

UNCLASSIFIED

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

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0604319A / Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)
--	---

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	-	92.475	155.361	0.000	-	0.000	40.003	80.004	120.004	120.006	0.000	607.853
DU3: IFPC2	-	92.475	155.361	0.000	-	0.000	40.003	80.004	120.004	120.006	0.000	607.853

Note

Funding for FY17 and out for Block 1 activities has been realigned 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. Development of a second Interceptor for Block 1 begins in FY18.

The FY 2017 funding request was reduced by \$5.000 million to account for the availability of prior year execution balances.

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	96.131	155.361	90.323	-	90.323
Current President's Budget	92.475	155.361	0.000	-	0.000
Total Adjustments	-3.656	0.000	-90.323	-	-90.323
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.656	-			
• Under-Execution Adjustment	-	-	-5.000	-	-5.000
• Other Adjustments 2	-	-	-85.323	-	-85.323

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army										Date: February 2016		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604319A / <i>Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)</i>				Project (Number/Name) DU3 / <i>IFPC2</i>			
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
DU3: <i>IFPC2</i>	-	92.475	155.361	0.000	-	0.000	40.003	80.004	120.004	120.006	0.000	607.853
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. Development of a second Interceptor for Block 1 begins in FY18.

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	26.972	28.580	-	-	-
Description: Funding is provided for the following efforts:					
FY 2015 Accomplishments:					
- Continued Research, Development, Test, & Evaluation (RDT&E) efforts associated with Engineering Demonstration					
- Performed system engineering, logistics engineering, system test and evaluation management, technical control, and business management activities					
- Conducted system and program reviews					
- Performed technical assessments, concept studies, cost reduction, risk reduction, and required documentation					
FY 2016 Plans:					
- Continue RDT&E efforts associated with Engineering Demonstration					
- Perform system engineering, logistics engineering, system test and evaluation management, technical control, and business management activities					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army				Date: February 2016	
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604319A / <i>Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)</i>		Project (Number/Name) DU3 / <i>IFPC2</i>		
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
<ul style="list-style-type: none"> - Conduct system and program reviews - Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation - Conduct Milestone B preparation, documentation, and execution activities - Transition from Technology Maturation and Risk Reduction (TMRR) to Engineering and Manufacturing Development (EMD) phase - Begin Interceptor Pre-Milestone preparation and documentation activities 					
<p>Title: IFPC Inc 2-I Engineering and Technical Support</p> <p>Description: Funding is provided for the following efforts:</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Continued engineering and technical support for design of system hardware, software, and integration requirements and definition - Participated in system and program reviews - Performed technical assessments, concept studies, cost reduction, risk reduction, launch demonstration, and required documentation <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> - Continue engineering and technical support for design of system hardware, software, and integration requirements and definition, to include all Major End Items (MEIs) - Participate in system and program reviews - Perform technical assessments, concept studies, cost reduction, risk reduction, Engineering Demonstration, and required documentation 	50.549	48.655	-	-	-
<p>Title: IFPC Inc 2-I System/Subsystem Development, Integration, and Testing</p> <p>Description: Funding is provided for the following efforts:</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Continued system component hardware, software, and integration development activities - Participated in system and program reviews - Continued development of technical data documentation - Performed technical assessments, concept studies, cost reduction, required documentation, and integration, component, and system level risk reduction 	14.954	78.126	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604319A / <i>Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)</i>	Project (Number/Name) DU3 / <i>IFPC2</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
- Continued system/subsystem hardware, software, integration, and test activities and launch demonstration					
<i>FY 2016 Plans:</i>					
- Continue system component hardware, software, and integration development activities					
- Participate in system and program reviews					
- Continue development of technical data package					
- Perform technical assessments, concept studies, cost reduction, required documentation, and integration, component, and system level risk reduction					
- Continue system/subsystem hardware, software, and integration test activities					
- Complete manufacturing, assembly, and integration of Multi-Mission Launcher (MML) prototypes					
- Conduct Engineering Demonstration					
- Purchase test assets, components, and risk reduction items					
Accomplishments/Planned Programs Subtotals	92.475	155.361	-	-	-

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	93.208	78.820	87.128	84.826	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	120.006	Continuing	Continuing
• PE 0202429A, Proj EP8: <i>JLENS COCOM EXERCISE</i>	43.248	10.565	45.482	-	45.482	6.746	-	-	-	0	106.041
• PE 0605052A, Proj EY7: <i>IFPC Increment 2 - Block 1</i>	-	-	83.995	-	83.995	63.370	43.204	109.323	133.326	Continuing	Continuing
• SSN C62002: <i>IFPC Inc 2-I Block 1 Missile</i>	-	-	-	-	-	73.552	123.106	186.480	146.300	Continuing	Continuing

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604319A / <i>Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)</i>	Project (Number/Name) DU3 / <i>IFPC2</i>

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

Line Item	FY 2015	FY 2016	FY 2017	FY 2017	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Cost To	
			Base	OCO	Total					Complete	Total Cost
• SSN C62001: <i>IFPC 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 604741A, 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

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army												Date: February 2016			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 4				PE 0604319A / Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)				DU3 / IFPC2							
Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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
Program Management Admin	MIPR	Cruise Missile Defense Systems Project Office : Huntsville, Alabama	10.216	8.440		9.988	Jan 2016	-		-		-	Continuing	Continuing	Continuing
Subtotal			10.216	8.440		9.988		-		-		-	-	-	-
Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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
System Engineering & Integration	MIPR	Cruise Missile Defense Systems Project Office : Huntsville, AL	19.385	18.532		18.592	Jan 2016	-		-		-	Continuing	Continuing	Continuing
Engineering and Technical Support	MIPR	Multiple Activities : Multiple Locations	43.666	50.549		48.655	Jan 2016	-		-		-	Continuing	Continuing	Continuing
System/Subsystem Development, Integration, and Test	MIPR	Multiple Activities : Multiple Locations	29.002	14.954		78.126	Jan 2016	-		-		-	Continuing	Continuing	Continuing
Subtotal			92.053	84.035		145.373		-		-		-	-	-	-
Project Cost Totals			102.269	92.475		155.361		-		-		-	-	-	-
Remarks															

UNCLASSIFIED

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

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604319A / <i>Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)</i>	Project (Number/Name) DU3 / <i>IFPC2</i>
--	--	--

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
Block 1 Pre-Milestone B Activities	Blk 1 Pre-Milestone B Activities																											
Engineering Demonstration (ED)	ED ■																											
(1) Block 1 Milestone B	Blk 1 Milestone B ▲																											
(2) Blk 1 Interceptor 2 Materiel Development Decision (MDD)	Interceptor 2 MDD ▲																											
(3) Blk 1 Interceptor 2 Milestone Decision	Interceptor 2 Milestone Decision ▲																											
Blk 1 Interceptor 2 Development	Interceptor 2 Dev ■																											

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604319A / <i>Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)</i>	Project (Number/Name) DU3 / <i>IFPC2</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 1 Pre-Milestone B Activities	1	2014	3	2016
Engineering Demonstration (ED)	2	2016	2	2016
Block 1 Milestone B	3	2016	3	2016
Blk 1 Interceptor 2 Materiel Development Decision (MDD)	1	2017	1	2017
Blk 1 Interceptor 2 Milestone Decision	3	2019	3	2019
Blk 1 Interceptor 2 Development	3	2019	4	2023