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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army **Date:** May 2017

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army</i> / BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 Program Element (Number/Name) PE 0604319A / <i>Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)</i>							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	149.222	0.000	11.303	-	11.303	52.604	239.305	259.804	316.104	Continuing	Continuing
DU3: <i>IFPC2</i>	-	149.222	0.000	11.303	-	11.303	52.604	239.305	259.804	316.104	Continuing	Continuing

Note

Funding for FY17 and out for IFPC Inc 2-I Block 1 system development activities has been realigned from BA4, PE 0604319/DU3 to BA5, PE 0605052/EY7 as the program transitions to EMD.

A. Mission Description and Budget Item Justification

This program supports the overall integrated Air and Missile Defense (AMD) architecture and provides a robust intercept capability against Cruise Missiles (CM), Unmanned Aircraft System (UAS) and an initial capability against Rocket, Artillery, and Mortar (RAM) threats for deployed forces, to include continued analysis and design.

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 the UAS, CM, and RAM threats. Initial IFPC 2-I system development was funded on this line through FY16. 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 IFPC Inc 2-I 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 defeat 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.

The IFPC Inc 2-I second interceptor will expand the Block 1 system's target set by enabling an initial counter - rocket, artillery, and mortar (C-RAM) capability through a kinetic intercept capability. Integration of second interceptor for IFPC Inc 2-I Block 1.

FY2018 base dollars in the amount of \$11.303 million funds the integration and testing of a second interceptor into the IFPC Inc 2-I Block 1 Multi-Mission Launcher.

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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army				Date: May 2017	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0604319A / Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)			
B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	155.361	0.000	40.003	-	40.003
Current President's Budget	149.222	0.000	11.303	-	11.303
Total Adjustments	-6.139	0.000	-28.700	-	-28.700
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-6.139	-			
• Adjustments to Budget Year	0.000	0.000	-28.700	-	-28.700
Change Summary Explanation					
Funding for IFPC Inc 2-I Block 1 system development activities was realigned in accordance with the Army Cost Position from BA4, PE 0604319/DU3 to BA5, PE 0605052/EY7 as the program transitions to EMD, the remaining \$11.3M in FY18 funds were designated for IFPC Inc 2-I Block 1 Second Interceptor development, integration, and testing.					

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Army										Date: May 2017		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604319A / Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)				Project (Number/Name) DU3 / IFPC2			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
DU3: IFPC2	-	149.222	0.000	11.303	-	11.303	52.604	239.305	259.804	316.104	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
Funding for FY17 and out for IFPC Inc 2-I Block 1 system development activities has been realigned from BA4, PE 0604319/DU3 to BA5, PE 0605052/EY7 as the program transitions to EMD.												
A. Mission Description and Budget Item Justification												
This program supports the overall integrated Air and Missile Defense (AMD) architecture and provides a robust intercept capability against Cruise Missiles (CM), Unmanned Aircraft System (UAS) and an initial capability against Rocket, Artillery, and Mortar (RAM) threats for deployed forces, to include continued analysis and design.												
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 the UAS, CM, and RAM threats. Initial IFPC 2-I system development was funded on this line through FY16. 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 IFPC Inc 2-I 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 defeat 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.												
The IFPC Inc 2-I second interceptor will expand the Block 1 system's target set by enabling an initial counter - rocket, artillery, and mortar (C-RAM) capability through a kinetic intercept capability. Integration of second interceptor for IFPC Inc 2-I Block 1.												
FY2018 base dollars in the amount of \$11.303 million funds integration and testing of a second interceptor into the IFPC Inc 2-I Block 1 Multi-Mission Launcher.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: System Engineering & Program Management (SEPM)								26.534	-	6.503	-	6.503
Description: Funding is provided for the following efforts:												
FY 2016 Accomplishments:												
- Continue RDT&E efforts associated with Engineering Demonstration												
- Perform system engineering, logistics engineering, system test and evaluation management, technical control, and business management activities												

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Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604319A / Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)	Project (Number/Name) DU3 / IFPC2				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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>FY 2018 Base Plans:</p> <ul style="list-style-type: none">- Initiate RDT&E efforts associated with IFPC Increment 2-I Block 1 second interceptor- Perform system engineering, integration, logistics engineering, system test and evaluation management, technical configuration control, cost and business management activities- Conduct system technical reviews and program management reviews- Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation- Conduct program decision preparation, documentation, and execution activities						
<p>Title: Engineering and Technical Support</p> <p>Description: Funding is provided for the following efforts:</p> <p>FY 2016 Accomplishments:</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 <p>FY 2018 Base Plans:</p> <ul style="list-style-type: none">- Initiate IFPC Increment 2-I Block 1 second interceptor engineering and technical support for design of system hardware, software, and integration requirements and definition- Participate in system technical and program management reviews- Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation		46.609	-	0.200	-	0.200
<p>Title: System/Subsystem Development and Integration</p> <p>Description: Funding is provided for the following efforts:</p> <p>FY 2016 Accomplishments:</p>		76.079	-	4.191	-	4.191

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Appropriation/Budget Activity 2040 / 4				R-1 Program Element (Number/Name) PE 0604319A / Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)				Project (Number/Name) DU3 / IFPC2			
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
<div>- Continue system component hardware, software, and integration development activities</div> <div>- Participate in system and program reviews</div> <div>- Continue development of technical data package</div> <div>- Perform technical assessments, concept studies, cost reduction, required documentation, integration, component, and system level risk reduction</div> <div>- Continue system/subsystem hardware, software, and integration test activities</div> <div>- Complete manufacturing, assembly, and integration of Multi-Mission Launcher (MML) prototypes</div> <div>- Conduct Engineering Demonstration</div> <div>- Purchase test assets, components, and risk reduction items</div> <div>FY 2018 Base Plans:</div> <div>- Initiate IFPC Increment 2-I Block 1 second interceptor hardware and software integration activities</div> <div>- Participate in system technical and program management reviews</div> <div>- Perform technical assessments, concept studies, cost reduction, required documentation, integration and component risk reduction</div>											
Title: System/Subsystem Developmental Testing							-	-	0.409	-	0.409
FY 2018 Base Plans:											
<div>- Initiate Developmental testing activities</div> <div>- Initiate Modeling and Simulation test activities</div> <div>- Initiate Cyber Security test activities</div>											
Accomplishments/Planned Programs Subtotals							149.222	-	11.303	-	11.303
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• PE 0605456A, Proj PA3: PAC-3/MSE MISSILE	2.201	-	-	-	-	-	-	-	-	0.000	2.201
• SSN C53101: MSE Missile	514.946	702.201	459.040	-	459.040	499.915	540.669	523.413	524.934	Continuing	Continuing
• PE 0205456A, Proj EF9: System Integration and Test	61.653	73.417	78.926	-	78.926	80.314	109.222	112.614	123.007	Continuing	Continuing

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Appropriation/Budget Activity 2040 / 4				R-1 Program Element (Number/Name) PE 0604319A / Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)				Project (Number/Name) DU3 / IFPC2				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost	
• PE 0604114A, Proj EX2: Lower Tier Air Missile Defense (LTAMD) Capability	-	35.132	76.728	-	76.728	67.088	83.195	141.185	142.000	Continuing	Continuing	
• SSN C50016: Lower Tier Air and Missile Defense (AMD)	130.275	126.470	140.826	-	140.826	125.161	144.243	119.282	121.825	Continuing	Continuing	
• PE 0605052A, Proj EY7: IFPC Increment 2 - Block 1	-	83.995	175.069	-	175.069	149.506	52.300	24.700	-	Continuing	Continuing	
• SSN C62002: IFPC Inc 2-I Block 1 Missile	-	19.319	-	-	-	31.641	191.830	315.025	277.500	Continuing	Continuing	
• SSN C62001: IFPC Inc 2-I Block 1 System	-	-	57.742	-	57.742	157.406	144.740	100.400	14.600	Continuing	Continuing	
• PE 0604820A, Proj E10: Sentinel	11.821	15.983	32.968	-	32.968	31.761	51.897	72.562	81.351	Continuing	Continuing	
• PE 0605457A, Proj S40: Army Integrated Air and Missile Defense (AIAMD)	222.074	272.811	336.420	-	336.420	290.250	190.600	117.470	64.510	Continuing	Continuing	
• SSN BZ5075: IAMD Battle Command System	20.917	204.969	-	-	-	-	274.494	375.026	513.464	Continuing	Continuing	
• PE 604741A, Proj 146, 149: Air Defense C2I Eng Dev	33.619	61.532	28.726	-	28.726	28.320	14.638	8.674	-	Continuing	Continuing	
• SSN AD50700: AIR & MSL Defense Planning & Control Sys	28.176	126.539	26.635	24.100	50.735	17.960	6.366	32.397	-	Continuing	Continuing	
• SSN C62004: IFPC Inc 2-I Block 2 Missile	-	-	-	-	-	-	-	-	12.300	Continuing	Continuing	
• PE 0605457A, Proj DU4: Advanced Electronic Protection Enhancements AEPE	-	-	23.164	-	23.164	25.010	26.719	26.218	26.500	Continuing	Continuing	
Remarks												
This program is an integral part of the Army Integrated Air and Missile Defense (IAMD) architecture.												
D. Acquisition Strategy												
Funding for FY17 and out for IFPC Inc 2-I Block 1 system development activities has been realigned from BA4, PE 0604319/DU3 to BA5, PE 0605052/EY7 as the program transitions to EMD. Funding for FY18 and out is programmed for IFPC Inc 2-I Block 1 second interceptor.												

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Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604319A / Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)	Project (Number/Name) DU3 / IFPC2
<p>The IFPC Inc 2-I Block 1 Product Office successfully completed a Milestone B Army System Acquisition Review Council (ASARC) on 21 November 2016.</p> <p>The IFPC Inc 2-I Block 1 Second Interceptor Product Office will seek a program decision in 1QFY18. The IFPC Inc 2-I Block 1 Second Interceptor Product Office plans to award funds for the integration and testing of the second interceptor utilizing a two-phased approach with a demonstration of interceptors from multiple vendors during phase one with a down-select to a single vendor for phase two. Phase two will consist of activities to finalize design and integration of the interceptor and conduct developmental testing.</p> <p>E. Performance Metrics N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army												Date: May 2017			
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>			
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 (IFPC Base System)	MIPR	Cruise Missile Defense Systems Project Office : Huntsville, Alabama	18.656	9.988	Jan 2016	-		-		-		-	Continuing	Continuing	Continuing
Program Management Admin	Various	Various : Huntsville, Alabama	0.000	-		-		4.903	Oct 2017	-		4.903	Continuing	Continuing	Continuing
Subtotal			18.656	9.988		-		4.903		-		4.903	-	-	-
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 (IFPC Base System)	MIPR	Cruise Missile Defense Systems Project Office : Huntsville, AL	37.917	16.546	Jan 2016	-		-		-		-	Continuing	Continuing	Continuing
System Engineering & Integration	MIPR	Cruise Missile Defense Systems Project Office : Huntsville, AL	0.000	-		-		1.600	May 2018	-		1.600	Continuing	Continuing	Continuing
Engineering and Technical Support (IFPC Base System)	MIPR	Multiple Activities : Multiple Locations	94.215	46.609	Jan 2016	-		-		-		-	Continuing	Continuing	Continuing
Engineering and Technical Support	MIPR	Multiple Activities : Multiple Locations	0.000	-		-		0.200	May 2018	-		0.200	Continuing	Continuing	Continuing
System/Subsystem Development and Integration (IFPC Base System)	MIPR	Multiple Activities : Multiple Locations	43.956	76.079	Jan 2016	-		-		-		-	Continuing	Continuing	Continuing
System/Subsystem Development and Integration	MIPR	Multiple Activities : Multiple Locations	0.000	-		-		4.191	May 2018	-		4.191	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army													Date: May 2017		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604319A / Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)					Project (Number/Name) DU3 / IFPC2					
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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			176.088	139.234		-		5.991		-		5.991	-	-	-
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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/Subsystem Developmental Testing	IA	Various : Redstone Arsenal, AL	0.000	-		-		0.409	May 2018	-		0.409	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		0.409		-		0.409	-	-	-
			Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			194.744	149.222		0.000		11.303		-		11.303	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army																Date: May 2017																
Appropriation/Budget Activity 2040 / 4										R-1 Program Element (Number/Name) PE 0604319A / Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)								Project (Number/Name) DU3 / IFPC2														
Event Name	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022							
	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 (MS) B Activities																																
Engineering Demonstration (ED)																																
Block 1 Second Interceptor Pre-MS B Activities																																
(1) Block 1 Second Interceptor MS B																																
Block 1 Second Interceptor Engineering and Manufacturing Development																																
(2) Block 1 Second Interceptor MS C																																
Block 1 Second Interceptor Low Rate Initial Production (LRIP)																																
(3) Block 1 Second Interceptor Initial Operational Capability (IOC)																																

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Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army			Date: May 2017
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 (MS) B Activities	1	2014	1	2017
Engineering Demonstration (ED)	2	2016	3	2016
Block 1 Second Interceptor Pre-MS B Activities	1	2018	4	2018
Block 1 Second Interceptor MS B	1	2019	1	2019
Block 1 Second Interceptor Engineering and Manufacturing Development	1	2019	4	2021
Block 1 Second Interceptor MS C	1	2022	1	2022
Block 1 Second Interceptor Low Rate Initial Production (LRIP)	1	2022	4	2022
Block 1 Second Interceptor Initial Operational Capability (IOC)	4	2022	4	2022