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

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS
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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	-	32.567	36.664	19.473	0.000	19.473	-	-	-	-	-	-
676001: NATO AGS	-	32.567	36.664	19.473	0.000	19.473	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

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

This program funds the U.S. contribution to the Alliance Ground Surveillance (AGS) system, a North Atlantic Treaty Organization (NATO), Direct Commercial Sale acquisition. AGS is an airborne ground surveillance capability that provides continuous, wide area surveillance in all weather conditions. It will provide NATO decision makers with near real time information and situational awareness concerning friendly, neutral and opposing ground and maritime forces to support mission planning and execution, including force protection and targeting. All NATO nations will have access to AGS collection data, creating opportunities for burden sharing with the processing and exploitation of Intelligence, Surveillance, and Reconnaissance (ISR) data.

The AGS program includes: air and ground segment acquisitions, operations of the NATO AGS Management Agency (NAGSMA), development of operations and support definition and establishment of an initial support capability. The air segment consists of five (5) air vehicles based on unique exportable configurations of the United States Air Force Global Hawk air frame, Navy Triton command and control architecture and the U.S. Multi-Platform Radar Technology Insertion Program (MP-RTIP) radar. The U.S. will also integrate new Maritime Moving Target and Inverse Synthetic Aperture Radar capability into the MP-RTIP radar for NATO AGS. The ground segment consists of fixed site and transportable/mobile ground stations for air vehicle Command and Control (C2), data exploitation and distribution. Operations and continuing In-Service Support will be funded through a future NATO Military Commanders' Capability Package funded within the NATO Security Investment Program (NSIP).

U.S. participation in NATO AGS was ratified by Secretary of Defense (SECDEF) signature/approval of the NATO AGS Program Memorandum of Understanding (PMOU) in June 2009 and includes 15 nations. In FY 2012, OSD transferred the NATO AGS program to the U.S. Air Force (USAF) for management and execution of the Research and Development effort.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver NATO AGS system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY20 \$0.000M was expended for civilian pay expenses in this program element, and in FY21 \$0.000M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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<b>B. Program Change Summary (\$ 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>
Previous President's Budget	32.567	36.731	0.795	0.000	0.795
Current President's Budget	32.567	36.664	19.473	0.000	19.473
Total Adjustments	0.000	-0.067	18.678	0.000	18.678
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	-0.067	18.678	0.000	18.678

**Change Summary Explanation**

Funding increased due to contract award for maritime modes and program protection integration and testing.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
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<b>Title:</b> Design / Development of NATO Alliance Ground Surveillance (AGS)	5.848	0.254	4.384
<b>Description:</b> U.S. contribution to NATO for AGS development acquisition and initial fielding. Supports configuration changes at a system level and air vehicle exportability modifications.			
<b>FY 2021 Plans:</b> - Supporting U.S. Government's contribution to NATO AGS Management Agency (NAGSMA) closeout costs.			
<b>FY 2022 Plans:</b> - Will continue to support U.S. Government's contribution to NATO AGS Management Agency (NAGSMA) closeout costs.			
<b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> - Funding increased due to costs associated with final contract closeout and transition to operations.			
<b>Title:</b> Design/Development of Maritime Modes	24.682	23.463	13.261
<b>Description:</b> Supports development and flight testing of maritime modes capability for RTIP and additional configuration changes that cannot be performed under the direct commercial sale contract between Northrop Grumman and NAGSMA.			
<b>FY 2021 Plans:</b>			

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<p>- Continues development of Maritime Modes Capability and additional configuration changes. Includes pre-contract negotiations and final award with Northrop Grumman. Continues software development and integration on aircraft.</p> <p><b>FY 2022 Plans:</b></p> <p>- Will integrate new software into ground systems for test. Will integrate and test software on remaining NATO AGS aircraft.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b></p> <p>- Funding decreased due to progress towards completion of Maritime Modes effort.</p>				
<p><b>Title:</b> Technical Support for NATO Alliance Ground Surveillance (AGS)</p> <p><b>Description:</b> Provide engineering and logistics support for NATO AGS development, fielding, deferred capabilities, and obsolescence studies.</p> <p><b>FY 2021 Plans:</b></p> <p>- Continues engineering, logistics, and program office support for Maritime Modes development and fielding. Support evaluation of fielded aircraft to inform studies on sustainment requirements.</p> <p><b>FY 2022 Plans:</b></p> <p>- Will continue engineering, logistics, and program office support for Maritime Modes development and fielding. Will support evaluation of fielded aircraft to inform studies on sustainment requirements.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b></p> <p>- Funding increased due to greater level of effort needed for fielding of final configuration.</p>		1.002	0.103	1.778
<p><b>Title:</b> Test and Evaluation Support for NATO Alliance Ground Surveillance (AGS)</p> <p><b>Description:</b> Provide testing and evaluation via the Air Force Test Center.</p> <p><b>FY 2021 Plans:</b></p> <p>- Continuing flight test support to Maritime Modes development and initial fielding.</p> <p><b>FY 2022 Plans:</b></p> <p>- Will conduct Maritime Modes flight testing.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b></p> <p>- Funding decreased due to completion of flight testing on initial aircraft.</p>		1.035	12.844	0.050
<b>Accomplishments/Planned Programs Subtotals</b>		32.567	36.664	19.473

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

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u> <u>Base</u>	<u>FY 2022</u> <u>OCO</u>	<u>FY 2022</u> <u>Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 07 PE 0305220F: RQ-4 UAV	191.733	163.291	83.124	-	83.124	-	-	-	-	-	-

**Remarks**

**E. Acquisition Strategy**

Acquisition of the AGS system is being accomplished via a single delivery strategy. The system has been delivered via a fixed price direct commercial sale contract between Northrop Grumman Integrated System Sector International, Incorporated (NGISSII) & NATO, which was signed on 20 May 2012. The program is managed by the NATO AGS Management Agency (NAGSMA). A cost-plus incentive fee US contract is in place for the integration and testing of Maritime Modes.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force												Date: May 2021				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0305238F / NATO AGS				676001 / NATO AGS								
Product Development (\$ in Millions)				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				
NATO AGS Design / Development	SS/FFP	NATO AGS Management Agency : Brussels, Belgium	-	5.848	Oct 2019	0.254	Dec 2020	4.384	Dec 2021	-		4.384	-	-	-	
Maritime Modes Design / Development	SS/CPIF	AFLCMC/HB : WPAFB, OH	-	24.682	Dec 2019	23.463	Dec 2020	13.261	Dec 2021	-		13.261	-	-	-	
<b>Subtotal</b>			-	30.530		23.717		17.645		-		17.645	-	-	N/A	
Support (\$ in Millions)				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				
NATO AGS Technical Support	SS/FFP	Multiple : Hanscom, WPAFB, OH	-	1.002	Dec 2019	0.103	Dec 2020	1.778	Dec 2021	-		1.778	-	-	-	
<b>Subtotal</b>			-	1.002		0.103		1.778		-		1.778	-	-	N/A	
Test and Evaluation (\$ in Millions)				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				
NATO AGS Test and Evaluation Support	SS/FFP	Multiple: AFLCMC/WI, AFLCMC/HB, 412 TW, 88 CG : Hanscom, WPAFB, Edwards	-	1.035	Oct 2019	12.844	Dec 2020	0.050	Dec 2021	-		0.050	-	-	-	
<b>Subtotal</b>			-	1.035		12.844		0.050		-		0.050	-	-	N/A	
<b>Project Cost Totals</b>			-	32.567		36.664		19.473		-		19.473	-	-	N/A	

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

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS	<b>Project (Number/Name)</b> 676001 / NATO AGS
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	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
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**Remarks**  
 The Industrial Structure consists of Northrop Grumman (Northrop Grumman Integrated Systems Sector International, Incorporated - NGISSII) prime contractor, three subcontractors, and 15 participating nation industries that will receive direct work. There are no indirect offsets. The technical support of the NATO AGS program includes Advisory & Assistance Services to NATO. The test and evaluation support of the NATO AGS program includes the AFMC 412 Test Wing support of Flight Testing and Frequency Management by the AFMC 88 Communication Group. The management services support of the NATO AGS program includes MITRE Engineering, U.S. Navy's Triton program office support, U.S. government travel, and supplies.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force** **Date:** May 2021

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS	<b>Project (Number/Name)</b> 676001 / NATO AGS
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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

<b>NATO AGS</b>																												
Design and Development - NATO AGS																												
Aircraft #1 Ferry Flight to Main Ops Base (November 2019)																												
Aircraft #2 Delivery to NATO (December 2019)																												
Aircraft #3 & #4 Delivery to NATO (July 2020)																												
Aircraft #5 Delivery to NATO (October 2020)																												
System Level Performance Verification (December 2019 - March 2021)																												
IOC (March 2021)																												
FOC (December 2023)																												
Test & Eval Support to NATO AGS																												
Flight Test - NATO AGS (September 2019 - September 2020)																												
Design & Development - Maritime Modes																												
Tech Support - NATO AGS																												
Maritime Mode Test Support																												

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**Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force** **Date:** May 2021

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS	<b>Project (Number/Name)</b> 676001 / NATO AGS
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>NATO AGS</b>				
Design and Development - NATO AGS	1	2020	4	2022
Aircraft #1 Ferry Flight to Main Ops Base (November 2019)	1	2020	1	2020
Aircraft #2 Delivery to NATO (December 2019)	1	2020	1	2020
Aircraft #3 & #4 Delivery to NATO (July 2020)	4	2020	4	2020
Aircraft #5 Delivery to NATO (October 2020)	1	2021	1	2021
System Level Performance Verification (December 2019 - March 2021)	1	2020	2	2021
IOC (March 2021)	2	2021	2	2021
FOC (December 2023)	1	2024	1	2024
Test & Eval Support to NATO AGS	1	2020	1	2021
Flight Test - NATO AGS (September 2019 - September 2020)	1	2020	4	2020
Design & Development - Maritime Modes	1	2020	1	2023
Tech Support - NATO AGS	1	2020	4	2023
Maritime Mode Test Support	2	2020	4	2022