Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*				R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*							
COST ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	4.975	-	10.715	-	10.715	9.066	6.208	5.260	5.193	Continuing	Continuing
131: *NIGHT VISION SYS A/DEV*	4.975	-	-	-	-	-	-	-	-	Continuing	Continuing
VT7: *SOLDIER MANEUVER SENSORS - ADV DEV*	-	-	10.715	-	10.715	9.066	6.208	5.260	5.193	Continuing	Continuing

Note

Change Summary Explanation:

Fiscal Year 2011-Program Increase of $4.975 million for Project D131 for CSP TLA Laser technology maturity.

Fiscal Year 2013-Program Increase of $10.715 million for Project VT7 Soldier Maneuver Systems Advanced Development efforts.

A. Mission Description and Budget Item Justification

This program element focuses on efforts to evaluate and integrate technologies and representative prototype systems that facilitate the development of Soldier-borne sensor devices transitioning from the laboratory to operational use. Efforts focus on proving out commonality across as broad a spectrum of users as possible to provide enhanced Soldier products, giving them superiority on the battlefield.

Project 131 (Night Vision Systems Advanced Development) This project supports the Army's transformation by developing payloads for brigade combat team, division, and corps Unmanned Aircraft Systems (UAS) and unmanned systems in accordance with Headquarters Department of the Army (HQDA) and Training and Doctrine Command (TRADOC) priorities. The funds associated with Project 131 are for the technology maturity of the Common Sensor Payload Target Location Accuracy (CSP TLA) Laser. Once this laser technology has been matured to the appropriate Technology Readiness Level (TRL), it will be cut into the CSP TLA development effort and eventual production to replace the baseline payloads on the Gray Eagle platform.

Project VT7 (Soldier Maneuver Sensors-Advanced Development) Efforts focus on proving out commonality across as broader spectrum of users as possible to provide enhanced Soldier products, giving them superiority on the battlefield. Near term efforts include the integration of goggles with the weapon sights for Rapid Target Acquisition (RTA) in a realistic operating environment, thereby increasing Soldier lethality. This project also develops a Family of Weapon Sights (FWS) with fused electro-optical performance, including focal plane arrays and high resolution micro-displays. FWS enabling technologies increase product resolution, range, and imaging performance. New technologies will improve Soldier lethality, survivability, reduce weight, and improve affordability, mobility and comfort to combat and training environments. In addtion this project will explore insertion of technology that improves the Soldier's ability to detect Improvised Explosive Devices (IED) Detection.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army					DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*		R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*			
B. Program Change Summary ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**
Previous President's Budget	-	-	-	-	-
Current President's Budget	4.975	-	10.715	-	10.715
Total Adjustments	4.975	-	10.715	-	10.715
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	4.975	-	10.715	-	10.715

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*	PROJECT 131: *NIGHT VISION SYS A/DEV*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
131: *NIGHT VISION SYS A/DEV*	4.975	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project supports the Army's transformation by developing payloads for brigade combat team, division, and corps Unmanned Aircraft Systems(UAS) and unmanned systems in accordance with Headquarters Department of the Army (HQDA) and Training and Doctrine Command (TRADOC) priorities.

CSP Target Location Accuracy (TLA) is the final upgrade to CSP which will provide all of the CSP HD functionality but with significantly improved targeting accuracy. CSP TLA provides the Battlefield Commander a vastly improved TLA allowing timely use of Joint Direct Attack Munitions (JDAMs) and Coordinate Seeking Weapons (CSWs) across the battlespace. CSP TLA is being procured as an upgraded capability for the Gray Eagle UAS program and can be integrated onto other manned and unmanned aerial platforms. The funds associated with this funding line are for the technology maturity of the TLA Laser. Once this laser technology has been matured to the appropriate Technology Readiness Level (TRL), it will be cut into the TLA development effort and eventual production to replace the CSP HD payloads on the Gray Eagle platform.

This program has no FY 2013 Base or OCO requirement.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: CSP TLA Laser Technology Maturity	4.975	-	-
Articles:	0		
Description: Maturing the technology of the TLA Laser			
FY 2011 Accomplishments: Maturing the technology of the TLA Laser			
Accomplishments/Planned Programs Subtotals	4.975	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0305204A - D11A: *0305204A - Tactical Unmanned Aerial Vehicle (11A)*	24.452	15.910	6.247		6.247		7.386	11.994	3.094	0.000	76.263

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*	PROJECT 131: *NIGHT VISION SYS A/DEV*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• A00020: *MQ-1 Payload - UAS - A00020*	83.556	146.983	231.508		231.508		258.027	10.146	10.162	0.000	989.868

D. Acquisition Strategy

The approved acquisition strategy was to award a Sole Source Task Order on the Navy Basic Order Agreement (BOA) to Raytheon to mature the Diode Pump laser technology to an appropriate Technology Readiness Level (TRL). Once sufficiently matured, the components/technology will be incorporated into test systems and transitioned into the Block upgrade program to undergo further system and qualification testing as part of RDTE efforts conducted in the TLA Block upgrade under Advanced Payloads (PE 0305204A Project D11A).

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*	PROJECT 131: *NIGHT VISION SYS A/DEV*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Maturity of the TLA Laser	MIPR	NSWC Crane:Crane, IN	12.975	-		-		-		-	0.000	12.975	12.975
		Subtotal	12.975	-		-		-		-	0.000	12.975	12.975

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.975	-		-		-		-	0.000	12.975	12.975

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*	PROJECT 131: *NIGHT VISION SYS A/DEV*

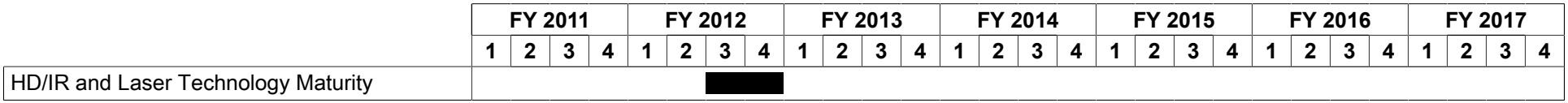

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603774A: *Night Vision Systems Advanced Development*	**PROJECT** 131: *NIGHT VISION SYS A/DEV*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
HD/IR and Laser Technology Maturity	3	2012	4	2012

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*	PROJECT VT7: *SOLDIER MANEUVER SENSORS - ADV DEV*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
VT7: *SOLDIER MANEUVER SENSORS - ADV DEV*	-	-	10.715	-	10.715	9.066	6.208	5.260	5.193	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project supports efforts to evaluate and integrate technologies and representative prototype systems that facilitate the development of Soldier-borne sensor devices transitioning from the laboratory to operational use. Efforts focus on proving out commonality across as broader spectrum of users as possible to provide enhanced Soldier products, giving them superiority on the battlefield. Near term efforts include the integration of goggles with the weapon sights for Rapid Target Acquisition (RTA) in a realistic operating environment, thereby increasing Soldier lethality. This project also develops a Family of Weapon Sights (FWS) with fused electro-optical performance, including focal plane arrays and high resolution micro-displays. FWS enabling technologies increase product resolution, range, and imaging performance. New technologies improve Soldier lethality, survivability, reduce weight, and improve affordability, mobility and comfort to combat and training environments. In addtion this project explores insertion of technology that improves the Soldier's ability to detect Improvised Explosive Devices (IED) Detection.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: Family of Weapons Sights (FWS) ***Description:*** FWS is a family of weapon sights that utilize advances in thermal and image intensified technologies to produce Individual, Crew-Served, and Sniper weapon sights operable in-line with a day optic or in stand-alone mode. FWS includes fused multi-band imagery and rapid target acquisition with ballistic equations, providing the Soldier with improved situational awareness and more rapid target detection and engagement during day and night operations. This program will integrate smaller pixel (12 micron) uncooled long-wave infrared focal plane arrays in multiple large format sizes to improve sensitivity, clarity, and range, while simultaneously reducing the size, weight and power consumption of the Crew-Served and Sniper variants. ***FY 2013 Plans:*** Integrate 12 micron focal plane arrays into the build and testing of prototypes for the Crew-Served and Sniper variants. Additionally, an early user evaluation will be conducted on prototypes of the Individual variant developed in FY12.	-	-	8.840
Title: Improvised Explosive Devices (IED) Detection ***Description:*** In response to JUONS 0269 for the LineFinder (counter-IED), this program funds the development of technological improvements to Soldier-borne sensors that automatically detect and alert to IED related signatures. In addition it funds improvements in the Size, Weight, and Power (SWaP) of head-borne Soldier sensors including the Enhanced Night Vision Goggle (ENVG). ***FY 2013 Plans:***	-	-	1.079

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*	PROJECT VT7: *SOLDIER MANEUVER SENSORS - ADV DEV*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Will initiate the integration of detection technologies to enable an Improvised Explosive Devices (IED) Detection system that can locate buried command wires and disturbed ground.			
Title: Optical Augmentation (OA) Sniper Detection ***Description:*** This Sniper Detection System is designed to detect and locate optical scopes used by snipers or optronic sight systems on the battlefield or urban zones. ***FY 2013 Plans:*** Initiate the development of a man portable sniper detection/laser warning system.	-	-	0.796
Accomplishments/Planned Programs Subtotals	-	-	10.715

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• DL67: *DL67 Night Vision Systems -Eng Dev (PE 604710 L67)*	15.021	23.946					15.011	12.603	12.889	Continuing	Continuing
• Helmet Mounted Enhanced Vision Devi: *Helmet Mounted Enhanced Vision Devices (HMEVD) (SSN K36400)*	8.098	117.442	125.917		125.917		174.861	222.725	226.581	Continuing	Continuing
• Thermal Weapon Sight (TWS): *Thermal Weapon Sight (TWS) K22900)*	249.001	186.859	82.162		82.162		95.920	141.121	143.565	Continuing	Continuing
• Sniper Night Sight (SNS): *Sniper Night Sight (SSN K41500)*	35.091	4.892	11.660		11.660			11.049	11.240	Continuing	Continuing
• Green Laser Interdiction System: *Green Laser Interdiction System (GLIS) (AD5311)*	21.434	25.356	1.014		1.014					0.000	48.820
• Sense Through The Wall (STTW): *Sense Through The Wall (STTW) (KA2300)*	24.799	57.498	6.212		6.212		15.015			0.000	103.666
• STORM: *Small Tactical Optical Interdiction Mounted (STORM) (K35110)*	8.472	10.227	20.717		20.717		20.319	20.305	15.025	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*	PROJECT VT7: *SOLDIER MANEUVER SENSORS - ADV DEV*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• Laser Target Locator Systems (LTL): *Laser Target Locator Systems (LTL) (B53800)*	32.885	33.870	27.593		27.593		11.949	12.000	12.208	Continuing	Continuing

D. Acquisition Strategy

The various developmental programs in this project continue to exercise competitively awarded contracts using best value source selection procedures.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*	PROJECT VT7: *SOLDIER MANEUVER SENSORS - ADV DEV*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Weapon Sights (FWS)	Various	ACC:ABERDEEN, MD	-	-		8.185		-		8.185	0.000	8.185	8.275
Improvised Explosive Devices (IED) Detection	MIPR	ACC:ABERDEEN, MD	-	-		0.938		-		0.938	0.000	0.938	1.728
Optical Augmentation (OA) Sniper Detect	Various	TBD:TBD	-	-		0.740		-		0.740	0.000	0.740	0.000
		Subtotal	-	-		9.863		-		9.863	0.000	9.863	10.003

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Improvised Explosive Devices (IED) Detection	Various	NVESD:FT BELVOIR, VA	-	-		0.147		-		0.147	0.000	0.147	0.000
Family of Weapon Sights (FWS)	MIPR	NVESD:FT BELVOIR, VA	-	-		0.405		-		0.405	0.000	0.405	0.000
Optical Augmentation (OA) Sniper Detect	Various	NVESD:FT BELVOIR, VA	-	-		0.050		-		0.050	0.000	0.050	0.000
		Subtotal	-	-		0.602		-		0.602	0.000	0.602	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FWS Individual Early User Assessment (EUA)	Various	TBD:TBD	-	-		0.250		-		0.250	0.000	0.250	0.000
		Subtotal	-	-		0.250		-		0.250	0.000	0.250	0.000

	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		10.715		-		10.715	0.000	10.715	10.003

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*	PROJECT VT7: *SOLDIER MANEUVER SENSORS - ADV DEV*	

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603774A: *Night Vision Systems Advanced Development*	PROJECT VT7: *SOLDIER MANEUVER SENSORS - ADV DEV*

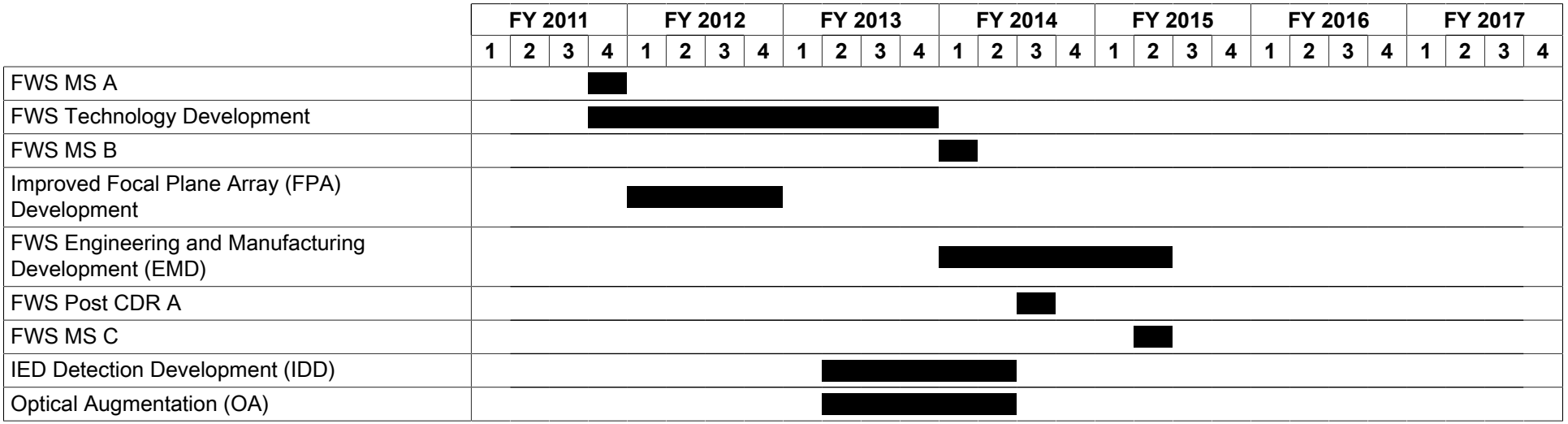

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603774A: *Night Vision Systems Advanced Development*	**PROJECT** VT7: *SOLDIER MANEUVER SENSORS - ADV DEV*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FWS MS A	4	2011	4	2011
FWS Technology Development	4	2011	4	2013
FWS MS B	1	2014	1	2014
Improved Focal Plane Array (FPA) Development	1	2012	4	2012
FWS Engineering and Manufacturing Development (EMD)	1	2014	2	2015
FWS Post CDR A	3	2014	3	2014
FWS MS C	2	2015	2	2015
IED Detection Development (IDD)	2	2013	2	2014
Optical Augmentation (OA)	2	2013	2	2014