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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force										Date: February 2019		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604200F I Future Advanced Weapon Analysis & Programs							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	5.108	39.602	246.200	0.000	246.200	169.400	171.400	0.000	0.000	0.000	631.710
653133: Armament Subsystems	-	5.108	39.602	246.200	0.000	246.200	169.400	171.400	0.000	0.000	0.000	631.710
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Air Force Life Cycle Management Center, Air Dominance Division, will execute the Extended Range Weapon (ERWn) development program directly supporting the National Defense Strategy as a new start in FY19. ERWn is a Section 804, CSAF-directed prototype development of an advanced multi-role interceptor, designed to defeat missile defense threats. The development will include missile design, aircraft integration, ground/flight tests, prototypes, and provides opportunities for future fielding. The FY19 PB provided funding for risk reduction efforts and the FY20 PB fully funds the ERWn development program. The Air Force will collaborate with the Missile Defense Agency (MDA) to mutually develop engineering and test requirements.

The Air Force Life Cycle Management Center, Armament Systems Development Division plans and executes early Systems Engineering, portfolio acquisition planning, agile acquisition strategies, and risk reduction activities for future advanced weapon systems to defeat evolving threat scenarios and environments for major program milestone decisions and feasibility of future weapons concepts. Results enable highly informed decisions on agile acquisition initiatives to develop, refine, and integrate technologies into new weapons concepts to address warfighter, Air Staff, and OSD initiatives and strategies presented by the National Defense Strategy, Air Superiority 2030 Enterprise Capability Collaboration Team Flight Plan, Integrated Priority Lists, as examples. Conducts Section 804 rapid acquisition/prototyping efforts, pre-planning and execution of Joint Capability Technology Demonstrations (JCTD), and program management support and analysis to develop new capability systems, improve legacy systems, or determine feasibility of utilizing prototypes with advanced technology on fielded systems. Conducts Modeling, Simulation, and Analysis (MS&A). Examples of such efforts include but are not limited to: Stand-off Attack Weapon and Low Cost Decoy.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Future Advanced Weapon Analysis and Programs capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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B. Program Change Summary (\$ in Millions)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total		
Previous President's Budget		5.100	39.602	0.000	0.000	0.000		
Current President's Budget		5.108	39.602	246.200	0.000	246.200		
Total Adjustments		0.008	0.000	246.200	0.000	246.200		
• 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		0.185	0.000					
• SBIR/STTR Transfer		-0.177	0.000					
• Other Adjustments		0.000	0.000	246.200	0.000	246.200		
Change Summary Explanation FY20 increase to accomplish missile design, aircraft integration, ground and flight tests, and initiation of prototypes for ERWn Development Program.								
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Extended Range Weapon (ERWn)				0.000	39.602	246.200	0.000	246.200
Description: The ERWn development program is a Section 804, CSAF-directed prototype development of an advanced multi-role interceptor, designed to defeat missile defense threats. The development will include missile design, aircraft integration, ground/flight tests, prototypes, and provides opportunities for future fielding. The Air Force will collaborate with MDA to mutually develop engineering and test requirements.								
Includes A&AS, travel, supplies, software, civilian pay and program costs.								
FY 2019 Plans: Begin risk reduction efforts to identify and mitigate technical and/or performance constraints to include acquiring equipment and contracting with suppliers.								
FY 2020 Base Plans: Continue missile design/development, aircraft integration, and ground/flight tests required to initiate prototype builds.								
FY 2020 OCO Plans:								

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
n/a						
FY 2019 to FY 2020 Increase/Decrease Statement: Increase from FY19 to FY20 is due to FY20 full year of development and test.						
Title: Planning for Development Description: Planning for Development will plan and execute early Systems Engineering, portfolio acquisition planning, agile acquisition strategies, and risk reduction activities for future advanced weapon systems to defeat evolving threat scenarios and environments. Includes A&AS, travel, supplies, software, civilian pay and program costs. FY 2019 Plans: No FY19 funds for this activity. FY 2020 Base Plans: No FY20 budget for this activity. FY 2020 OCO Plans: N/A FY 2019 to FY 2020 Increase/Decrease Statement: N/A. No increase or decrease.		4.108	0.000	0.000	0.000	0.000
Title: Rapid Prototyping Description: Conduct rapid acquisition/prototyping efforts and Modeling, Simulation, and Analysis (MS&A) validated through integration of empirical data derived from prototypes and demonstrations. Includes A&AS, travel, supplies, software, civilian pay and program costs. FY 2019 Plans: No FY19 funds for this effort. FY 2020 Base Plans: No FY20 budget for this activity. FY 2020 OCO Plans:		1.000	0.000	0.000	0.000	0.000

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C. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020 Base
N/A					
FY 2019 to FY 2020 Increase/Decrease Statement: N/A. No increase or decrease.					
Accomplishments/Planned Programs Subtotals			5.108	39.602	246.200
D. Other Program Funding Summary (\$ in Millions) N/A					
Remarks					
E. Acquisition Strategy Extended Range Weapon: Acquisition strategy is to award an Undefined Contract Award (UCA) in the 3rd Qtr FY19 with a projected definitive contract award in the 1st Qtr FY20. Definitive contract will be sole source fixed price incentive fee (FPIF). Planning for development and rapid prototyping: Acquisition strategy is competitive prototyping; multiple vendors will be used to maximum extent possible.					
F. Performance Metrics 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.					

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force													Date: February 2019		
Appropriation/Budget Activity 3600 / 5						R-1 Program Element (Number/Name) PE 0604200F / Future Advanced Weapon Analysis & Programs				Project (Number/Name) 653133 / Armament Subsystems					
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
ERWn - Contractor Support	SS/FPIF	TBD : TBD	-	-		37.747	Apr 2019	232.043	Nov 2019	0.000		232.043	Continuing	Continuing	-
Subtotal			-	-		37.747		232.043		0.000		232.043	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
ERWn - Aircraft Integration and Systems Engineering	TBD	Various : Various	-	-		-		5.559	Oct 2019	0.000		5.559	Continuing	Continuing	-
Subtotal			-	-		-		5.559		0.000		5.559	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
ERWn - Government Test and Evaluation	TBD	Various : Various	-	-		-		3.060	Oct 2019	0.000		3.060	Continuing	Continuing	-
Subtotal			-	-		-		3.060		0.000		3.060	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
PfD - Program Mngmt Administration	Various	Various : Eglin AFB, FL	-	4.108	Jun 2018	-		-		-		-	Continuing	Continuing	-
Rapid Prototyping - Program Mgmt Administration	Various	Various : Eglin AFB, FL	-	1.000	Jun 2018	-		-		-		-	Continuing	Continuing	-
ERWn - Program Mgmt Administration	Various	Various : Eglin AFB, FL	-	-		1.855	Feb 2019	5.538	Oct 2019	0.000		5.538	Continuing	Continuing	-

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Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	5.108		1.855		5.538		0.000		5.538		Continuing	Continuing	N/A

Remarks Includes A&AS contract, IT requirements, TDY and office supplies.																
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	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	5.108		39.602		246.200		0.000		246.200	Continuing	Continuing	N/A

Remarks Contractor will bill monthly and will not require progress payments.																
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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force																Date: February 2019			
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	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
<i>Extended Range Weapon (ERWn)</i>																												
Risk Reduction																												
Design, Integrate, Flight, and Ground Test, Prototype Build																												
<i>Planning for Development</i>																												
Design, Engineering, Testing, Risk Reduction																												
<i>Rapid Prototyping</i>																												
Rapid acquisition/prototyping efforts																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force			Date: February 2019
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Extended Range Weapon (ERWn)</i>				
Risk Reduction	2	2019	1	2020
Design, Integrate, Flight, and Ground Test, Prototype Build	1	2020	4	2022
<i>Planning for Development</i>				
Design, Engineering, Testing, Risk Reduction	1	2018	4	2018
<i>Rapid Prototyping</i>				
Rapid acquisition/prototyping efforts	1	2018	4	2018