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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army										Date: March 2019		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 Program Element (Number/Name) PE 0604319A I Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	10.871	40.979	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51.850
DU3: IFPC2	-	10.871	40.979	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51.850
Program MDAP/MAIS Code: Pre												
Note Starting in FY 2017, IFPC Inc 2-I Block 1 system development funding has been realigned from BA4, PE 0604319/DU3 to BA5, PE 0605052/EY7. In FY 2018 and FY 2019, funding is programmed for Expanded Mission Area Missile (EMAM) interceptor. EMAM program funding for FY 2020 and out has been transferred to BA5 PE 655052/EY7 (IFPC Increment 2 - Block 1) A. Mission Description and Budget Item Justification The EMAM program supports the Integrated Air and Missile Defense (IAMD) architecture and provides Indirect Fire Protection Capability Increment 2 (IFPC Inc 2) the kinetic intercept capability to defeat Cruise Missiles (CM), Unmanned Aircraft System (UAS), and Rocket, Artillery, and Mortar (RAM) threats. The Indirect Fire Protection Capability Increment 2 (IFPC Inc 2) will provide a ground-based weapon system designed to acquire, track, engage, and defeat the Cruise Missiles (CM), Unmanned Aircraft Systems (UAS), and Rockets, Artillery, and Mortar (RAM) threats. The IFPC Inc 2 requirement consists of a launcher, integrated fire control, sensor, and an interceptor to support the Threshold CM and UAS defeat mission and Objective counter-RAM mission with alternative kinetic and non-kinetic defeat solutions. The EMAM program supports IFPC Inc 2 by providing a kinetic interceptor capability against CM, UAS, and enabling an initial counter-Rocket, Artillery, and Mortar (RAM) capability. The IFPC Inc 2 and EMAM systems will be integrated with the Army Integrated Air and Missile Defense (AIAMD) Command and Control (C2) architecture.												

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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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	11.303	51.030	146.731	-	146.731
Current President's Budget	10.871	40.979	0.000	-	0.000
Total Adjustments	-0.432	-10.051	-146.731	-	-146.731
• Congressional General Reductions	-0.009	-0.051			
• Congressional Directed Reductions	-	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.423	-			
• Adjustments to Budget Years	-	-	-146.731	-	-146.731
Change Summary Explanation					
FY 2020 adjustments included a \$22.500 million decrease in the Portfolio Director's Review, a transfer of \$124.228 million to BA5 PE 655052/EY7 (IFPC Increment 2 - Block 1), and a reduction of \$0.003 million to adjust for pay inflation.					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
DU3: IFPC2	-	10.871	40.979	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	51.850
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
Starting in FY 2017, IFPC Inc 2-I Block 1 system development funding has been realigned from BA4, PE 0604319/DU3 to BA5, PE 0605052/EY7.												
In FY 2018 and FY 2019, funding is programmed for Expanded Mission Area Missile (EMAM) interceptor.												
EMAM program funding for FY 2020 and out has been transferred to BA5 PE 655052/EY7 (IFPC Increment 2 - Block 1)												
CFT Supported, IFPC Inc 2 - Block 1.												
A. Mission Description and Budget Item Justification												
The EMAM program supports the Integrated Air and Missile Defense (IAMD) architecture and provides Indirect Fire Protection Capability Increment 2 (IFPC Inc 2) the kinetic intercept capability to defeat Cruise Missiles (CM), Unmanned Aircraft System (UAS), and Rocket, Artillery, and Mortar (RAM) threats.												
The Indirect Fire Protection Capability Increment 2 (IFPC Inc 2) will provide a ground-based weapon system designed to acquire, track, engage, and defeat the Cruise Missiles (CM), Unmanned Aircraft Systems (UAS), and Rocket, Artillery, and Mortar (RAM) threats. The IFPC Inc 2 requirement consists of a launcher, integrated fire control, sensor, and an interceptor to support the Threshold CM and UAS defeat mission and Objective counter-RAM mission with alternative kinetic and non-kinetic defeat solutions. The EMAM program supports IFPC Inc 2 by providing a kinetic interceptor capability against CM, UAS, and enabling an initial counter-Rocket, Artillery, and Mortar (RAM) capability. The IFPC Inc 2 and EMAM systems will be integrated with the Army Integrated Air and Missile Defense (AIAMD) Command and Control (C2) architecture.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: System Engineering & Program Management (SEPM)								6.071	14.459	-	-	-
Description: Funding is provided for systems engineering, integration, logistics engineering, system test and management efforts.												
FY 2019 Plans:												
- Continue RDT&E efforts associated with Second interceptor												
- Perform system engineering, integration, logistics engineering, system test and evaluation management, technical configuration control, cost 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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
<div>- Conduct system technical reviews and program management reviews to include Design Review 2, Systems Requirement Review (SRR) and Systems Functional Review (SFR) of 3 Vendors</div> <div>- Develop Tailored Acquisition Strategy</div> <div>- Verify Technology Readiness</div> <div>- Down Selection process from 3 Vendors to 1 Vendor for Material Solution.</div> <div>- Conduct Preliminary Design Review (PDR)</div> <div>- Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation for Milestone B Decision</div> <div>- Conduct program decision preparation, Milestone B documentation, Source Selection documentation and execution activities</div> <div>FY 2019 to FY 2020 Increase/Decrease Statement: PE 0604319/DU3 has no FY 2020 base dollars budgeted - funding transferred to BA5 PE 655052/EY7 (IFPC Increment 2 - Block 1).</div>						
<div>Title: Engineering and Technical Support</div> <div>Description: Funding is provided for engineering and technical support for the design of system hardware, software, and integration requirements.</div> <div>FY 2019 Plans:</div> <div>- Continue Second Interceptor engineering and technical support for design of system hardware, software, and integration requirements</div> <div>- Develop Tailored Acquisition Strategy</div> <div>- Verify Technology Readiness</div> <div>- Down Selection process from 3 Vendors to 1 Vendor for Material Solution.</div> <div>- Conduct Preliminary Design Review (PDR)</div> <div>- Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation for Milestone B Decision</div> <div>- Conduct program decision preparation, Milestone B documentation, Source Selection documentation and execution activities Participate in system technical and program management reviews</div> <div>- Preparation of Milestone B Decision Briefings and Documentation.</div> <div>FY 2019 to FY 2020 Increase/Decrease Statement:</div>		0.200	1.252	-	-	-

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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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
PE 0604319/DU3 has no FY 2020 base dollars budgeted because funding transferred to BA5 PE 655052/EY7 (IFPC Increment 2 - Block 1).						
Title: System/Subsystem Development and Integration Description: Funding is provided for hardware and software integration activities, technical assessments, concept studies, and integration and risk reduction. FY 2019 Plans: - Continue Second Interceptor hardware and software integration activities - Participate in system technical and program management reviews - Perform technical assessments, concept studies, cost reduction, required documentation, integration and component risk reduction - Develop Tailored Acquisition Strategy - Verify Technology Readiness - Down Selection process from 3 Vendors to 1 Vendor for Material Solution. - Conduct Preliminary Design Review (PDR) - Conduct program decision preparation, Milestone B documentation, Source Selection documentation. - Preparation of Milestone B Decision Briefings and Documentation. FY 2019 to FY 2020 Increase/Decrease Statement: PE 0604319/DU3 has no FY 2020 base dollars budgeted because funding transferred to BA5 PE 655052/EY7 (IFPC Increment 2 - Block 1).		4.191	21.732	-	-	-
Title: System/Subsystem Developmental Testing Description: Funding is provided for developmental testing activities, modeling and simulation test activities, and cyber security test activities. FY 2019 Plans: - Continue Developmental testing activities - Continue Modeling and Simulation test activities - Continue Cyber Security test activities - Participate in system technical and program management reviews - Perform technical assessments, concept studies, cost reduction, required documentation, integration and component risk reduction		0.409	1.713	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions)							FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
- Develop Tailored Acquisition Strategy - Verify Technology Readiness - Down Selection process from 3 Vendors to 1 Vendor for Material Solution. - Conduct Preliminary Design Review (PDR) - Conduct program decision preparation, Milestone B documentation, Source Selection documentation. FY 2019 to FY 2020 Increase/Decrease Statement: PE 0604319/DU3 has no FY 2020 base dollars budgeted because funding transferred to BA5 PE 655052/EY7 (IFPC Increment 2 - Block 1).											
Title: FY 2019 SBIR/ STTR Transfer Description: FY 2019 SBIR / STTR Transfer FY 2019 Plans: FY 2019 SBIR / STTR Transfer FY 2019 to FY 2020 Increase/Decrease Statement: FY 2019 SBIR / STTR Transfer							-	1.823	-	-	-
Accomplishments/Planned Programs Subtotals							10.871	40.979	-	-	-
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• C53101: MSE Missile	1,103.040	1,131.276	0.000	736.541	736.541	767.495	749.530	999.731	898.131	793.430	7,179.174
• 0205456A: Lower Tier Air and Missile Defense (AMD) System	69.558	77.188	107.746	-	107.746	111.080	121.308	37.186	40.999	Continuing	Continuing
• 0604114A: Lower Tier Air Missile Defense (LTAMD) Sensor	57.437	89.248	427.772	-	427.772	376.738	332.322	241.461	87.500	0.000	1,612.478
• C50016: System Integration and Test Procurement	136.579	105.395	0.000	113.857	113.857	105.044	107.288	86.178	87.410	Continuing	Continuing
• 0605052A: Indirect Fire Protection Capability Inc 2 - Block 1	156.361	132.283	243.228	-	243.228	101.000	58.000	45.000	5.000	0.000	740.872
• C62002: IFPC INC 2- I BLOCK 1 SYSTEM	-	31.286	0.000	9.337	9.337	241.387	446.464	424.568	446.541	0.000	1,599.583

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• C61001: INDIRECT FIRE PROTECTION CAPABILITY INC 2-I	50.056	176.922	0.000	9.337	9.337	241.387	446.464	424.568	446.541	Continuing	Continuing
• E10: Sentinel	31.651	39.289	105.243	-	105.243	103.427	105.394	65.574	69.407	0.000	519.985
• S40: Army Integrated Air and Missile Defense	339.051	322.263	208.938	-	208.938	130.859	63.738	33.193	94.845	0.000	1,192.887
• BZ5075: IAMD Battle Command System	-	-	29.629	-	29.629	254.834	353.929	417.426	413.775	Continuing	Continuing
• 0604741A: Air Defense Command, Control and Intelligence - Eng Dev	190.385	212.373	43.502	-	43.502	24.944	7.068	1.228	3.405	0.000	482.905
• AD5070: AIR & MSL Defense Planning & Control Sys	132.713	29.913	24.730	14.331	39.061	49.147	106.671	63.143	0.075	0.000	420.723
Remarks											
This program is an integral part of the Army Integrated Air and Missile Defense (IAMD) architecture.											
D. Acquisition Strategy											
The EMAM Product Office (PO) will verify technology readiness of missile alternatives in FY 2018 and will select one or more missiles to proceed in FY 2019. The PO will continue missile development, integration, and test to support Milestone B in 1QFY2020. The program will conduct Engineering and Manufacturing Development through the end of FY 2022, Milestone C in 1QFY2023, and Initial Operational Test & Evaluation in FY 2023.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
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					
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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	28.644	-		-		-		-		-	Continuing	Continuing	Continuing
Program Management Admin	Various	Multiple Activities : Redstone Arsenal, Alabama	-	4.471	Oct 2017	5.753	Oct 2018	-		-		-	Continuing	Continuing	Continuing
FY 2019 SBIR / STTR Transfer	TBD	TBD : TBD	-	-		1.823		-		-		-	0.000	1.823	-
Subtotal			28.644	4.471		7.576		-		-		-	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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	54.463	-		-		-		-		-	Continuing	Continuing	Continuing
System Engineering & Integration	Various	Multiple Activities : Huntsville, AL	-	1.600	Oct 2017	3.871	Oct 2018	-		-		-	Continuing	Continuing	Continuing
Engineering and Technical Support (IFPC Base System)	MIPR	Multiple Activities : Multiple Locations	140.824	-		-		-		-		-	Continuing	Continuing	Continuing
Engineering and Technical Support	Various	Multiple Activities : Multiple Locations	-	0.200	Oct 2017	1.252	Oct 2018	-		-		-	Continuing	Continuing	Continuing
System/Subsystem Development and Integration (IFPC Base System)	MIPR	Multiple Activities : Multiple Locations	120.035	-		-		-		-		-	Continuing	Continuing	Continuing
System/Subsystem Development and Integration	C/CPFF	TBD : Multiple Locations	-	4.191	Jan 2018	21.732	Feb 2019	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
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 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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			315.322	5.991		26.855		-		-		-	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Log Support	Various	Multiple Activities : Redstone Arsenal, Alabama	-	-		1.934	Oct 2018	-		-		-	0.000	1.934	-
Subtotal			-	-		1.934		-		-		-	0.000	1.934	N/A
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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	MIPR	Multiple Activities : Multiple Locations	-	0.409	Oct 2017	1.713	Oct 2018	-		-		-	Continuing	Continuing	Continuing
Developmental Testing Support	Various	Multiple Activities : Redstone Arsenal, Alabama	-	-		2.901	Oct 2018	-		-		-	Continuing	Continuing	Continuing
Subtotal			-	0.409		4.614		-		-		-	Continuing	Continuing	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			343.966	10.871		40.979		-		-		-	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army																Date: March 2019												
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 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
EMAM Program Decision (Design Review 1)					1 EMAM Program Decision																							
EMAM Integration & Testing					Integration & Testing																							
EMAM Pre-MS B Activities					Pre-MS B Activities																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
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
EMAM Program Decision (Design Review 1)	1	2019	1	2019
EMAM Integration & Testing	4	2018	4	2019
EMAM Pre-MS B Activities	1	2018	4	2019