

# UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0207590F I Seek Eagle							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	21.131	25.308	25.397	0.000	25.397	24.885	25.349	25.788	26.317	Continuing	Continuing
674037: SEEK EAGLE Certifications	-	21.131	25.308	25.397	0.000	25.397	24.885	25.349	25.788	26.317	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 countless different loading combinations determined by operational and training scenarios, missions, tactics, and weapon development programs. Aircraft stores combinations 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, Loads, Stability and Control, Electromagnetic Compatibility/Interference (EMC/EMI), Separations, Ballistics, and Safe Escape.

In support of certification, the program recommends about 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 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 & II (SDB), Laser Joint Direct Attack Munitions (LJDAM), Joint Air-to-Surface Standoff Missile (JASSM), Air Intercept Missile (AIM-9X), 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 (Mod 12), penetrator warhead upgrades (BLU-111/BLU-117), practice bomb 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, assist the F-35 JPO with subject matter expertise in the System Development and Demonstration phase (e.g., development of organic store certifications capability to support F-35 in the Production, Sustainment, and Follow-on Development phases), sustain organic F-22 store certifications capability, and to obtain non-inventory stores and store data for post-integration certification requirements.

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force				Date: May 2017				
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0207590F I Seek Eagle						
This program is in Budget Activity 7, Operational System Development. These budget activities include development efforts to upgrade systems currently fielded or which have approval for full rate production and anticipate production funding in the current or subsequent year.								
B. Program Change Summary (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total		
Previous President's Budget		21.564	25.308	25.324	0.000	25.324		
Current President's Budget		21.131	25.308	25.397	0.000	25.397		
Total Adjustments		-0.433	0.000	0.073	0.000	0.073		
• 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		-0.433	0.000					
• Other Adjustments		0.000	0.000	0.073	0.000	0.073		
Change Summary Explanation								
No Significant Changes								
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: F-22A				0.800	1.000	0.800	0.000	0.800
Description: F-22A Capability Development and Weapons Certification.								
FY 2016 Accomplishments:								
- Completed certification of AIM-9X								
- Began aircraft/store compatibility (ASC) efforts for requested configurations								
FY 2017 Plans:								
- Continue Aircraft/Store Compatibility (ASC) efforts for requested configurations								
N/A								
FY 2018 Base Plans:								
- Continue Aircraft/Store Compatibility (ASC) efforts for requested configurations								

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force				Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0207590F I Seek Eagle				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
N/A						
FY 2018 OCO Plans: N/A						
Title: F-35  Description: F-35 Capability Development for SEEK EAGLE to support Combat Air Force's (CAF's) anticipated requirements after Initial Operational Capability (IOC).  FY 2016 Accomplishments: - Continued development of F-35 engineering capability in all eight SEEK EAGLE engineering disciplines - Completed certification of GBU-12 and GBU-31 mixed loads - Supported integration of the GBU-28E/B and FMU-167 into GWTS and CWDS to meet required fielding dates - Supported B-2 migration to JMPS environment using Mission Planning UAI integration  FY 2017 Plans: - Continue development of F-35 engineering capability in all eight SEEK EAGLE engineering disciplines by receiving contractor data, tools, and technical support (FOC Toolsets) - Transitioning development environment to Falconview Graphical Display System and Windows 10 per ACC requirements - Implementing multiple high priority user requirements reviewed by ACC  FY 2018 Base Plans: - Continue development of F-35 engineering capability in all eight SEEK EAGLE engineering disciplines by receiving contractor data, tools, and technical support (FOC Toolsets) - Continue implementing high priority user requirements reviewed by ACC  FY 2018 OCO Plans: N/A		1.500	3.200	3.715	0.000	3.715
Title: M&S Capability  Description: Modeling and Simulation (M&S) capability development in support of store certification  FY 2016 Accomplishments: - Continued development and improvement of M&S capability to support store certification disciplines.		2.600	3.558	3.000	0.000	3.000

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force				Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0207590F I Seek Eagle				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
<div>- Developed tools necessary to characterize F-22 and F-35 weapons bay environments/wing buffet.</div> <div><b>FY 2017 Plans:</b><div>- Continue development and improvement of M&amp;S capability to support store certification disciplines.</div><div>- Develop tools necessary to characterize F-22 and F-35 weapons bay environments/wing buffet.</div></div> <div><b>FY 2018 Base Plans:</b><div>- Continue development and improvement of M&amp;S capability to support store certification disciplines.</div><div>- Develop tools necessary to characterize F-22 and F-35 weapons bay environments/wing buffet.</div></div> <div><b>FY 2018 OCO Plans:</b><div>N/A</div></div>						
<div><b>Title:</b> Aircraft/Store Compatibility (ASC) Analysis</div> <div><b>Description:</b> Evaluate aircraft/store compatibility through analysis, M&amp;S and flight and ground test. Provide flight recommendations to airworthiness authorities.</div> <div><b>FY 2016 Accomplishments:</b><div>- Continued to support provide compatibility flight recommendations as requested by ACC/A8, AFLCMC, AFSOC, AFGSC and other agencies.</div><div>- Performed extensive SDB II, AIM-9X and B-61 (MOD 12) flight testing.</div></div> <div><b>FY 2017 Plans:</b><div>- Continue to provide compatibility flight recommendations as requested by ACC/A8, AFLCMC, AFSOC, AFGSC and other agencies.</div><div>- Perform extensive SDB II, AIM-9X and B-61 (MOD 12) flight testing.</div></div> <div><b>FY 2018 Base Plans:</b><div>- Continue to provide compatibility flight recommendations as requested by ACC/A8, AFLCMC, AFSOC, AFGSC and other agencies.</div><div>- Perform extensive SDB II, AIM-9X and B-61 (MOD 12) flight testing.</div></div> <div><b>FY 2018 OCO Plans:</b><div>N/A</div></div>		3.344	3.800	3.820	0.000	3.820
<div><b>Title:</b> AFSEO Mission and Planning Support</div>		12.887	13.750	14.062	0.000	14.062

## UNCLASSIFIED

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> FY 2018 Air Force				<b>Date:</b> May 2017		
<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>				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>						
	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	
<p><b>Description:</b> AFSEO Mission and Planning Support for all disciplines. Previously titled "Organic F-35 and CWDS Capabilities"</p> <p><b>FY 2016 Accomplishments:</b> - AFSEO Mission and Planning supported for all disciplines to include, but not limited to, mission planning, loads, flutter, separations, safe escape, engineering analysis, information assurance, and organic F-35 and CWDS support for B61-12 and APKWS, and immediate warfighter support such as Operation Inherent Resolve and Operation Noble Eagle.</p> <p><b>FY 2017 Plans:</b> - AFSEO Mission and Planning support for all disciplines to include, but not limited to, mission planning, loads, flutter, separations, safe escape, engineering analysis, and information assurance for 5th generation aircraft and immediate warfighter support.</p> <p><b>FY 2018 Base Plans:</b> - AFSEO Mission and Planning support for all disciplines to include, but not limited to, mission planning, loads, flutter, separations, safe escape, engineering analysis, and information assurance for B21, 5th generation aircraft, and immediate warfighter support.</p> <p><b>FY 2018 OCO Plans:</b> N/A</p>						
<b>Accomplishments/Planned Programs Subtotals</b>		21.131	25.308	25.397	0.000	25.397
<b>D. Other Program Funding Summary (\$ in Millions)</b> N/A						
<b>Remarks</b>						
<b>E. Acquisition Strategy</b> The SEEK EAGLE program does not execute in accordance with established acquisition program milestones. For initial aircraft-weapons integration, the aircraft or weapon program office is responsible for budgeting and providing the test assets to AFSEO for the store certification requirements. For post integration certification requirements, AFSEO funds are used to obtain the non-inventory test assets.						

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force		Date: May 2017
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207590F / <i>Seek Eagle</i>	
<b>F. Performance Metrics</b> Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.		

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force												Date: May 2017			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207590F / <i>Seek Eagle</i>				Project (Number/Name) 674037 / <i>SEEK EAGLE Certifications</i>					
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
F-22 Capabilities	C/CPFF	Lockheed Martin : Marietta, GA	-	0.450	Mar 2016	0.600	Mar 2017	0.450	Mar 2018	0.000		0.450	Continuing	Continuing	-
F-22 Capabilities (1)	C/CPFF	Raytheon : Waltham, MA	-	0.350	Mar 2016	0.400	Mar 2017	0.350	Mar 2018	0.000		0.350	Continuing	Continuing	-
AFSEO Mission and Planning Support	C/CPFF	Survice : Ft. Walton Beach, FL	-	12.264	Mar 2016	13.348	Mar 2017	13.246	Mar 2018	0.000		13.246	Continuing	Continuing	-
F-35 Capabilities	C/CPFF	Lockheed Martin : Marietta, GA	-	1.500	Apr 2016	3.200	Nov 2016	3.715	Nov 2017	0.000		3.715	Continuing	Continuing	-
Multiple fighter and weapon capability support	C/CPFF	Lockheed Martin : Marietta, GA	-	0.200	Nov 2015	0.200	Nov 2016	0.150	Nov 2017	0.000		0.150	Continuing	Continuing	-
F15 Test Support	C/CPFF	Boeing : St Louis, MO	-	0.010	Jan 2016	0.010	Jan 2017	0.010	Jan 2017	0.000		0.010	Continuing	Continuing	-
Enhance Existing and Develop Organic Electro EMI Capabilities	C/CPFF	Applied Research : Baltimore, MD	-	0.250	Mar 2016	0.250	Mar 2017	0.250	Mar 2018	0.000		0.250	Continuing	Continuing	-
Subtotal			-	15.024		18.008		18.171		0.000		18.171	-	-	-
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
96th Test Wing	RO	Eglin AFB : Eglin AFB, FL	-	5.200	Oct 2015	6.250	Oct 2016	6.300	Oct 2018	0.000		6.300	Continuing	Continuing	-
AEDC	PO	Arnold Engineering Dev Complex : Arnold AFB, TN	-	0.520	Jan 2016	0.530	Jan 2017	0.515	Jan 2018	0.000		0.515	Continuing	Continuing	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force												Date: May 2017			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207590F / Seek Eagle				Project (Number/Name) 674037 / SEEK EAGLE Certifications					
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
412th Test Wing	Various	Edwards AFB : Edward AFB, CA	-	0.367	Aug 2016	0.500	Aug 2017	0.400	Aug 2018	0.000		0.400	Continuing	Continuing	-
Various: Navy, other AF	Various	China Lake, Patuxent River, other : Multiple	-	0.020	Aug 2016	0.020	Aug 2017	0.011	Aug 2018	0.000		0.011	Continuing	Continuing	-
Subtotal			-	6.107		7.300		7.226		0.000		7.226	-	-	-
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Subtotal			-	-		-		-		-		-	-	-	-
			Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	21.131		25.308		25.397		0.000		25.397	-	-	-
Remarks															



**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> FY 2018 Air Force	<b>Date:</b> May 2017
-------------------------------------------------------------------	-----------------------

<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>
--------------------------------------------------	-----------------------------------------------------------------------------	---------------------------------------------------------------------------

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	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
Store compatabilty analysis on legacy fighter/bomber/RPA aircraft and weapons modifications																												
F-35 Capability Development: Initial Operational Capability																												
F-35 Capability Development: Full Operational Capability																												
F-22A Capability Development and Weapons Certification																												
Modeling and Simulation Capability: development and refresh of analysis tools																												
AFSEO Mission and Planning Support																												

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> FY 2018 Air Force			<b>Date:</b> May 2017
<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>	

**Schedule Details**

<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Store compatabilty analysis on legacy fighter/bomber/RPA aircraft and weapons modifications	1	2016	4	2022
F-35 Capability Development: Initial Operational Capability	1	2016	4	2017
F-35 Capability Development: Full Operational Capability	4	2017	4	2022
F-22A Capability Development and Weapons Certification	1	2016	4	2022
Modeling and Simulation Capability: development and refresh of analysis tools	1	2016	4	2022
AFSEO Mission and Planning Support	1	2016	4	2022

**Note**

Note: The SEEK EAGLE program does not execute in accordance with established acquisition program milestones. Rather, user requirements trigger the SEEK EAGLE process for requested aircraft-store configurations for flight clearances. AFSEO work is completed in accordance with the designated user priority established through the SEEK EAGLE Prioritization List process.