN C53101: <i>MSE Missile</i>	532.605	514.946	423.201	-	423.201	459.040	497.009	529.839	520.513	Continuing	Continuing
• PE 0205456A, Proj EF9: <i>System Integration and Test</i>	78.720	64.159	69.417	-	69.417	79.562	80.962	96.042	113.641	Continuing	Continuing
• PE 0604114A, Proj EX2: <i>Lower Tier Air Missile Defense (LTAMD) Capability</i>	-	-	35.132	-	35.132	-	78.820	-	-	Continuing	Continuing
• SSN C50016: <i>Lower Tier Air and Missile Defense (AMD)</i>	110.300	115.075	126.470	-	126.470	112.888	122.768	150.444	120.542	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Army **Date:** February 2016

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605052A / Indirect Fire Protection Capability Increment 2	Project (Number/Name) EY7 / IFPC Increment 2 - Block 1
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PE 0202429A, Proj EP8: <i>JLENS COCOM EXERCISE</i>	43.248	10.565	45.482	-	45.482	6.746	-	-	-	0	106.041
• PE 0604319A, Proj DU3: <i>IFPC2</i>	92.475	155.361	-	-	-	40.003	80.004	120.004	120.006	Continuing	Continuing
• SSN C62002: <i>IFPC</i> <i>Inc 2-I Block 1 Missile</i>	-	-	-	-	-	73.552	123.106	186.840	146.300	Continuing	Continuing
• SSN C62001: <i>IFPC</i> <i>Inc 2-I Block 1 System</i>	-	-	19.319	-	19.319	47.289	138.547	174.760	287.325	Continuing	Continuing
• PE 0604820A, Proj E10: <i>Sentinel</i>	5.022	12.309	15.983	-	15.983	20.844	20.612	30.106	41.402	Continuing	Continuing
• PE 0605457A, Proj S40: <i>Army Integrated Air and Missile Defense (AIAMD)</i>	147.250	222.075	252.811	-	252.811	169.070	152.942	32.914	34.447	Continuing	Continuing
• SSN BZ5075: <i>IAMD Battle Command System</i>	-	20.917	204.969	-	204.969	287.220	372.916	440.567	439.780	Continuing	Continuing
• PE 0604741A, Proj 146, 149: <i>Air Defense C2I Eng Dev</i>	15.294	34.569	36.256	-	36.256	20.141	19.658	17.738	11.651	Continuing	Continuing
• SSN AD50700: <i>AIR & MSL Defense Planning & Control Sys</i>	27.374	28.176	54.376	69.958	124.334	17.005	17.960	6.366	6.951	Continuing	Continuing

Remarks

This program is an integral part of the Army Integrated Air and Missile Defense (IAMD) architecture.

D. Acquisition Strategy

The Materiel Development Decision (MDD) was completed in fourth quarter Fiscal Year (FY) 2011, allowing for the initiation of an Analysis of Alternatives (AoA) to determine materiel solution approach; establishment of requirement baseline; initiation of development of required Milestone documents and execution of the Milestone decision to continue with Research, Development, Test, & Evaluation (RDT&E) efforts associated with conducting an Engineering Demonstration.

The Government will fund the Aviation and Missile Research Development and Engineering Center (AMRDEC) for the development and demonstration of the Multi-Mission Launcher (MML) during the Technology Maturation and Risk Reduction (TMRR) phase of the program. An independent Cost Benefit Analysis (CBA) was completed, and the recommendation was made to continue organic development through the Engineering and Manufacturing Development (EMD) Phase.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army **Date:** February 2016

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Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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 Management Admin	MIPR	Cruise Missile Defense Systems Project Office : Huntsville, Alabama	0.000	-		-		8.778	Jan 2017	-		8.778	0	8.778	0
Subtotal			0.000	-		-		8.778		-		8.778	0.000	8.778	0.000

Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
System Engineering & Integration	MIPR	Cruise Missile Defense Systems Project Office : Huntsville, AL	0.000	-		-		16.356	Jan 2017	-		16.356	0	16.356	0
Engineering and Technical Support	MIPR	Multiple Activities : Multiple Locations	0.000	-		-		36.592	Jan 2017	-		36.592	0	36.592	0
System/Subsystem Development, Integration, and Test	MIPR	Multiple Activities : Multiple Locations	0.000	-		-		22.269	Jan 2017	-		22.269	0	22.269	0
Subtotal			0.000	-		-		75.217		-		75.217	0.000	75.217	0.000

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	0.000	83.995	-	83.995	0.000	83.995	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army **Date:** February 2016

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Event Name	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021											
	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								
(1) Block 1 Milestone B	Bik 1 Milestone B ▲																																			
Block 1 Engineering and Manufacturing Development (EMD) Phase																													Bik 1 EMD Phase							
Block 1 Limited User Test (LUT)																													Bik 1 LUT							
(2) Block 1 Milestone C																													Bik 1 Milestone C ▲							
Block 1 Initial Operational Test & Evaluation (IOT&E)																													Bik 1 IOT&E							
(3) Block 2 Material Development Decision (MDD)																													Bik 2 MDD ▲							
Block 2 EMD Phase													Bik 2 EMD Phase																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605052A / <i>Indirect Fire Protection Capability Increment 2</i>	Project (Number/Name) EY7 / <i>IFPC Increment 2 - Block 1</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 1 Milestone B	3	2016	3	2016
Block 1 Engineering and Manufacturing Development (EMD) Phase	3	2016	3	2018
Block 1 Limited User Test (LUT)	2	2018	2	2018
Block 1 Milestone C	4	2018	4	2018
Block 1 Initial Operational Test & Evaluation (IOT&E)	3	2019	3	2019
Block 2 Material Development Decision (MDD)	1	2018	1	2018
Block 2 EMD Phase	4	2019	4	2023

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