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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development</i>					R-1 Program Element (Number/Name) PE 0205402A / <i>Integrated Base Defense - Operational System Dev</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	-	-	4.362	10.750	-	10.750	11.108	4.272	-	-	-	30.492
EF2: <i>Integrated Base Defense</i>	-	-	4.362	10.750	-	10.750	11.108	4.272	-	-	-	30.492

Note

FY16 increase of \$7.520 million is a result of adding GBOSS-E and IGSSR-C programs to this funding line.

A. Mission Description and Budget Item Justification

G-BOSS(E): Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)) will replace the interim Persistent Surveillance System-Ground (PSS-G) Increment 1 towers with improved persistent surveillance capabilities and will provide network integration and better mobility utilizing modular configurations. G-BOSS(E) will replace obsolete, quick reaction capability (QRC) surveillance and force protections systems utilizing modular configurations: Light (man-transportable) for extra small base camps or small outpost/company, Medium (mid sensor height) for small to medium size base, and Heavy (high level sensor height) for large contingency base camps. G-BOSS(E) will operate in a stand-alone mode or as part of an integrated network utilizing government owned software, be easily operated and maintained, and be rugged enough to support employment in expeditionary operations worldwide.

IGSSR-C: The Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) is a requirement to provide a layered approach to integrate sensors, sensor systems and unmanned systems with automated fusion capabilities. The system will provide a Force Protection (FP) Common Operational Picture (COP) capability for CONUS fixed, OCONUS semi-fixed or expeditionary elements in all Operating Environments (OE). This capability will enable rapid decision analysis, speed the response process as well as increase information dissemination horizontally and vertically along the chain of command and with outside supporting organizations. IGSSR-C is a software centric fusion engine that connects legacy and emerging FP systems, legacy Chemical, Biological, Radiological, and Nuclear (CBRN), unmanned systems, biometric identification and forensic data systems. The desired end state is to achieve interoperability and COP with current and emerging FP systems used by Joint Forces, Department of Defense (DoD) agencies and multi-national forces.

Integrated Base Defense (IBD): The purpose of IBD Kitting is to harvest and refurbish physical security and Force Protection (FP) Non-Standard Equipment (NS-E) and package them into integrated and interoperable IBD Capabilities. IBD provides integration of software and analytical capability to support the integration of systems in the field. IBD employs an enterprise approach to enable IBD capabilities across the operational spectrum by leveraging interoperability efforts in support of the Integrated Unit, Base and Installation Protection (IUBIP) framework.

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B. Program Change Summary (\$ in Millions)	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	-	4.364	3.230	-	3.230
Current President's Budget	-	4.362	10.750	-	10.750
Total Adjustments	-	-0.002	7.520	-	7.520
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-0.002	7.520	-	7.520

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0205402A / <i>Integrated Base Defense - Operational System Dev</i>				Project (Number/Name) EF2 / <i>Integrated Base Defense</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
EF2: <i>Integrated Base Defense</i>	-	-	4.362	10.750	-	10.750	11.108	4.272	-	-	-	30.492
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This project is a shared funding line. Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)) and the Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) are new starts in FY 2016.

A. Mission Description and Budget Item Justification

G-BOSS(E): Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)) will replace the interim Persistent Surveillance System-Ground (PSS-G) Increment 1 towers with improved persistent surveillance capabilities and will provide network integration and better mobility utilizing modular configurations. G-BOSS(E) will replace obsolete, quick reaction capability (QRC) surveillance and force protections systems utilizing modular configurations: Light (man-transportable) for extra small base camps or small outpost/company, Medium (mid sensor height) for small to medium size base, and Heavy (high level sensor height) for large contingency base camps. G-BOSS(E) will operate in a stand-alone mode or as part of an integrated network utilizing government owned software, be easily operated and maintained, and be rugged enough to support employment in expeditionary operations worldwide.

IGSSR-C: The Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) is a requirement to provide a layered approach to integrate sensors, sensor systems and unmanned systems with automated fusion capabilities. The system will provide a Force Protection (FP) Common Operational Picture (COP) capability for CONUS fixed, OCONUS semi-fixed or expeditionary elements in all Operating Environments (OE). This capability will enable rapid decision analysis, speed the response process as well as increase information dissemination horizontally and vertically along the chain of command and with outside supporting organizations. IGSSR-C is a software centric fusion engine that connects legacy and emerging FP systems, legacy Chemical, Biological, Radiological, and Nuclear (CBRN), unmanned systems, biometric identification and forensic data systems. The desired end state is to achieve interoperability and COP with current and emerging FP systems used by Joint Forces, Department of Defense (DoD) agencies and multi-national forces.

Integrated Base Defense (IBD): The purpose of IBD Kitting is to harvest and refurbish physical security and FP Non-Standard Equipment and package them into integrated and interoperable IBD Capabilities. IBD provides integration of software and analytical capability to support the integration of systems in the field. IBD employs an enterprise approach to enable IBD capabilities across the operational spectrum by leveraging interoperability efforts in support of the Integrated Unit, Base and Installation Protection framework.

FY 2016 RDTE funding in the amount of \$10.750 million supports the design and prototype development of the G-BOSS(E) in the amount of \$5.750 million, IGSSR-C development/design efforts in the amount of \$3.500 million, and the DOD IBD efforts in the amount of \$1.500 million to provide enhanced situational awareness, increased efficiencies, and more effective responses for both tactical bases and CONUS/OCONUS Installations focused on system engineering, development efforts to upgrade systems and software development.

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Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205402A / <i>Integrated Base Defense - Operational System Dev</i>	Project (Number/Name) EF2 / <i>Integrated Base Defense</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Title: IBD Test and Evaluation Description: Test and Evaluation of Integrated Base Defense Software Development Efforts in support if Integrated Base Defense Kitting. FY 2015 Plans: Test and Evaluation of Integrated Base Defense Software Development Efforts in support if Integrated Base Defense Kitting. FY 2016 Plans: Test and Evaluation of Integrated Base Defense Software Development Efforts in support if Integrated Base Defense Kitting.		-	0.403	0.749
Title: IBD Architecture and Software Development Description: Integrated Base Defense Architecture and Software Development FY 2015 Plans: Integrated Base Defense Architecture and Software Development in support of Integrated Base Defense Kitting. FY 2016 Plans: Integrated Base Defense Architecture and Software Development in support of Integrated Base Defense Kitting.		-	3.561	0.614
Title: IBD Engineering and Management Services Description: Engineering and Managment Services in support of Integrated Base Defense Software Development Efforts for Integrated Base Defense Kitting. FY 2015 Plans: Engineering and Managment Services in support of Integrated Base Defense Software Development Efforts for Integrated Base Defense Kitting. FY 2016 Plans: Engineering and Management Services in Support of Integrated Base Defense Software Development and Initial Packaging Efforts for Integrated Base Defense Kitting.		-	0.398	0.137
Title: G-BOSS(E) Design and Build Description: G-BOSS(E) design and builds prototype tower systems. FY 2016 Plans:		-	-	5.750

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Completes initial design and begins development of tower prototypes to support developmental testing activities			
Title: IGSSR-C Design and Development Description: IGSSR-C design efforts and integration activities. FY 2016 Plans: Completes the initial Design and Development of the IGSSR-C Architecture, Software Framework and Core Capabilities and initiates IGSSR-C integration efforts.	-	-	3.500
Accomplishments/Planned Programs Subtotals	-	4.362	10.750

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
• G-BOSS(E) (M90212): <i>G-BOSS(E) (M90212)</i>	-	-	-	-	-	-	11.409	23.210	27.472	Continuing	Continuing
• IGSSR-C (M90106): <i>IGSSR-C (M90106)</i>	-	-	-	-	-	2.000	1.055	7.000	9.010	Continuing	Continuing

Remarks

D. Acquisition Strategy

Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)) will replace the interim PSS-G Increment 1 towers with improved persistent surveillance capabilities along with network integration and better mobility utilizing modular configurations. The G-BOSS(E) Capability Design Document (CDD) was approved May 2014. In FY 2014, the Department of Defense (DoD) Physical Security Enterprise and Analysis Group (PSEAG) provided funds to conduct pre-milestone B activities. It is anticipated that a G-BOSS(E) Materiel Development Decision (MDD) will occur FY 2015. Pending successful Milestone B decision, the existing US Marine Corps (USMC) tower's design (Ground Based Operational Surveillance System) (GBOSS) will be leveraged and upgraded to meet the Army's G-BOSS(E) tower requirement. The Naval Surface Warfare Center (NSWC) at Crane, Indiana will provide system design, development and integration. Future funding will complete development and early Operational Testing (OT) leading to Milestone C in FY 2018. Pending a successful Milestone C decision in FY 2018, the proposed acquisition strategy is to award a Low Rate Initial Production Firm Fixed Price (FFP) competitive contract in FY 2018, followed by Full Rate Production (FRP) in FY 2020.

The Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) provides a layered approach to integrate sensors, sensor systems and unmanned systems. The IGSSR-C Capability Design Document (CDD) was approved September 2013 and Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA(ALT)) assigned IGSSR-C Office of Primary Responsibility (OPR) to PEO IEW&S in December 2013. IGSSR-C is a suite of software that achieves integration, fusion and interoperability in support of the Army Acquisition Executive's Common Operating Environment (COE) Command Post Compute Environment (CPCE) effort. In FY 2014, the Department of Defense (DoD) Physical Security Enterprise and Analysis Group (PSEAG) provided funds to conduct pre-milestone B

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Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
2040 / 7	PE 0205402A / <i>Integrated Base Defense - Operational System Dev</i>	EF2 / <i>Integrated Base Defense</i>

activities. The IGSSR-C Materiel Development Decision (MDD) is planned for FY 2015. Pending a successful milestone decision and strategy approval, the plan is to award a Cost Plus Fixed Fee (CPFF) contract in FY 2016. This effort will provide for the design maturation/optimization and software/hardware integration. Pending a successful Milestone C decision in FY 2018, the proposed acquisition strategy is to award a Low Rate Initial Production Firm Fixed Price (FFP) competitive contract, followed by Full Rate Production (FRP) contract in FY 2020.

The IBD acquisition strategy is to leverage existing IBD-related government organizations and to competitively award multiple contracts in support of IBD objectives for the development of holistic IBD architectures and products to support interoperability of fielded and emerging IBD-related systems.

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				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 7				PE 0205402A / Integrated Base Defense - Operational System Dev				EF2 / Integrated Base Defense							
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
G-BOSS(E) Project Management	MIPR	PM EOIR : Fort Belvoir, VA	0.000	-		-		0.288	Nov 2015	-		0.288	Continuing	Continuing	Continuing
IGSSR-C Project Management	MIPR	PM EOIR : Fort Belvoir, VA	0.000	-		-		0.175	Nov 2015	-		0.175	Continuing	Continuing	Continuing
IBD Engineering and Management Services	Allot	Joint Project Manager Guardian Joint Product Manager Force Protection Services : Fort Belvoir, VA	0.000	-		0.398	Mar 2015	0.137	Jan 2016	-		0.137	Continuing	Continuing	Continuing
Subtotal			0.000	-		0.398		0.600		-		0.600	-	-	-
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
G-BOSS(E) Design	MIPR	NSWC Crane : Crane, IN	0.000	-		-		2.228	Jan 2016	-		2.228	Continuing	Continuing	Continuing
G-BOSS(E) Prototypes	MIPR	RDECOM CERDEC : Fort Belvoir, VA	0.000	-		-		2.733	Jan 2016	-		2.733	Continuing	Continuing	Continuing
IGSSR-C Design	C/CPFF	TBD : TBD	0.000	-		-		2.777	Nov 2015	-		2.777	Continuing	Continuing	Continuing
IBD Architecture and Software Development	C/CR	AMRDEC : Huntsville, AL	0.000	-		3.561		0.614	Jan 2016	-		0.614	Continuing	Continuing	Continuing
Subtotal			0.000	-		3.561		8.352		-		8.352	-	-	-
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
G-BOSS(E) Design Support	MIPR	RDECOM CERDEC : Fort Belvoir, VA	0.000	-		-		0.502	Jan 2016	-		0.502	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 7				PE 0205402A / Integrated Base Defense - Operational System Dev				EF2 / Integrated Base Defense							
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
IGSSR-C Design Support	MIPR	RDECOM CERDEC : Fort Belvoir, VA	0.000	-		-		0.547	Jan 2016	-		0.547	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		1.049		-		1.049	-	-	-
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
IBD Test and Evaluation	MIPR	A TEC : Aberdeen Proving Ground, MD	0.000	-		0.403	Mar 2015	0.749		-		0.749	-	1.152	-
Subtotal			0.000	-		0.403		0.749		-		0.749	-	1.152	-
Project Cost Totals			0.000	-		4.362		10.750		-		10.750	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205402A / <i>Integrated Base Defense - Operational System Dev</i>	Project (Number/Name) EF2 / <i>Integrated Base Defense</i>
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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
(1) G-BOSS(E) Material Development Decision					▲1 MDD				Risk Reduction																			
G-BOSS(E) Risk Reduction																												
(2) G-BOSS(E) Milestone B																												
G-BOSS(E) Engineering Manufacturing & Development																												
(3) G-BOSS(E) Milestone C																												
G-BOSS(E) Production																												
(4) IGSSR-C Material Development Decision					▲4 MDD				Risk Reduction																			
IGSSR-C Risk Reduction																												
(5) IGSSR-C Milestone B																												
IGSSR-C Engineering Manufacturing & Development																												
(6) IGSSR-C Milestone C																												
IGSSR-C Production																												
IBD CONOPS & Architecture																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205402A / <i>Integrated Base Defense - Operational System Dev</i>	Project (Number/Name) EF2 / <i>Integrated Base Defense</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
G-BOSS(E) Material Development Decision	3	2015	3	2015
G-BOSS(E) Risk Reduction	1	2016	2	2016
G-BOSS(E) Milestone B	2	2016	2	2016
G-BOSS(E) Engineering Manufacturing & Development	1	2017	3	2018
G-BOSS(E) Milestone C	3	2018	3	2018
G-BOSS(E) Production	3	2018	4	2020
IGSSR-C Material Development Decision	3	2015	3	2015
IGSSR-C Risk Reduction	1	2016	2	2016
IGSSR-C Milestone B	2	2016	2	2016
IGSSR-C Engineering Manufacturing & Development	3	2016	3	2018
IGSSR-C Milestone C	3	2018	3	2018
IGSSR-C Production	3	2018	4	2020
IBD CONOPS & Architecture	2	2016	1	2017