

UNCLASSIFIED

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 / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604932F / <i>Long Range Standoff Weapon</i>
---	---

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	566.288	646.800	712.539	474.430	0.000	474.430	358.756	395.311	410.198	359.117	616.200	4,539.639
657011: <i>LONG RANGE STAND-OFF</i>	566.288	646.800	712.539	474.430	0.000	474.430	358.756	395.311	410.198	359.117	616.200	4,539.639
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Program MDAP/MAIS Code: 489

A. Mission Description and Budget Item Justification

The Long Range Stand Off (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 Long Range Stand-Off (LRSO) weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F or 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 (TMRR) phase.

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 2021 Air Force	Date: February 2020
--	----------------------------

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force</i> / BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604932F / <i>Long Range Standoff Weapon</i>
--	---

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	664.920	712.539	475.297	0.000	475.297
Current President's Budget	646.800	712.539	474.430	0.000	474.430
Total Adjustments	-18.120	0.000	-0.867	0.000	-0.867
• 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	5.000	0.000			
• SBIR/STTR Transfer	-23.120	0.000			
• Other Adjustments	0.000	0.000	-0.867	0.000	-0.867

Change Summary Explanation

FY19 reduced \$23.120M for Small Business Innovative Research (SBIR) and an addition of \$5M for an internal reprogramming.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Title: Long Range Stand Off (LRSO) Weapon Development	577.849	612.147	388.851
Description: Conduct LRSO Weapon Development activities			
FY 2020 Plans: Continue Prime Technology Maturation and Risk Reduction (TMRR) contracts 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 2021 Plans: Continue Prime TMRR contracts 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. Program will begin Engineering and Manufacturing Design (EMD) source selection and Milestone B activities.			
FY 2020 to FY 2021 Increase/Decrease Statement: FY21 reflects a decrease in funding as both contractors finalize TMRR designs.			
Title: All-Up-Round	39.964	42.114	59.771

UNCLASSIFIED

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 / 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)		FY 2019	FY 2020	FY 2021
<p>Description: Conduct All-Up-Round activities to support weapon development</p> <p>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. 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 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, Operational Flight Program (OFP) development and integration to deliver the OFP test tapes, planning activities necessary to integrate LRSO with aircraft and ensuring the logical, electrical, and physical interfaces of the LRSO as defined in the Initial Capabilities Document (ICD).</p> <p>FY 2021 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 safety studies and other nuclear certification activities. 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 and qualification, and other nuclear certification 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, and ensuring the logical, electrical, and physical interfaces of the LRSO as defined in the ICD.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: FY21 reflects an increase in funding as aircraft integration, warhead integration and mission planning activities ramp-up.</p>				
Title: Test Support		28.987	58.278	25.808

UNCLASSIFIED

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 / 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)	FY 2019	FY 2020	FY 2021
<p>Description: Conduct Test Support activities to support weapon development</p> <p>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; along with facility and security upgrades to ensure secure infrastructure is in place.</p> <p>FY 2021 Plans: Continue to perform design validation, verification, test, nuclear certification (to include design and operational certification) and system qualification 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.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: FY21 reflects a decrease in funding as facility and security upgrades are scheduled to be in place and adequate to support weapon system testing.</p>			
Accomplishments/Planned Programs Subtotals	646.800	712.539	474.430

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2019	FY 2020	FY 2021 <u>Base</u>	FY 2021 <u>OCO</u>	FY 2021 <u>Total</u>	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• MILCON PE 0604932: <i>Long Range Standoff Weapon</i>	-	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 (CPFF) 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.

UNCLASSIFIED

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 / 5				PE 0604932F / Long Range Standoff Weapon				657011 / LONG RANGE STAND-OFF								
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	
Long Range Standoff Weapon Development	C/CPPF	Various : TBD	395.232	545.795	Dec 2018	569.108	Dec 2019	340.566	Dec 2020	-		340.566	1,582.003	3,432.704	-	
Subtotal			395.232	545.795		569.108		340.566		-		340.566	1,582.003	3,432.704	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	
Material Solution Analysis Support	Various	Various : TBD	23.525	-		-		-		-		-	0.000	23.525	-	
Aircraft Integration Planning	Various	Various : TBD	25.914	28.588	Jan 2019	27.797	Jan 2020	47.960	Jan 2021	-		47.960	239.353	369.612	-	
All-Up-Round Activities	Various	Various : TBD	8.661	11.376	Feb 2019	14.317	Feb 2020	11.811	Jan 2021	-		11.811	21.600	67.765	-	
Subtotal			58.100	39.964		42.114		59.771		-		59.771	260.953	460.902	N/A	
Test and Evaluation (\$ 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	
Test Support	Various	Various : TBD	57.836	28.987	Jan 2019	58.278	Jan 2020	25.808	Jan 2021	-		25.808	150.885	321.794	-	
Subtotal			57.836	28.987		58.278		25.808		-		25.808	150.885	321.794	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	
Program Management Administration	Various	Various : TBD	55.120	32.054	Oct 2018	43.039	Oct 2019	48.285	Oct 2020	-		48.285	145.741	324.239	-	
Subtotal			55.120	32.054		43.039		48.285		-		48.285	145.741	324.239	N/A	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
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	2019	2	2022
Milestone B Decision	2	2022	2	2022
Engineering and Manufacturing Development Phase	2	2022	4	2025