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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2022 Army **Date:** May 2021

<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605033A / <i>Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	3.689	5.758	-	-	-	-	-	-	-	-	-
EQ3: <i>Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)</i>	-	3.689	5.758	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

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: Medium variant (mid sensor height) for small to medium size base camps and Heavy variant (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.

**B. Program Change Summary (\$ in Millions)**

	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>
Previous President's Budget	3.847	5.976	0.000	-	0.000
Current President's Budget	3.689	5.758	0.000	-	0.000
Total Adjustments	-0.158	-0.218	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.158	-0.218			

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**Exhibit R-2A, RDT&E Project Justification:** PB 2022 Army **Date:** May 2021

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605033A / <i>Ground-Based Operational Surveillance System - Expeditionary (GBOS S-E)</i>	<b>Project (Number/Name)</b> EQ3 / <i>Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
EQ3: <i>Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)</i>	-	3.689	5.758	-	-	-	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

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: Medium variant (mid sensor height) for small to medium size base camps and Heavy variant (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.

FY21 is the last year of RDT&E funding for this program.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2020	FY 2021	FY 2022
<p><b>Title:</b> GBOSS-E Design and Build</p> <p><b>Description:</b> 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: Medium variant (mid sensor height) for small to medium size base camps and Heavy variant (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.</p> <p>FY21 Base funding in the amount of \$5.976 million completes design engineering, documentation, and integration activities, builds Low Rate Initial Production (LRIP) systems, conducts Developmental Testing (DT) and Operational Assessment in lieu of an Initial Operational Test (IOT) and Limited User Test (LUT), Logistics Demonstration, Cyber related test events/assessments, and provides Program Management support.</p> <p><b>FY 2021 Plans:</b></p>	3.689	5.758	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605033A / <i>Ground-Based Operational Surveillance System - Expeditionary (GBOS S-E)</i>	<b>Project (Number/Name)</b> EQ3 / <i>Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
FY 2021 Plans: Funding supports completion of the Engineering Development phase leading to a Milestone C decision by the Milestone decision authority. Includes the low rate initial production of test assets and operational testing of the system leading to a full rate production decision.  <b><i>FY 2021 to FY 2022 Increase/Decrease Statement:</i></b> FY 2022: No RDT&E funding, Engineering Manufacturing Development (EMD) phase complete in FY21.			
<b>Accomplishments/Planned Programs Subtotals</b>	3.689	5.758	-

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

G-BOSS(E) will be funded OPA on line M90212000 beginning in FY22.

**D. Acquisition Strategy**

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 along with network integration and better mobility utilizing modular configurations. The G-BOSS(E) Capability Development Document (CDD) was Army Requirements Oversight Council (AROC) approved in May 2014. In FY 2013, FY 2014 & FY 2015, the Department of Defense (DoD) Physical Security Enterprise and Analysis Group (PSEAG) provided funds to conduct Pre-Milestone B activities.

G-BOSS(E) received an approved Materiel Development Decision (MDD) from the Milestone Decision Authority (MDA) on 4 December 2015. Milestone B decision accomplished 29 September 2017, the existing United States Marine Corps (USMC) tower's design (Ground-Based Operational Surveillance System) (G-BOSS) will be leveraged and modified to meet the Army's G-BOSS(E) program requirements.

The acquisition strategy for G-BOSS(E) was approved by the MDA on 11 December 2016, which approved plans to leverage the Naval Surface Warfare Center (NSWC) at Crane, Indiana and the Night Vision and Electronic Sensors Directorate (NVESD), Fort Belvoir, Virginia to provide system design, development, and integration support, as well as a Technical Data Package (TDP) to support future procurements.

Milestone C is planned for FY 2021.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army** **Date:** May 2021

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605033A / <i>Ground-Based Operational Surveillance System - Expeditionary (GBOS S-E)</i>	<b>Project (Number/Name)</b> EQ3 / <i>Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)</i>
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<b>Management Services (\$ in Millions)</b>				<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</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>			
GBOSS-E Project Management	MIPR	PM FPS : Fort Belvoir, VA	2.700	0.688	Jan 2020	0.700	Jan 2021	-		-		-	0.000	4.088	-
CVBIED JUONS 0540 Project Management	MIPR	PM FPS : Fort Belvoir, VA	0.051	-		-		-		-		-	0.000	0.051	-
MDAP Cost Overrun	TBD	OASA(FM&C) : Pentagon DC	0.001	-		-		-		-		-	0.000	0.001	-
<b>Subtotal</b>			2.752	0.688		0.700		-		-		-	0.000	4.140	N/A

<b>Product Development (\$ in Millions)</b>				<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</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>			
GBOSS-E Design Engineering	MIPR	NSWC Crane : Crane, IN	6.736	1.716	Jan 2020	0.670	Jan 2021	-		-		-	0.000	9.122	-
GBOSS-E Software Development	TBD	TBD : TBD	0.313	0.179		-		-		-		-	0.000	0.492	-
GBOSS-E Integration Support	MIPR	NSWC Crane : Crane, IN	1.125	0.430	Jan 2020	1.183	Jan 2021	-		-		-	0.000	2.738	-
Tech Data	MIPR	NSWC Crane : Crane, IN	1.100	-		-		-		-		-	0.000	1.100	-
CVBIED JUONS 0540 Wide Area Motion Imagery Sensor Development	MIPR	NAVAIR : Patuxent River, MD	7.208	-		-		-		-		-	0.000	7.208	-
CVBIED JUONS 0540 Wide Area Motion Imagery Sensor Development	MIPR	RDECOM : Fort Belvoir, VA	8.735	-		-		-		-		-	0.000	8.735	-
Hardware Procurement	MIPR	NSWC Crane : Crane Indiana	0.100	-		1.664		-		-		-	0.000	1.764	-
<b>Subtotal</b>			25.317	2.325		3.517		-		-		-	0.000	31.159	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army** **Date:** May 2021

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605033A / <i>Ground-Based Operational Surveillance System - Expeditionary (GBOS S-E)</i>	<b>Project (Number/Name)</b> EQ3 / <i>Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)</i>
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<b>Support (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NVESD Design Support	MIPR	RDECOM CERDEC : Fort Belvoir, VA	0.578	0.288	Jan 2020	0.165	Jan 2021	-		-		-	0.000	1.031	-
ARL Human Systems Integration Support	MIPR	US Army ARL : Adelphi, MD	0.079	0.026	Nov 2019	0.035	Nov 2020	-		-		-	0.000	0.140	-
CECOM FSD - Safety	MIPR	CECOM : APG, MD	0.070	0.034	Nov 2019	0.035	Nov 2020	-		-		-	0.000	0.139	-
CECOM ILSC	MIPR	CECOM : Various	0.040	0.047	Mar 2020	0.225	Mar 2021	-		-		-	0.000	0.312	-
<b>Subtotal</b>			0.767	0.395		0.460		-		-		-	0.000	1.622	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GBOSS-E Test and Evaluation	MIPR	A TEC : Aberdeen Proving Ground, MD	0.420	0.281	Jan 2020	1.081	Jan 2021	-		-		-	0.000	1.782	-
JUONS CC-0540 Test and Evaluation Support	MIPR	A TEC : Aberdeen Proving Ground, MD	1.178	-		-		-		-		-	0.000	1.178	-
<b>Subtotal</b>			1.598	0.281		1.081		-		-		-	0.000	2.960	N/A

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	30.434	3.689	5.758	-	-	-	0.000	39.881	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Army</b>		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605033A / <i>Ground-Based Operational Surveillance System - Expeditionary (GBOS S-E)</i>	<b>Project (Number/Name)</b> EQ3 / <i>Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)</i>

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026									
	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						
G-BOSS(E) Engineering Manufacturing & Development and Manual Development	[Redacted]																																	
G-BOSS(E) Developmental Testing																																		
G-BOSS(E) Operational Assessment																																		
G-BOSS(E) Logistics Demonstration																																		
G-BOSS(E) Milestone C																																		
G-BOSS(E) Low Rate Initial Production (LRIP)																																		
G-BOSS(E) Full Rate Production Decision																																		
G-BOSS(E) Full Rate Production																																		

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Army		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605033A / <i>Ground-Based Operational Surveillance System - Expeditionary (GBOS S-E)</i>	<b>Project (Number/Name)</b> EQ3 / <i>Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
G-BOSS(E) Engineering Manufacturing & Development and Manual Development	1	2019	1	2022
G-BOSS(E) Developmental Testing	4	2020	1	2021
G-BOSS(E) Operational Assessment	1	2021	2	2021
G-BOSS(E) Logistics Demonstration	3	2021	3	2021
G-BOSS(E) Milestone C	3	2021	3	2021
G-BOSS(E) Low Rate Initial Production (LRIP)	3	2021	2	2022
G-BOSS(E) Full Rate Production Decision	2	2022	2	2022
G-BOSS(E) Full Rate Production	3	2022	4	2026