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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					PE 0604622A / <i>Family of Heavy Tactical Vehicles</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	23.944	12.906	-	-	-	11.509	9.957	6.774	6.902	Continuing	Continuing
659: <i>Family Of Hvy Tac Veh</i>	-	21.964	9.299	-	-	-	4.731	4.142	2.963	3.019	Continuing	Continuing
VR5: <i>TWV Protection Kits</i>	-	1.980	3.607	-	-	-	6.778	5.815	3.811	3.883	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element aligns system development and demonstration of Heavy Tactical Vehicles with Future Modular Force requirements to support combat and combat support missions. These missions include the following: line haul, local haul, and unit resupply. These trucks transport water, ammunition, and general cargo over all terrain and throughout the battle-space. Funding will also be used for developing the Army's next generation of tactical trucks, as part of the Army's Tactical Wheeled Vehicle Modernization Strategy. Funding in Project 659 supports the Family of Heavy Trucks (FHTV) Active Safety technologies. Funding in Project VR5 supports periodic, evolutionary upgrade of survivability and crew protection for Heavy Tactical Vehicles as described in the Long Term Protection Strategy.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	28.310	12.913	7.624	-	7.624
Current President's Budget	23.944	12.906	-	-	-
Total Adjustments	-4.366	-0.007	-7.624	-	-7.624
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-4.366	-0.007	-7.624	-	-7.624

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
659: Family Of Hvy Tac Veh	-	21.964	9.299	-	-	-	4.731	4.142	2.963	3.019	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Family of Heavy Tactical Vehicles (FHTV) variants Active Safety Family of Heavy Tactical Vehicles (FHTV) Heavy Dump Truck (HDT) Mine Resistant Ambush Protected (MRAP) Vehicle												
A. Mission Description and Budget Item Justification Develop and test active safety technologies for insertion into the Family of Heavy Tactical Vehcile (FHTV) variants. Active Safety technologies include drive by wire (electronically controlled engine, transmission, steering, and braking), lane departure warning, stability control, adaptive cruise control, and blind spot monitoring. This will also include the associated wiring and databus upgrades necessary for the active safety technologies and future incorporation of autonomy. The integration of active safety will reduce the frequency of accidents by 26-59%. Furthermore, active safety is the foundation for achieving the objective of autonomy as specified in the individual variant's Capability Production Documents (CPD) and shall enable functions to be performed by a robotic (autonomous, semi-autonomous, Leader Follower, Soldier assist systems, e.g., blind side monitoring, driver fatigue alert system) and remote control capability.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Heavy Dump Truck (HDT) Description: Truck Test Assets (Procure) FY 2014 Accomplishments: Test and Evaluation of Armor Integration								5.410	-	-	-	-
Title: Test and Evaluation Description: Test and Evaluation (Conduct Testing) FY 2014 Accomplishments: Test and Evaluation (HDT) FY 2015 Plans: Test and Evaluation								3.176	5.855	-	-	-
Title: Program Support								1.319	0.854	-	-	-

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Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh			
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: Program Support											
FY 2014 Accomplishments: Funds will provide program support to the Heavy Tactical Vehicles family (HDT)											
FY 2015 Plans: Funds will provide program support to the Heavy Tactical Vehicles family.											
Title: Prototype Design and Integration							5.069	2.590	-	-	-
Description: Prototype Design and Integration											
FY 2014 Accomplishments: Prototype Design and Integration (HDT)											
FY 2015 Plans: Prototype Design and Integration											
Title: Maxx Pro & MATV							6.990	-	-	-	-
Description: Maxx Pro & MATV Test and Development											
FY 2014 Accomplishments: Maxx Pro & MATV Test and Development											
Accomplishments/Planned Programs Subtotals							21.964	9.299	-	-	-
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Family of Heavy Tactical Vehicles: Family of Heavy Tactical Vehicles (FHTV) DA0500	5.915	78.425	27.549	-	27.549	41.806	7.404	-	-	-	161.099
• Truck, Dump: Truck, Dump, 20T D16001	-	-	-	-	-	26.738	29.716	22.756	23.188	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
• Mine Resistant Ambush	481.240	211.731	19.146	393.100	412.246	7.534	-	-	-	-	1,112.751
Protected: <i>Mine Resistant Ambush</i>											
<i>Protected (MRAP) Mods (D03002)</i>											
Remarks											
D. Acquisition Strategy											
The funding will be utilized to develop an active safety integration kit for FHTV variants including prototype parts and installation as well as limited functional checks and testing. Future R&D funding will be used to perform testing and develop a Technical Data Package (TDP) for procurement with MOD line funding.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
HDT Prototype Design and Integration	C/FFP	TBD : TBD	0.000	5.069	May 2015	2.590	Jul 2015	-		-		-	-	7.659	-
Subtotal			0.000	5.069		2.590		-		-		-	-	7.659	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Heavy Dump Truck (HDT) Test Assets	C/FFP	TBD : TBD	0.000	5.410	May 2015	-		-		-		-	-	5.410	-
Maxx Pro & MATV Development	MIPR	Various : Various	0.000	5.000	Apr 2014	-		-		-		-	-	5.000	-
Maxx Pro & MATV Armor Development	MIPR	Various : TARDEC/ Various	8.597	-		-		-		-		-	-	8.597	-
Subtotal			8.597	10.410		-		-		-		-	-	19.007	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Maxx Pro & MATV Program Support Costs	MIPR	TARDEC : Warren, MI	2.721	-		-		-		-		-	-	2.721	-
HDT Program Support	MIPR	TACOM : Warren, MI	0.046	1.319	Oct 2014	0.854	Mar 2015	-		-		-	Continuing	Continuing	Continuing
Subtotal			2.767	1.319		0.854		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
HDT Test and Evaluation	MIPR	TBD : TBD	0.000	3.176	Jul 2015	5.855	Jul 2015	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh					

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Maxx Pro & MATV Test	MIPR	Various : Various	3.682	-		-		-		-		-	-	3.682	-
Maxx Pro & MATV Test	MIPR	Various : TARDEC/ Various	0.000	1.990	Apr 2014	-		-		-		-	-	1.990	-
Subtotal			3.682	5.166		5.855		-		-		-	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.046	21.964	9.299	-	-	-	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015													
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles										Project (Number/Name) 659 / Family Of Hvy Tac Veh									
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				
	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	
FHTV Active Safety Program Management Support																													
FHTV Active Safety Prototype Design and Integration																													
(1) Heavy Dump Truck (HDT) Test Assets																													
HDT Program Management Support																													
HDT Prototype Design and Integration																													
HDT Testing																													
Maxx Pro & MATV Development																													
Maxx Pro & MATV Test FY14																													
Maxx Pro & MATV Armor Development																													
Maxx Pro & MATV Program Support																													
Maxx Pro & MATV Test FY13																													

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / <i>Family of Heavy Tactical Vehicles</i>	Project (Number/Name) 659 / <i>Family Of Hvy Tac Veh</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FHTV Active Safety Program Management Support	3	2016	2	2020
FHTV Active Safety Prototype Design and Integration	4	2016	4	2019
Heavy Dump Truck (HDT) Test Assets	4	2015	4	2015
HDT Program Management Support	1	2013	4	2021
HDT Prototype Design and Integration	2	2017	1	2018
HDT Testing	2	2018	4	2018
Maxx Pro & MATV Development	2	2014	2	2015
Maxx Pro & MATV Test FY14	2	2014	2	2015
Maxx Pro & MATV Armor Development	2	2013	4	2014
Maxx Pro & MATV Program Support	2	2013	4	2014
Maxx Pro & MATV Test FY13	2	2013	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) VR5 / TWV Protection Kits			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
VR5: TWV Protection Kits	-	1.980	3.607	-	-	-	6.778	5.815	3.811	3.883	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This program element supports periodic, evolutionary upgrade of survivability and crew protection for Heavy Tactical Vehicles (HTV) as described in the Tactical Wheeled Vehicle (TWV) Strategy and individual variants' Capability Production Documents. The upgrades will leverage the Army Technology Objective's (ATO) survivability and Army Research Laboratory's (ARL) research and development activities to develop and evaluate kits which increase the protection level of the HTV to the MRAP 1.1 level while anticipating changing threat environments, protection gaps, or improving the operating performance, efficiency, and reliability through armor weight reduction. This Program Element (PE) also supports increasing crew protection by leveraging advancements in autonomous ground vehicle technology via development and evaluation of autonomous applique kits that can be applied to the current and future HTV fleet.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Design and Build Armor Kits.								1.747	1.906	-	-	-
Description: Design and build prototype kits for the Heavy Tactical Vehicle systems.												
FY 2014 Accomplishments: Design and build prototype kits that represent production alternatives in terms of form, fit, and function sufficient to validate the required protection levels and kit interface to the vehicle platform.												
FY 2015 Plans: Design and build prototype kits in terms of form, fit, and function sufficient to validate the required protection levels and kit interface to the vehicle platform.												
Title: Test and Evaluation.								0.023	1.531	-	-	-
Description: Funding is provided for the following effort.												
FY 2014 Accomplishments: Validation of HUSK design in preparation of Full Materiel Release.												
FY 2015 Plans: Validation of HUSK design in preparation of Full Materiel Release.												
Title: Program Management								0.210	0.170	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) VR5 / TWV Protection Kits			
B. Accomplishments/Planned Programs (\$ in Millions)											
						FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	
Description: Subject matter engineering matrix support for ballistics advisement.											
FY 2014 Accomplishments: Program Management support.											
FY 2015 Plans: Program Management support											
Accomplishments/Planned Programs Subtotals						1.980	3.607	-	-	-	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 005: Family of Heavy Tactical Vehicles (FHTV) (DA0500)	5.915	78.425	27.549	-	27.549	41.806	7.404	-	-	-	161.099
• 003: Family of Medium Tactical Vehicles (FMTV) (D15500)	305.650	195.624	90.040	243.998	334.038	192.812	210.923	247.798	247.798	-	1,734.643
• 000: Tactical Wheeled Protection Kits - D04003	17.000	38.226	48.292	-	48.292	42.151	43.515	44.815	45.661	-	279.660
Remarks											
D. Acquisition Strategy											
All funds are dedicated to creating an armor solution to develop MRAP 1.1-level armor for the HET A1.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles						Project (Number/Name) VR5 / TWV Protection Kits			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
SBIR/STTR	C/TBD	WARREN, MI : TBD	0.058	-		-		-		-		-	-	0.058	-
Subtotal			0.058	-		-		-		-		-	-	0.058	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Analysis of Alternatives/ Design and Build Armor Kits	SS/CPFF	OshKosh Truck Corporation : OshKosh, WI	0.173	-		-		-		-		-	Continuing	Continuing	Continuing
Design and Build	MIPR	TARDEC : Warren, MI	0.973	1.747		1.906		-		-		-	-	4.626	-
Vulnerability Modeling and Simulation	MIPR	Army Research Lab : Adelphi, MD	0.120	-		-		-		-		-	Continuing	Continuing	Continuing
Survivability Modeling & Simulation	MIPR	TARDEC : Warren, MI	0.250	-		-		-		-		-	-	0.250	-
Subtotal			1.516	1.747		1.906		-		-		-	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 Support	MIPR	TARDEC : Warren, MI	0.457	0.210		0.170		-		-		-	-	0.837	-
Subtotal			0.457	0.210		0.170		-		-		-	-	0.837	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) VR5 / TWV Protection Kits				

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Test and Evaluation	MIPR	Various Locations : Various Locations	2.752	0.023		1.531		-		-		-	Continuing	Continuing	Continuing
Subtotal			2.752	0.023		1.531		-		-		-	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.783	1.980	3.607	-	-	-	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604622A / Family of Heavy Tactical Vehicles

Project (Number/Name)

VR5 / TWV Protection Kits

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Design and Build Armor Kits	[Blue bar spanning all 28 columns]																											
	[Red bar]				[Red bar]				[White bar]				[White bar]				[White bar]				[White bar]				[White bar]			
Test and Evaluation	[Blue bar spanning all 28 columns]																											
	[Red bar]				[Red bar]				[White bar]				[White bar]				[White bar]				[White bar]				[White bar]			
Program Support	[Blue bar spanning all 28 columns]																											
	[Red bar]				[Red bar]				[White bar]				[White bar]				[White bar]				[White bar]				[White bar]			

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / <i>Family of Heavy Tactical Vehicles</i>	Project (Number/Name) VR5 / <i>TWV Protection Kits</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design and Build Armor Kits	2	2012	4	2020
Test and Evaluation	1	2013	3	2017
Program Support	2	2012	4	2020