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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604852A I Suite of Vehicle Protection Systems - EMD							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	0.000	98.600	69.204	-	69.204	47.706	93.852	97.634	120.682	0.000	527.678
FE8: Vehicle Protection Suite	-	0.000	14.800	26.904	-	26.904	47.706	93.852	97.634	120.682	0.000	401.578
XU9: Active Protection System	-	0.000	83.800	42.300	-	42.300	0.000	0.000	0.000	0.000	0.000	126.100

## Note

Project XU9 (Active Protection System) is a continuation of efforts previously executed under PE 0203735A - Combat Vehicle Improvement Programs.

## A. Mission Description and Budget Item Justification

Current ground combat vehicle platforms and tactical wheeled vehicles within Army Brigade Combat Teams (BCTs) lack the ability to effectively detect, track, divert, disrupt, neutralize, or destroy incoming direct or indirect fired threat munitions. Current solutions to defeat these threats, Explosive Reactive Armor (ERA) and Slat armor, do not provide preemptive or active protection and impose secondary blast hazards to crew, dismounted soldiers, and adjacent vehicles and equipment. The Suite of Vehicle Protection Systems - EMD Program Element (0604852A) will develop and mature solutions to increase the protection of the Army's ground systems from both current and next generation direct or indirect fired threat munitions.

The Active Protection System Project (XU9) will install and characterize Non-Developmental Item (NDI) Active Protection Systems on Abrams, Bradley, and Stryker demonstrator vehicles. The Active Protection System effort will assess the maturity, performance, and integration risk of NDI Active Protection Systems, develop and refine Abrams, Bradley, and Stryker Active Protection System installation kit designs, and build prototypes necessary to conduct performance and safety testing to obtain an Active Protection System Urgent Materiel Release (UMR). The Active Protection System NDI effort will also serve to inform the Vehicle Protection Suite Analysis of Alternatives (AoA).

The Vehicle Protection Suite (VPS) Project (FE8) will design, mature, and evaluate combinations of active, reactive, and passive solutions and leverage both Horizontal Technology Integration (HTI) principles and the Army's Modular Active Protection System (MAPS) to develop tailored vehicle Survivability Sets that will mitigate existing protection gaps, allow for future technology insertion to meet evolving threats, and minimize the impact to the current capabilities hosted on Army ground system platforms.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army				Date: February 2018	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604852A / Suite of Vehicle Protection Systems - EMD			
B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	0.000	98.600	28.900	-	28.900
Current President's Budget	0.000	98.600	69.204	-	69.204
Total Adjustments	0.000	0.000	40.304	-	40.304
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Reimbursable to Direct funded Salaries	-	-	-1.996	-	-1.996
• Bradley and Stryker Continued Characterization Effort	-	-	42.300	-	42.300
Change Summary Explanation					
- Reduction of funding to move salaries from program line (reimbursable) to be funded direct in OMA 43510700.					
- Increase of \$42.300 million for continuation of Bradley and Stryker Non-Developmental Item Active Protection System.					

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army									Date: February 2018			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604852A / Suite of Vehicle Protection Systems - EMD				Project (Number/Name) FE8 / Vehicle Protection Suite			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
FE8: Vehicle Protection Suite	-	0.000	14.800	26.904	-	26.904	47.706	93.852	97.634	120.682	0.000	401.578
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Current ground combat vehicle platforms and tactical wheeled vehicles within Army Brigade Combat Teams (BCTs) lack the ability to effectively detect, track, divert, disrupt, neutralize, or destroy incoming direct or indirect fired threat munitions. Current solutions to defeat these threats, Explosive Reactive Armor (ERA) and Slat armor, do not provide preemptive or active protection and impose secondary blast hazards to crew, dismounted soldiers, and adjacent vehicles and equipment.												
Vehicle Protection Suite (VPS) will design, mature, and evaluate combinations of active, reactive, and passive solutions and leverage both Horizontal Technology Integration (HTI) principles and the Army's Modular Active Protection System (MAPS) to develop tailored vehicle Survivability Sets that will mitigate existing protection gaps, allow for future technology insertion to meet evolving threats, and minimize the impact to the current capabilities hosted on Army ground system platforms.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Maturation and Characterization of MAPS Compliant/Non-developmental Item (NDI) Capabilities								-	8.200	11.257	-	11.257
Description: Funding provided supports MAPS maturation efforts.												
FY 2018 Plans:												
Maturation and characterization of MAPS compliant/NDI capabilities (Hardware, Software, Interfaces, etc.). Results will inform VPS Analysis of Alternatives (AoA).												
FY 2019 Base Plans:												
Continues maturation and characterization of MAPS compliant/NDI capabilities (Hardware, Software, Interfaces, etc.). Results will inform VPS Analysis of Alternatives (AoA).												
FY 2018 to FY 2019 Increase/Decrease Statement:												
FY 2019 supports an increased level of safety and survivability characterization testing.												
Title: VPS - Analysis of Alternatives (AoA)								-	3.050	2.860	-	2.860
Description: Funding provided support VPS Analysis of Alternatives (AoA) .												
FY 2018 Plans:												
Perform Analysis of Alternatives (AoA) of both existing and developmental active, reactive, and passive protection solutions. The VPS AoA will assess the cost, maturity, complexity, performance, and physical												

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Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604852A / Suite of Vehicle Protection Systems - EMD		Project (Number/Name) FE8 / Vehicle Protection Suite		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
properties of alternative survivability sets to determine the optimal application of VPS into to the Army's ground platforms. <b>FY 2019 Base Plans:</b> Continuing Analysis of Alternatives (AoA) of both existing and developmental active, reactive, and passive protection solutions. The VPS AoA will assess the cost, maturity, complexity, performance, and physical properties of alternative survivability sets to determine the optimal application of VPS into to the Army's ground platforms. <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> FY 2018 plan supports the initial 9 months of effort required to execute the VPS AoA. FY 2019 plan supports the final 8 months of effort required to complete the VPS AoA.						
<b>Title:</b> Source Selection Evaluation Board  <b>Description:</b> Funding provided support VPS Source Selection Board (SSEB) efforts  <b>FY 2019 Base Plans:</b> The VPS SSEB will evaluate vendor(s) to develop MAPS-compliant VPS survivability sets for integration or installation on selected platforms across the vehicle fleet.  <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> FY 2019 plan includes initiation of the VPS Source Selection Evaluation Boards (SSEB).		-	-	6.080	-	6.080
<b>Title:</b> Vehicle Protection Suite Government Engineering and Program Management  <b>Description:</b> Funding provided support government management support for VPS, MAPS oversight, and SSEB preparation  <b>FY 2018 Plans:</b> Government program management support (labor, travel, training, supplies, and equipment) to support VPS program planning, to include the oversight of MAPS characterization, the VPS AoA, and preparation for source selection of vendor(s) to develop MAPS-compliant VPS survivability sets.  <b>FY 2019 Base Plans:</b>		-	2.350	6.707	-	6.707

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 Army				<b>Date:</b> February 2018	
<b>Appropriation/Budget Activity</b> 2040 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604852A / Suite of Vehicle Protection Systems - EMD		<b>Project (Number/Name)</b> FE8 / Vehicle Protection Suite	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>					
	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>
Continuing government program management support (labor, travel, training, supplies, and equipment) to support VPS program planning, to include the oversight of MAPS characterization.					
<b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> VPS program initiation in FY 2018 reflects partial year of program oversight. FY2019 reflective of a full year of program oversight.					
<b>Title:</b> MAPS Controller Characterization - Test Support					
<b>Description:</b> Funding provided support MAPS test support					
<b>FY 2018 Plans:</b> Test planning support in preparation for FY19 characterization of the MAPS controller					
<b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Decrease is due to completion of the characterization test planning effort.					
<b>Accomplishments/Planned Programs Subtotals</b>					
	-	14.800	26.904	-	26.904
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A					
<b>Remarks</b>					
<b>D. Acquisition Strategy</b> In FY 2018, the VPS program will initiate characterization of the MAPS compliant/NDI capabilities (Hardware, Software, Interfaces, etc.) to inform the VPS Analysis of Alternatives (AoA). The VPS AoA will assess the cost, maturity, complexity, performance and physical properties of alternative survivability sets to determine the optimal application of VPS into the Army's ground platforms. A. Source Selection Evaluation Boards (SSEB) will be initiated in FY19 to select vendor(s) to develop MAPS-compliant VPS survivability sets for integration or installation on selected platforms across the vehicle fleet. The VPS platform integration contracts are planned for award in the first quarter of FY 2020.					
<b>E. Performance Metrics</b> N/A					

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2019 Army</b>												<b>Date: February 2018</b>			
<b>Appropriation/Budget Activity</b> 2040 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604852A / Suite of Vehicle Protection Systems - EMD						<b>Project (Number/Name)</b> FE8 / Vehicle Protection Suite			
<b>Management Services (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Vehicle Protection Suite Program Management	MIPR	TACOM Warren, Michigan : Various	-	-		2.350	Oct 2017	6.707	Oct 2018	-		6.707	28.196	37.253	-
<b>Subtotal</b>			-	-		2.350		6.707		-		6.707	28.196	37.253	N/A
<b>Product Development (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Maturation and Characterization of MAPS Compliant/Non-developmental Item (NDI) Capabilities	MIPR	Various TACOM Warren : Warren, MI	-	-		8.200	Nov 2017	11.257	Dec 2018	-		11.257	0.000	19.457	-
<b>Subtotal</b>			-	-		8.200		11.257		-		11.257	0.000	19.457	N/A
<b>Support (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Vehicle Protection Suite Analysis of Alternatives (AoA)	MIPR	Various : TACOM Warren Michigan	-	-		3.050	Jan 2018	2.860	Jan 2019	-		2.860	0.000	5.910	-
VPS Source Selection Evaluation Board	MIPR	Various : TACOM Warren Michigan	-	-		-		6.080	Dec 2018	-		6.080	0.000	6.080	-
<b>Subtotal</b>			-	-		3.050		8.940		-		8.940	0.000	11.990	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2019 Army													<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 2040 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604852A / Suite of Vehicle Protection Systems - EMD				<b>Project (Number/Name)</b> FE8 / Vehicle Protection Suite					
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
MAPS enabled softkill/hardkill characterization planning	MIPR	TACOM : Warren, MI	-	-		1.200	Aug 2018	-		-		-	Continuing	Continuing	Continuing
<b>Subtotal</b>			-	-		1.200		-		-		-	Continuing	Continuing	N/A
<b>Remarks</b> N/A															
			<b>Prior Years</b>	<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			-	-		14.800		26.904		-		26.904	Continuing	Continuing	N/A
<b>Remarks</b>															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2019 Army</b>			<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 2040 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604852A / Suite of Vehicle Protection Systems - EMD		<b>Project (Number/Name)</b> FE8 / Vehicle Protection Suite	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
Characterization of MAPS with Softkill/Hardkill Solutions																												
VPS NDI Capability Install/Characterization																												
Vehicle Protection Suite (VPS) Analysis of Alternatives (AoA)																												
Vehicle Protection Suite (VPS) Source Selection Evaluation Boards (SSEB)																												
Vehicle Protection Suite (VPS) Milestone B																												
Vehicle Protection Suite (VPS) Development Contract Awards																												
Vehicle Protection Suite (VPS) MAPS Development/Maturation																												
Vehicle Protection Suite (VPS) Platform Integration																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2019 Army			<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604852A / <i>Suite of Vehicle Protection Systems - EMD</i>	<b>Project (Number/Name)</b> FE8 / <i>Vehicle Protection Suite</i>	

## Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Characterization of MAPS with Softkill/Hardkill Solutions	2	2018	4	2019
VPS NDI Capability Install/Characterization	2	2018	4	2019
Vehicle Protection Suite (VPS) Analysis of Alternatives (AoA)	2	2018	3	2019
Vehicle Protection Suite (VPS) Source Selection Evaluation Boards (SSEB)	1	2019	4	2019
Vehicle Protection Suite (VPS) Milestone B	4	2019	4	2019
Vehicle Protection Suite (VPS) Development Contract Awards	1	2020	1	2020
Vehicle Protection Suite (VPS) MAPS Development/Maturation	1	2020	1	2021
Vehicle Protection Suite (VPS) Platform Integration	1	2020	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604852A / Suite of Vehicle Protection Systems - EMD				Project (Number/Name) XU9 / Active Protection System			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
XU9: Active Protection System	-	0.000	83.800	42.300	-	42.300	0.000	0.000	0.000	0.000	0.000	126.100
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Project XU9 (Active Protection System) is a continuation of efforts previously executed under PE 0203735A - Combat Vehicle Improvement Programs.												
A. Mission Description and Budget Item Justification The Active Protection System effort will install and characterize Non-Developmental Item (NDI) Active Protection Systems on Abrams, Bradley, and Stryker demonstrator vehicles. The Active Protection System effort will assess the maturity, performance, and integration risk of NDI Active Protection Systems, develop and refine Abrams, Bradley, and Stryker Active Protection System installation kit designs, and build prototypes necessary to conduct performance and safety testing to obtain an Active Protection System Urgent Materiel Release (UMR). The Active Protection System NDI effort will also serve to inform the Vehicle Protection Suite Analysis of Alternatives (AoA).												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Active Protection System (APS) Installation Kit Refinement and System Test - Abrams Description: Funding provided support APS integration and Test support for Abrams FY 2018 Plans: Engineering, logistics, and program management to mature the Abrams APS integration kit design, build Abrams APS prototypes, and execute system performance and safety testing necessary to obtain an Abrams APS Urgent Materiel Release (UMR). FY 2018 to FY 2019 Increase/Decrease Statement: At this time there is no FY 2019 requirement for Abrams characterization testing.								-	36.800	-	-	-
Title: Active Protection System (APS) Installation Kit Refinement and System Test - Bradley Description: Funding provided support APS integration and Test support for Bradley FY 2018 Plans: Engineering, logistics, and program management to mature the Bradley APS integration kit design, develop software releases across Bradley vehicle variants to operate the APS, and execute contractor testing of the								-	30.000	26.000	-	26.000

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Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604852A / Suite of Vehicle Protection Systems - EMD				Project (Number/Name) XU9 / Active Protection System					
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Vehicle Software Version Updates prior to the execution of system performance and safety testing necessary to obtain a Bradley APS Urgent Material Release (UMR). <b>FY 2019 Base Plans:</b> Continue engineering, logistics, and program management to mature the Bradley Active Protection System (APS) integration kit design, develop software releases across Bradley vehicle variants to operate the APS, and execute contractor testing of the vehicle software version updates prior to the execution of system performance and safety testing necessary to obtain a Bradley APS Urgent Material Release (UMR). <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> FY 2019 effort for characterization testing and initiation of the development of logistics products necessary for UMR will be reduced from FY 2018.													
<b>Title:</b> Active Protection System (APS) Installation Kit Refinement and System Test - Stryker <b>Description:</b> Funding provided support APS integration and Test support for Stryker  <b>FY 2018 Plans:</b> Engineering, logistics, and program management to mature the Stryker APS integration kit design, build Stryker APS prototypes, and execute system performance and safety testing necessary to obtain a Stryker APS Urgent Materiel Release (UMR). <b>FY 2019 Base Plans:</b> Continue engineering, logistics, and program management to mature the Stryker APS integration kit design, build Stryker APS prototypes, and execute system performance and safety testing necessary to obtain a Stryker APS Urgent Materiel Release (UMR). <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> FY 2019 effort for characterization testing and initiation of the development of logistics products necessary for UMR will be reduced from FY 2018.									-	17.000	16.300	-	16.300
Accomplishments/Planned Programs Subtotals									-	83.800	42.300	-	42.300
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost		
• GA0700: Abrams Tank (MOD)	492.044	387.526	927.600	34.000	961.600	284.209	289.323	269.175	286.432	Continuing	Continuing		

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Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604852A / Suite of Vehicle Protection Systems - EMD				Project (Number/Name) XU9 / Active Protection System			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• GZ2400: Bradley Program (MOD)	265.333	474.851	625.424	50.000	675.424	637.190	663.460	650.662	840.733	Continuing	Continuing
• GM0100: Stryker (Mod)	82.681	97.552	287.490	-	287.490	465.780	570.391	544.979	500.041	Continuing	Continuing
Remarks											
FY 2019 OCO funding in GA00700 and GZ2400, supports the procurement of Non-Development Item (NDI) Active Protection System (APS) for installation onto Abrams and Bradley.											
D. Acquisition Strategy											
The Active Protection System Project (XU9) is a continuation of efforts previously executed under PE 0203735A - Combat Vehicle Improvement Programs.											
The Active Protection System (APS) installation and characterization effort will evaluate platform (Abrams, Bradley, Stryker) performance with an Non-Developmental Item (NDI) APS solution installed. Platform performance evaluation includes APS sensor assessments, minimum live threat characterization, surface danger zone characterization, co-site mitigation (antennas/radiators), electromagnetic interference assessment/characterization, energetic radiation assessment, and a durability assessment. The NDI APS installation and characterization is being executed through a partnership between the US Army, NDI APS solution vendors, and prime contractors for Abrams, Bradley, and Stryker vehicles. NDI APS vendor support, to include procurement of demonstration hardware, is contracted on a Firm-Fixed Price (FFP) basis, while platform prime contractor technical support is provided on a Cost Plus Fixed-Fee (CPFF) basis. The results from the installation and characterization effort will inform FY18 decisions to pursue the additional prototyping and testing necessary to obtain Urgent Materiel Releases (UMR) for NDI APS systems.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604852A / Suite of Vehicle Protection Systems - EMD				Project (Number/Name) XU9 / Active Protection System					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
Active Protection System (APS) Installation Kit Development and Prototype Build - Abrams	SS/ Various	US Army TARDEC; Rafael Advanced Defense Systems; General Dynamics Land Systems (GDLS) : Warren, MI	-	-		23.881	Nov 2017	-		-		-	0.000	23.881	-
Active Protection System (APS) Installation Kit Development and Prototype Build - Bradley	SS/ Various	US Army TARDEC; Israeli Military Industries (IMI); BAE Systems : Warren, MI	-	-		28.948	Jan 2018	4.400	Jan 2019	-		4.400	0.000	33.348	-
Active Protection System (APS) Installation Kit Development and Prototype Build - Stryker	SS/ Various	US Army TARDEC; Artis, LLC.; General Dynamics Land Systems (GDLS) : Warren, MI	-	-		5.183	Jan 2018	4.100	Jan 2019	-		4.100	0.000	9.283	-
Subtotal			-	-		58.012		8.500		-		8.500	0.000	66.512	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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 Office (PMO) Support	MIPR	PEO Ground Combat Systems : Warren, MI	-	-		3.223	Oct 2017	2.600	Oct 2018	-		2.600	0.000	5.823	-
Subtotal			-	-		3.223		2.600		-		2.600	0.000	5.823	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2019 Army													<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 2040 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604852A / Suite of Vehicle Protection Systems - EMD				<b>Project (Number/Name)</b> XU9 / Active Protection System					

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Government Testing - Abrams Active Protection System (APS)	MIPR	Various : Army Test Centers	-	-		11.464	Nov 2017	-		-		-	0.000	11.464	-
Government Testing - Stryker Active Protection System (APS)	MIPR	Various : Army Test Centers	-	-		11.101	Jan 2018	11.100	Jan 2019	-		11.100	0.000	22.201	-
Government Testing - Bradley Active Protection System (APS)	MIPR	Various : Army Test Centers	-	-		-		20.100	Jan 2019	-		20.100	0.000	20.100	-
<b>Subtotal</b>			-	-		22.565		31.200		-		31.200	0.000	53.765	N/A

	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	-	-	83.800	42.300	-	42.300	0.000	126.100	N/A

**Remarks**

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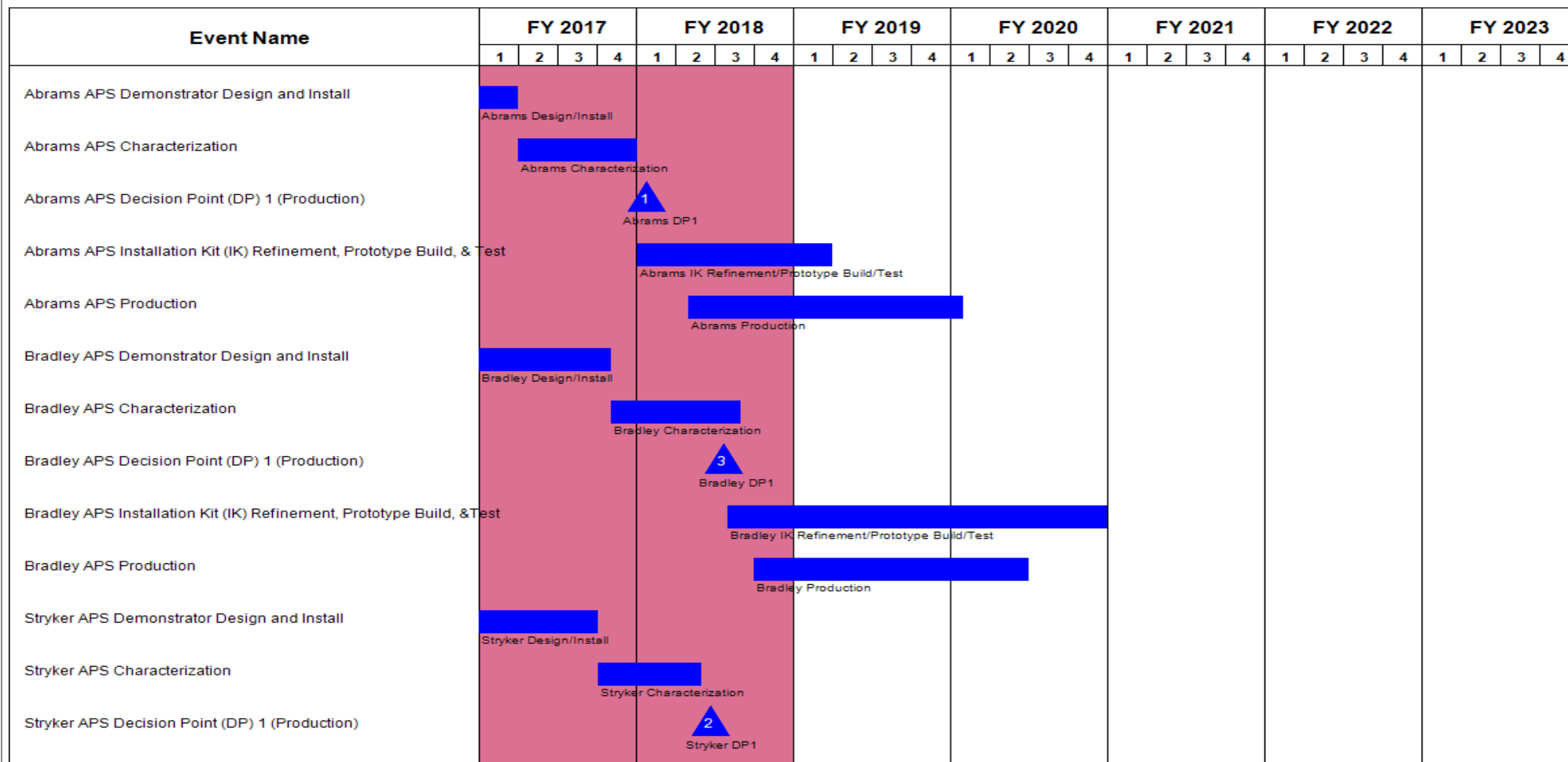
Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army

Date: February 2018

Appropriation/Budget Activity  
2040 / 5

R-1 Program Element (Number/Name)  
PE 0604852A / Suite of Vehicle Protection  
Systems - EMD

Project (Number/Name)  
XU9 / Active Protection System



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2019 Army			<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 2040 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604852A / <i>Suite of Vehicle Protection Systems - EMD</i>		<b>Project (Number/Name)</b> XU9 / <i>Active Protection System</i>	

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
Stryker APS Installation Kit (IK) Refinement, Prototype Build, & Test																												
Stryker APS Production																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2019 Army			<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604852A / <i>Suite of Vehicle Protection Systems - EMD</i>	<b>Project (Number/Name)</b> XU9 / <i>Active Protection System</i>	

**Schedule Details**

<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Abrams APS Demonstrator Design and Install	3	2016	1	2017
Abrams APS Characterization	1	2017	4	2017
Abrams APS Decision Point (DP) 1 (Production)	1	2018	1	2018
Abrams APS Installation Kit (IK) Refinement, Prototype Build, & Test	1	2018	1	2019
Abrams APS Production	2	2018	1	2020
Bradley APS Demonstrator Design and Install	4	2016	4	2017
Bradley APS Characterization	4	2017	3	2018
Bradley APS Decision Point (DP) 1 (Production)	3	2018	3	2018
Bradley APS Installation Kit (IK) Refinement, Prototype Build, & Test	3	2018	4	2020
Bradley APS Production	4	2018	2	2020
Stryker APS Demonstrator Design and Install	4	2016	3	2017
Stryker APS Characterization	4	2017	2	2018
Stryker APS Decision Point (DP) 1 (Production)	2	2018	2	2018
Stryker APS Installation Kit (IK) Refinement, Prototype Build, & Test	3	2018	2	2019
Stryker APS Production	2	2019	3	2019