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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604288F / <i>National Airborne Ops Center (NAOC) Recap</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	7.168	12.669	76.417	0.000	76.417	136.477	137.749	140.727	143.317	Continuing	Continuing
646507: <i>NAOC Recap Development</i>	-	7.168	12.669	76.417	0.000	76.417	136.477	137.749	140.727	143.317	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY2018, PE 0302015F, E-4B National Airborne Operations Center (NAOC) Project 674777, E-4B Aircraft Modernization efforts were transferred to PE 0604288F, National Airborne Ops Center (NAOC) Recap, Project 646507, NAOC Recap Development, in order to provide greater transparency and consolidate efforts. FY18 funding for NAOC Recap development was \$6.14M.

A. Mission Description and Budget Item Justification

The E-4B National Airborne Operations Center (NAOC) is a survivable node of the National Military Command System (NMCS), providing POTUS, SECDEF and the CJCS a worldwide, survivable, and enduring node of the NMCS to fulfill national security requirements throughout all stages of conflict. As a command, control and communications center directing US forces, executing emergency war orders and coordinating the activities of civil authorities including national contingency plans, this capability ensures continuity of operations plans and continuity of government as required in a national emergency or after negation/destruction of ground command and control centers.

The E-4B NAOC Recapitalization effort will replace the aging E-4B fleet which faces capability gaps, diminishing manufacturing sources, increased maintenance costs, and parts obsolescence as it approaches the end of its serviceable life. The recapitalization effort will be informed by Air Force and Department of Defense analyses used to determine a holistic approach to replacing the aging E-4B fleet and integrating its capabilities with other nuclear and national command and control mission sets.

In 2015, the Joint Staff completed a Mission Area Analysis (MAA) focused on the Nuclear Command, Control and Communication (NC3) National Military Command system (NMCS) airborne fleets. This analysis examined alternative architectures and CONOPS for achieving requirements, and suggested potential programmatic, platform, and/or mission system synergies across and between fleet recapitalization programs (E-4B, E-6B, VC-25, C-32A). Further, the Joint Staff documented the essential functions necessary to execute Nuclear Command and Control, and defined the operational role of the NC2 enterprise out to 2030 in a NC2 CONOPS.

From 2014-2016, the Joint Staff performed an NC2 Capabilities Based Assessment (CBA) to determine potential gaps in the NC2 mission and architecture. The findings of these studies have culminated in an evolved NMCS "aerial layer mission alignment strategy" that may allow the Department of Defense (DoD) to consolidate the airborne command center capabilities provided by the E-4B and E-6B into an optimized fleet of appropriately configured aircraft. This concept is known as the Survivable Airborne Operations Center, or SAOC. To this end, beginning in FY2019, OSD CAPE initiated a joint service Analysis of Alternatives (AoA) to assess mission sets and platforms across E-4B (NAOC), C-32A (Executive Airlift), and the Navy's E-6B (ABNCP/TACAMO), known as the "NEAT" AoA.

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This program element may include necessary civilian pay expenses required to manage, execute, and deliver NAOC Recap weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

Furthermore, program funds include support funding for emerging requirements to support program office operations, management services (FFRDC, A&AS, etc.), PMS, security, prototyping, equipment and other as required to stand up a program office. Finally, it includes all activities required to award and execute design and prototyping contracts to either a single or multiple vendors; to include provisioning for follow on efforts, such as long lead materials for following activities and options.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	7.440	16.669	102.739	0.000	102.739
Current President's Budget	7.168	12.669	76.417	0.000	76.417
Total Adjustments	-0.272	-4.000	-26.322	0.000	-26.322
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-4.000			
• 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	-0.272	0.000			
• Other Adjustments	0.000	0.000	-26.322	0.000	-26.322

Change Summary Explanation

FY19 - \$0.272M Small Business Innovative Research (FY19)

FY20 - \$4.000M Congressionally Directed Reduction

FY21 - \$26.322M Internal Air Force Reduction

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Title: E-4B NAOC Recap	7.168	12.669	76.417
Description: Efforts will involve early acquisition activities, to include but not limited to, preparation for an acquisition entry decision, completion of the Analysis of Alternatives (AoA), development of initial requirements/acquisition strategy, risk reduction activities, and other efforts necessary to initiate an acquisition program.			
FY 2020 Plans:			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
<p>Complete AoA, continue Materiel Solution Analysis activities, and ensure program office is prepared to execute a follow on acquisition program. Support Air Force Global Strike Command (AFGSC) with generating a Capabilities Development Document (CDD) and develop a System Requirements Document (SRD). Complete required documents and activities necessary to issue a Request for Proposal (RFP) to begin recapitalization of the E-4B platform. Issue solicitation to industry for the award of up to two contracts as part of phase one of a two phased down-select acquisition strategy. Increase program office staffing sufficiently to execute two pre-EMD risk reduction contracts to be awarded in FY21.</p> <p><i>FY 2021 Plans:</i> Award competitive contracts to industry focused on pre-Engineering & Manufacturing Development (EMD) type activities that may include, but not limited to: government/industry collaboration on the generation of SRD level requirements for the complete weapons system; a prototype Mission Systems Laboratory; risk reduction studies/activities (for example: Layout of Passenger Accommodations (LOPA) analysis; avionics; in-flight Auxiliary Power Unit (APU) or power generation development; advanced communications systems; Electromagnetic Pulse (EMP) hardening on composite structures; Size, Weight, and Power Cooling (SWaP-C) analysis; co-site assessments; etc.); Preliminary Design Reviews (PDR) of each of the winning vendor's designs. FY21 will also continue the program office growth-path required to support the execution of a future Acquisition Category (ACAT) I-level effort.</p> <p><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> FY21 continues program office stand-up and further increases pre EMD planning efforts in the form of pre EMD studies and/or prototyping with industry, requirements preparation, as well as acquisition strategy and request for proposal development.</p>			
Accomplishments/Planned Programs Subtotals	7.168	12.669	76.417

D. Other Program Funding Summary (\$ in Millions)
N/A

Remarks

E. Acquisition Strategy
The E-4B Recapitalization program is currently completing the Materiel Solution Analysis phase and the Analysis of Alternatives. In parallel with these efforts, a formal acquisition strategy is being developed. Initial courses of action under consideration include a streamlined acquisition approach, maximizing the use of competition with a potential award of multiple contracts to industry.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force												Date: February 2020				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 4				PE 0604288F / National Airborne Ops Center (NAOC) Recap				646507 / NAOC Recap Development								
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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	
Product Development	C/CPAF	TBD : TBD	-	-		-		-		-		-	Continuing	Continuing	-	
Pre-EMD Studies and Activities	TBD	TBD : TBD	-	-		3.422	Jun 2020	57.134	Feb 2021	-		57.134	Continuing	Continuing	-	
Subtotal			-	-		3.422		57.134		-		57.134	Continuing	Continuing	N/A	
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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	
Support	C/CPAF	Various : Bedford, MA : TBD	-	1.408	Oct 2018	0.569	Feb 2020	0.231	Oct 2020	-		0.231	Continuing	Continuing	-	
Subtotal			-	1.408		0.569		0.231		-		0.231	Continuing	Continuing	N/A	
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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	
FFRDC	Various	Various : Bedford, MA : Hanscom AFB, MA	-	2.011	Oct 2018	5.580	Oct 2019	9.424	Oct 2020	-		9.424	Continuing	Continuing	-	
EPASS (A&AS)	Various	Various : Bedford, MA : Hanscom AFB, MA	-	2.706	Nov 2018	2.063	Nov 2019	8.702	Oct 2020	-		8.702	Continuing	Continuing	-	
PMA - Other	Various	Various : Bedford, MA : Hanscom AFB, MA	-	1.043	Oct 2018	1.035	Jul 2020	0.926	Oct 2020	-		0.926	Continuing	Continuing	-	
Subtotal			-	5.760		8.678		19.052		-		19.052	Continuing	Continuing	N/A	
Project Cost Totals			-	7.168		12.669		76.417		-		76.417	Continuing	Continuing	N/A	

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	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	

Remarks
 Costs associated with development planning, risk reduction and preliminary planning activities including systems engineering strategy and analysis; completion and reporting of the Analysis of Alternatives.

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604288F / <i>National Airborne Ops Center (NAOC) Recap</i>	Project (Number/Name) 646507 / <i>NAOC Recap Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>NAOC Recap Development</i>				
Analysis of Alternatives	1	2019	3	2020
Materiel Solution Analysis	1	2019	4	2020
Acquisition Strategy Development	3	2019	4	2020
Pre-EMD Studies, Activities & Prototyping	3	2020	2	2023
Milestone B	2	2023	2	2023
EMD	2	2023	4	2025