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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Air Force **Date:** April 2022

<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 0207590F / <i>Seek Eagle</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	29.572	30.539	32.853	0.000	32.853	34.084	34.719	35.453	36.241	Continuing	Continuing
674037: <i>SEEK EAGLE Certifications</i>	-	29.572	30.539	32.853	0.000	32.853	34.084	34.719	35.453	36.241	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Air Force operates a variety of combat aircraft that carry numerous and varied stores munitions, missiles, fuel tanks, targeting pods, range pods, electronic countermeasures pods, etc. Stores are carried in many different loading combinations determined by operational and training scenarios, missions, tactics, and weapon development programs. Aircraft-store configurations/carriage and employment requirements change as operational plans and tactics change and as new stores are developed and fielded. Before operational, training, or test use, the Air Force must certify these configurations for safe loading, carriage, and separation (jettison and normal release), as well as verify ballistics accuracy under the user-certified carriage and employment parameters. The Air Force SEEK EAGLE program completes certification recommendations and recommended flight clearances through any combination of engineering analysis, wind tunnel testing, modeling and simulation, and ground/flight test and evaluation. The SEEK EAGLE effort encompasses eight disciplines: Fit and Function, Flutter, Structural Integrity, Stability and Control, Electromagnetic Compatibility/Interference (EMC/EMI), Separations, Ballistics, and Safe Escape.

In support of certification, the program recommends approximately 1000 aircraft-store combinations for flight each year with analysis and testing, requiring from weeks to years depending on the complexity. Integrated solutions for combat aircrew weapon delivery planning problems are developed and provided to combat forces via Combat Weapons Delivery Software (CWDS) and Joint Safe Escape Analysis Solution (JSEAS). SEEK EAGLE works in coordination with the Air Force Safety Center to provide Hazards of Electromagnetic Radiation to Ordnance (HERO) analysis and certification recommendations of ordnance systems containing electro-explosive devices. The program is also responsible for inserting new and emerging technologies into the SEEK EAGLE process to make the SEEK EAGLE certification process more efficient in support of rapid acquisition timelines, as well as providing resources for the sustainment of a viable Air Force aircraft-store certification capability.

SEEK EAGLE funds are currently budgeted to support certification testing and analysis for new and inventory stores including, but not limited to: Small Diameter Bomb I and II (SDB), Laser Joint Direct Attack Munitions (LJDAM), Joint Air-to-Surface Standoff Missile (JASSM), Long-Range Anti-Ship Missile (LRASM), Advanced Medium Range Air-to-Air Missile (AIM-120D), Miniature Air-Launched Decoy (MALD), BRU-57 (Smart Bomb Rack), BRU-61 (SDB Bomb Rack), Advanced Precision Kill Weapon System (APKWS), Sniper Targeting Pod with video data link, LITENING Targeting Pod with video data link, laser guided bombs, B61-12 nuclear free-fall weapon, penetrator warhead upgrades, practice bombs, and aircraft instrumentation pod modifications. SEEK EAGLE funds are also used to support certification of other inventory stores on Combat Air Forces (CAF) and Special Operations Command (SOCOM) aircraft. In addition, these funds further support capability development and weapons certification efforts required by Air Combat Command (ACC) to achieve Full Operational Capability (FOC) for the F-35A. Likewise, these funds also support F-22A weapons certification efforts for emerging weapons and B-21 development for critical Engineering and Manufacturing Development (EMD) milestones.

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This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY21 \$0.00 was expended for civilian pay expenses in this program element, and in FY22 \$0.00 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.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
Previous President's Budget	29.626	30.539	0.000	0.000	0.000
Current President's Budget	29.572	30.539	32.853	0.000	32.853
Total Adjustments	-0.054	0.000	32.853	0.000	32.853
• Congressional General Reductions	-0.054	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	0.000	32.853	0.000	32.853

**Change Summary Explanation**

The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY 2023 cannot be made in a relevant manner.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b>Title:</b> Aircraft-Store Certification	1.735	1.720	2.610
<b>Description:</b> Evaluates aircraft-store compatibility through analysis of ground and flight test data. Funds direct labor for SEEK EAGLE certifications. Supports procurement of test assets, such as instrumented weapons, and includes end-to-end tracking of MAJCOM requirements from user request to tech data fielding and operational flight program (OFP) updates. Provides certification recommendations to airworthiness authorities.			
<b>FY 2022 Plans:</b>			

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<p>Provide for the United States Air Force (USAF) Air-to-Air and Air-to-Ground Munitions certification efforts to include countermeasures, towed-decoys, and Airborne Instrumentation Systems pods on USAF inventory aircraft such as A-10, B-1, B-2, B-52, F-15, F-16, F-22, F-35, T-38, and near term inventory aircraft like A-29, AT-6, F-15EX, and MH-139. Continue CWDS upgrade support.</p> <p><b>FY 2023 Plans:</b> Continue to provide for USAF Air-to-Air and Air-to-Ground Munitions certification efforts such as towed decoys, ECM pods, chaff/flare countermeasures certification efforts, Airborne Instrumentation Systems pods, fuel tanks, and travel pods certification efforts. Continue CWDS upgrade support.</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Increase is to support F-16 Flutter Flight Test Program, which will reduce the need for flight testing for future F-16 aircraft-store compatibility projects, supporting the longevity and capability expansion of the F-16 fleet to meet warfighter needs.</p>				
<p><b>Title:</b> Operations Baseline and Mission Support</p> <p><b>Description:</b> Supports the ability to rapidly meet emerging warfighter needs for global operations and other ongoing world-wide operations through sustainment of a viable Air Force aircraft-store certification capability.</p> <p><b>FY 2022 Plans:</b> Support SEEK EAGLE infrastructure and resource capacity needs in alignment with USAF demands on the SEEK EAGLE enterprise. Finalize stand-up for the Edwards Operating Location (OL) in support of next-generation test activities.</p> <p><b>FY 2023 Plans:</b> Continue to support increased Air Force munition and aircraft capability requirements that drive increased infrastructure and resource capacity needs within the SEEK EAGLE enterprise.</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Increase is due to inflation adjustment.</p>		20.098	21.225	21.604
<p><b>Title:</b> Advanced Capability Development</p> <p><b>Description:</b> Provides resources to increase the Air Force SEEK EAGLE OFFICE (AFSEO) organic capabilities; to support advanced weapons such as hypersonic weapons and other classified weapons programs, as well as investing in the development of advanced modeling and analytical tools to make the SEEK EAGLE certification process more efficient in support of rapid acquisition timelines. These resources include, but are not limited to: artificial intelligence, modeling and simulation enhancements, wind tunnel model development, automated tool enhancements, information technology enhancements, and facility improvements.</p>		1.415	2.726	2.584

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<p><b><i>FY 2022 Plans:</i></b> Commence B-52 wind tunnel efforts for multiple external stores. Continue the development and sustainment of F-35 large-scale wind tunnel model. Continue supporting USAF investments in modeling and simulation for current hypersonic programs, Long Range Stand Off Weapon (LRSO), Stand-In Attack Weapon (SiAW), and early involvement in Global Precision Attack Weapons (GPAW).</p> <p><b><i>FY 2023 Plans:</i></b> Commence the F-15EX model wind tunnel development, continue sustainment of the F-35 wind tunnel model, and continue supporting investments in other advanced modeling and simulation, automated tool and information technology enhancements.</p> <p><b><i>FY 2022 to FY 2023 Increase/Decrease Statement:</i></b> Decrease is minimal, due to redefinition of capability development efforts.</p>				
<p><b><i>Title:</i></b> Tools, Equipment, and Capability Sustainment</p> <p><b><i>Description:</i></b> Supports development and sustainment of state-of-the-art engineering and business tools to support the SEEK EAGLE enterprise. Funding resources are required for operational management of existing information and technology infrastructure, hardware, software, and equipment.</p> <p><b><i>FY 2022 Plans:</i></b> Continue building upon AFSEO's Advance Analytics Artificial Intelligence (AAAI) digital transformation effort that provides predictive outcomes to rapidly determine analogy based certification recommendations. Continue to maintain and enhance security infrastructure and tool development for next-generation weapons certification.</p> <p><b><i>FY 2023 Plans:</i></b> Continue to support development and sustainment of state-of-the-art engineering and business tools to support SEEK EAGLE enterprise.</p> <p><b><i>FY 2022 to FY 2023 Increase/Decrease Statement:</i></b> Increase supports operation software requirements for the rapid/agile production of AFSEO flight clearances, and the expansion of production capability and digital storage capacity to support the AFSEO aircraft-store certification process.</p>		6.324	4.868	6.055
<b>Accomplishments/Planned Programs Subtotals</b>		29.572	30.539	32.853
<b>D. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				

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<b><u>E. Acquisition Strategy</u></b> The SEEK EAGLE program is not an acquisition program in itself; instead it supports other acquisition programs. For initial aircraft-weapons integration, the aircraft or weapon program office is responsible for budgeting and providing the test assets to the Air Force SEEK EAGLE Office (AFSEO) for the store certification requirements. For post-integration certification requirements, AFSEO funds are used to obtain the non-inventory test assets. In addition to the above highlights, budgeting responsibilities for AFSEO are delineated in Air Force Instruction 63-101/20-101, paragraph 5.4.22.1.3, dated 30 June 2020.		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force** **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207590F / <i>Seek Eagle</i>	<b>Project (Number/Name)</b> 674037 / <i>SEEK EAGLE Certifications</i>
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<b>Product Development (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Advanced Data Analytics - Artificial Intelligence (AI)	SS/FP	TAMR : Cambridge, MA	-	2.155	Mar 2021	1.708	Apr 2022	1.875	Mar 2023	-		1.875	Continuing	Continuing	-
AFSEO Mission and Planning Support (SEMATS)	C/CPFF	ERC : Ft. Walton Beach, FL	-	11.272	Nov 2020	13.188	Oct 2021	13.460	Oct 2022	-		13.460	Continuing	Continuing	-
F-35 Capabilities	C/CPFF	Lockheed Martin : Marietta, GA	-	0.157	Nov 2020	0.255	Nov 2021	0.100	Nov 2022	-		0.100	Continuing	Continuing	-
Multiple Fighter and Weapon Capability Support	C/CPFF	Multiple : Multiple	-	0.106	Mar 2021	0.058	Mar 2022	0.064	Mar 2023	-		0.064	Continuing	Continuing	-
F-16 Aero Sustainment	C/CPFF	Lockheed Martin : Fort Worth, TX	-	0.103	Feb 2021	0.160	May 2022	0.163	Feb 2023	-		0.163	Continuing	Continuing	-
<b>Subtotal</b>			-	13.793		15.369		15.662		-		15.662	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Flight Tests and Aircraft/Store Compatibility Analysis	PO	96th Test Wing : Eglin AFB, FL	-	11.628	Oct 2020	11.979	Oct 2021	14.225	Oct 2022	-		14.225	Continuing	Continuing	-
Wind Tunnel Model/Design and Testing	PO	Arnold Engineering Dev Complex : Arnold AFB, TN	-	2.593	Jan 2021	2.533	Jan 2022	2.384	Jan 2023	-		2.384	Continuing	Continuing	-
<b>Subtotal</b>			-	14.221		14.512		16.609		-		16.609	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
A&AS Support (TMAS)	C/CPFF	AFTC : Eglin AFB, FL	-	0.114	Oct 2020	0.105	Oct 2021	0.107	Oct 2022	-		0.107	Continuing	Continuing	-
Management Support	Various	Various : Various, FL	-	1.444	Oct 2020	0.553	Oct 2021	0.475	Oct 2022	-		0.475	Continuing	Continuing	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force** **Date:** April 2022

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FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
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>SEEK EAGLE</b>	
Aircraft-Store Certification	
Operations Baseline and Mission Support	
Advanced Capability Development	
Tools, Equipment, and Capability Sustainment	

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2023 Air Force **Date:** April 2022

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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>SEEK EAGLE</b>				
Aircraft-Store Certification	1	2021	4	2027
Operations Baseline and Mission Support	1	2021	4	2027
Advanced Capability Development	1	2021	4	2027
Tools, Equipment, and Capability Sustainment	1	2021	4	2027

**Note**

Note: The SEEK EAGLE program supports both production stores on production aircraft and the planning for future acquisition program milestones without an anticipated end date. Current warfighter requirements trigger the SEEK EAGLE process for requested aircraft-store configurations, and work is completed in accordance with designated user priorities established through the SEEK EAGLE Prioritization List process.