

UNCLASSIFIED

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 0604932F I Long Range Standoff Weapon							
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	128.767	437.521	664.920	712.539	0.000	712.539	475.297	359.301	396.032	433.000	975.320	4,582.697
657011: LONG RANGE STAND-OFF	128.767	437.521	664.920	712.539	0.000	712.539	475.297	359.301	396.032	433.000	975.320	4,582.697
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Program MDAP/MAIS Code: 489												
A. Mission Description and Budget Item Justification												
The Long Range Standoff (LRSO) Cruise Missile is a long range survivable standoff weapon capable of delivering lethal nuclear effect on strategic targets. LRSO will replace the currently fielded Air Launched Cruise Missile (ALCM) and will be integrated on both legacy and future bomber aircraft. The LRSO weapon system will be capable of penetrating and surviving advanced Integrated Air Defense Systems (IADS) from significant stand-off range to prosecute strategic targets in support of the Air Force's global attack capability and strategic deterrence core function.												
Funds may be used to address emerging or short-notice Diminishing Manufacturing and Material Shortage (DMSMS) issues.												
This program element may include necessary civilian pay expenses required to manage, execute, and deliver LRSO 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.												
This program is conducting activities associated with engineering and manufacturing development tasks aimed at meeting validated requirements during the technology maturation and risk reduction phase.												
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.												

UNCLASSIFIED

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 0604932F / Long Range Standoff Weapon				
B. Program Change Summary (\$ in Millions)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget		451.290	614.920	722.539	0.000	722.539
Current President's Budget		437.521	664.920	712.539	0.000	712.539
Total Adjustments		-13.769	50.000	-10.000	0.000	-10.000
• Congressional General Reductions		-0.178	0.000			
• Congressional Directed Reductions		0.000	0.000			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		0.000	50.000			
• Congressional Directed Transfers		0.000	0.000			
• Reprogrammings		0.000	0.000			
• SBIR/STTR Transfer		-15.691	0.000			
• Other Adjustments		2.100	0.000	-10.000	0.000	-10.000
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: 657011: LONG RANGE STAND-OFF						
Congressional Add: Conduct LRSO Weapon Development activities						
Congressional Add Subtotals for Project: 657011						
Congressional Add Totals for all Projects						
Change Summary Explanation						
FY18: -\$0.178M for FFRDC Reductions; -\$15.691M for SBIR; \$2.1M BTR from B61						
FY19: Congressional Add for \$50M						
FY20: -\$10.000 realigned for higher AF priorities						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2018	FY 2019	FY 2020
Title: LRSO Weapon Development				373.607	506.018	679.656
Description: Conduct LRSO Weapon Development activities						
FY 2019 Plans:						
Continue Prime TMRR contracts. LRSO will continue to design, develop, integrate and test the LRSO system. The Preliminary Design Review will be conducted to ensure the design adequately meets the warfighter's performance requirements in the draft Capabilities Development Document, System Requirements document, and TMRR contracts. Robust systems engineering						

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force		Date: February 2019		
Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>		R-1 Program Element (Number/Name) PE 0604932F / <i>Long Range Standoff Weapon</i>		
C. Accomplishments/Planned Programs (\$ in Millions) will ensure the USAF owns the technical baseline for requirements traceability as well as reliability, manufacturability, and maintainability. FY 2020 Plans: Continue Prime TMRR contracts. LRSO will continue to design, develop, integrate and test the LRSO system. The program will continue to evaluate designs to ensure they adequately meet the warfighter's performance requirements in preparation for the interim design review. Robust systems engineering will ensure the USAF owns the technical baseline for requirements traceability as well as reliability, manufacturability, and maintainability. FY 2019 to FY 2020 Increase/Decrease Statement: FY20 reflects an increase in funding as TMRR activities by both prime contractors are expected to peak in FY20.		FY 2018	FY 2019	FY 2020
Title: All-Up-Round Description: Conduct All-Up-Round activities to support weapon development FY 2019 Plans: Continue program practices that ensure the following are met: requirements flow down, requirement allocation to hardware and software, requirements compliance matrix, system performance, reliability, maintainability, product assurance, testability, producibility and supportability. Continue facility and security infrastructure upgrades to enable secure connectivity and communication between Department of Defense (DoD), Department of Energy (DOE), and industry. Continue efforts to conduct parallel development, design, and test activities with the DOE to ensure the LRSO adequately integrates the DOE designed warhead into the system. Continue to perform Aircraft Integration efforts including activities associated with integration on threshold aircraft and aircraft mission planning system upgrades to accommodate the new weapon. Furthermore, these efforts include activities related to weapon design compatibility with both threshold and objective aircraft. Other activities falling under these efforts include: developing mission planning upgrade needs, OFP development and integration to deliver the OFP test tapes, planning activities necessary to integrate LRSO with aircraft using MIL STD 1760D based aircraft/store interface, and ensuring the logical, electrical, and physical interfaces of the LRSO as defined in the ICD. FY 2020 Plans: Continue program practices that ensure the following are met: requirements flow down, requirement allocation to hardware and software, requirements compliance matrix, system performance, reliability, maintainability, product assurance, testability, producibility and supportability. Continue facility and security infrastructure upgrades to enable secure connectivity and communication between Department of Defense (DoD), Department of Energy (DOE), and industry. Continue efforts to conduct parallel development, design, and test activities with the DOE to ensure the LRSO adequately integrates the DOE designed warhead into the system. Conduct initial safety study as part of nuclear certification activities. Continue to perform Aircraft Integration efforts including activities associated with integration on threshold aircraft and aircraft mission planning system		23.136	47.581	16.226

UNCLASSIFIED

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 0604932F I Long Range Standoff Weapon		
C. Accomplishments/Planned Programs (\$ in Millions) upgrades to accommodate the new weapon. Furthermore, these efforts include activities related to weapon design compatibility with both threshold and objective aircraft. Other activities falling under these efforts include: developing mission planning upgrade needs, OFP development and integration to deliver the OFP test tapes, planning activities necessary to integrate LRSO with aircraft using MIL STD 1760D based aircraft/store interface, and ensuring the logical, electrical, and physical interfaces of the LRSO as defined in the ICD. FY 2019 to FY 2020 Increase/Decrease Statement: Increase in FY19 to ensure secure infrastructure developed and in place. FY20 funds ramp down with facility and security upgrades in place and adequate to support the program.		FY 2018	FY 2019	FY 2020
Title: Test Support Description: Conduct Test Support activities to support weapon development FY 2019 Plans: Continue to perform Test Support efforts, including test activities and support for design validation and verification and nuclear certification, as well as system qualification (includes design and operational certification activities). Conduct fit checks. Furthermore, these efforts will continue test planning and execution activities to support LRSO weapon development, All-Up-Round technical integration, and aircraft integration. FY 2020 Plans: Continue to perform Test Support efforts, including test activities and support for design validation and verification and nuclear certification, as well as system qualification (includes design and operational certification activities). Perform weapon system environment testing. Furthermore, these efforts will continue test planning and execution activities to support LRSO weapon development, All-Up-Round technical integration, and aircraft integration. FY 2019 to FY 2020 Increase/Decrease Statement: Increase in FY19 to ensure secure infrastructure developed and in place at test facilities. FY20 funds ramp down with facility and security upgrades in place and adequate to support weapon system testing.		40.778	61.321	16.657
Accomplishments/Planned Programs Subtotals		437.521	614.920	712.539
		FY 2018	FY 2019	
Congressional Add: Conduct LRSO Weapon Development activities		0.000	50.000	

UNCLASSIFIED

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 0604932F I Long Range Standoff Weapon							
							FY 2018	FY 2019			
FY 2018 Accomplishments: Conduct LRSO Weapon Development activities											
FY 2019 Plans: Continue Prime TMRR contracts. LRSO will continue to design, develop, integrate and test the LRSO system. The Preliminary Design Review will be conducted to ensure the design adequately meets the warfighter's performance requirements in the draft Capabilities Development Document, System Requirements document, and TMRR contracts. Robust systems engineering will ensure the USAF owns the technical baseline for requirements traceability as well as reliability, manufacturability, and maintainability.											
Congressional Adds Subtotals							0.000	50.000			
D. Other Program Funding Summary (\$ in Millions)											
Line Item	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 Cos
• MILCON PE 0604932: Long Range Standoff Weapon	38.000	-	0.000	-	0.000	0.000	9.628	-	-	Continuing	Continuing
Remarks											
E. Acquisition Strategy											
The acquisition strategy focuses on the development and integration of subsystem technologies with a robust reliability and manufacturing approach in a competitive environment. The program obtained a successful MS A decision in July 2016 and subsequently released a Request for Proposals. The program competitively selected two prime contractors in August 2017 to execute a 54-month Technology Maturation and Risk Reduction (TMRR) phase. The selected prime contractors will execute cost-plus-fixed-fee contracts during TMRR with activities focused on developing and maturing subsystem and system designs culminating in a final TMRR design review, delivery of Controlled Test Vehicles and conducting a vehicle configuration audit. A follow-on source selection for Engineering and Manufacturing Development (EMD) and Production phases will be conducted near the end of TMRR to select a single prime contractor to execute the EMD and Production phases of the program.											
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.											

UNCLASSIFIED

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 0604932F / Long Range Standoff Weapon				Project (Number/Name) 657011 / LONG RANGE STAND-OFF					
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
Long Range Standoff Weapon Development	C/CPFF	Various : TBD	41.976	352.143	Jan 2018	519.331	Jan 2019	652.021	Jan 2020	-		652.021	1,865.574	3,431.045	-
Subtotal			41.976	352.143		519.331		652.021		-		652.021	1,865.574	3,431.045	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
Materiel Solution Analysis Support	Various	Various : TBD	23.525	0.000		-		-		-		-	0.000	23.525	-
Aircraft Integration Planning	Various	Various : TBD	7.085	18.229	Jan 2018	33.632	Jan 2019	4.226	Jan 2020	-		4.226	265.613	328.785	-
All-Up-Round Activities	Various	Various : TBD	6.617	4.907	Feb 2018	13.949	Feb 2019	12.000	Feb 2020	-		12.000	21.503	58.976	-
Subtotal			37.227	23.136		47.581		16.226		-		16.226	287.116	411.286	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
Test Support	Various	Various : TBD	16.598	40.778	Jan 2018	61.321	Jan 2019	16.657	Jan 2020	-		16.657	185.110	320.464	-
Subtotal			16.598	40.778		61.321		16.657		-		16.657	185.110	320.464	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
Program Management Administration	Various	Various : TBD	32.966	21.464	Oct 2017	36.687	Oct 2018	27.635	Oct 2019	-		27.635	301.150	419.902	-
Subtotal			32.966	21.464		36.687		27.635		-		27.635	301.150	419.902	N/A

UNCLASSIFIED

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 0604932F / Long Range Standoff Weapon				Project (Number/Name) 657011 / LONG RANGE STAND-OFF				

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
Remarks FY19 PMA increase as this is a Direct Site for Civilian Pay.															
			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			128.767	437.521		664.920		712.539		-		712.539	2,638.950	4,582.697	N/A
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force																Date: February 2019			
Appropriation/Budget Activity 3600 / 5								R-1 Program Element (Number/Name) PE 0604932F / <i>Long Range Standoff Weapon</i>								Project (Number/Name) 657011 / <i>LONG RANGE STAND-OFF</i>			

	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>Long Range StandOff Weapon</i>																												
Technology Maturation and Risk Reduction Phase																												
Milestone B Decision																												
Engineering and Manufacturing Development Phase																												
Engineering and Manufacturing Development Contract Award																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force			Date: February 2019
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604932F / <i>Long Range Standoff Weapon</i>	Project (Number/Name) 657011 / <i>LONG RANGE STAND-OFF</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Long Range StandOff Weapon</i>				
Technology Maturation and Risk Reduction Phase	1	2018	2	2022
Milestone B Decision	2	2022	2	2022
Engineering and Manufacturing Development Phase	2	2022	4	2024
Engineering and Manufacturing Development Contract Award	2	2022	2	2022