Exhibit P-40, Budget Line Item Justification: PB 2021 Air Force	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV	**P-1 Line Item Number / Title:** M30FLH / ICBM FUZE MOD
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** 0604933F — **Other Related Program Elements:** 0604933F
Line Item MDAP/MAIS Code: 498	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	41.778	9.841	5.000	3.458	-	3.458	82.752	109.286	146.327	144.290	359.410	902.142
Less PY Advance Procurement *($ in Millions)*	-	0.000	0.000	0.000	-	0.000	4.100	14.497	43.450	23.000	38.088	123.135
Net Procurement (P-1) *($ in Millions)*	41.778	9.841	5.000	3.458	-	3.458	78.652	94.789	102.877	121.290	321.322	779.007
Plus CY Advance Procurement *($ in Millions)*	-	4.100	14.497	43.450	-	43.450	23.000	19.994	18.094	0.000	-	123.135
Total Obligation Authority *($ in Millions)*	**41.778**	**13.941**	**19.497**	**46.908**	**-**	**46.908**	**101.652**	**114.783**	**120.971**	**121.290**	**321.322**	**902.142**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	8.600	8.600
Flyaway Unit Cost *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Prior year funding includes $18.4M which was executed in PE 0101213F, M30MLG, MM III Modifications.

The ICBM Fuze Modernization program will replace the current Mk21/W87-0 fuze to meet warfighter requirements to support both Minuteman III (MM III) and Ground Based Strategic Deterrent (GBSD). The new fuze will be a form, fit, and functionally equivalent replacement for the legacy Mk21/W87-0 and will provide a 20-year threshold, 30-year objective design life. The program will support the current force of 400 deployed and 50 non-deployed ICBMs.

The program will provide needed MM III weapon system modifications, system testing, support/test equipment, data and training required to accommodate, field, and support the new Mk21 fuze along with the W87-0 warhead as defined in the Air Force Global Strike Command (AFGSC) Requirements Traceability Memo dated 2 December 2013. In addition, the Joint Requirements Oversight Council (JROC) signed the program's JROC Memorandum validating the operational requirement for the program on 6 December 2016. Currently available Mk21/W87-0 fuze quantities do not meet United States Strategic Command (USSTRATCOM) requirements and the legacy fuze is three times beyond its original ten year design life. A replacement Mk21/W87-0 fuze is urgently required to meet warfighter requirements and to ensure operational capability. ICBM Fuze Modernization will procure 693 Mk21/W87-0 operationally-configured replacement fuzes. Fuzes will be delivered and placed in supply for installation by organizational/ intermediate maintenance on a schedule to be determined by USSTRATCOM and AFGSC.

Life of Type Buy (LOTB)
FY19 concluded material and component LOTB supporting both the Mk21/W87-0 and future Mk21A/W87-1 needs.

Long Lead Production
The ICBM Fuze Modernization program continues to require Advanced Procurement authority in FY21 to procure long lead items (Model XI sensor hardware, optoisolators, circuit cards, heterojunction bipolar transistors (HBTs), Commercial Off-the-Shelf/Government Off-the-Shelf (COTS/GOTS) materials and components, etc.). Advanced procurement needs increased due to an increased number of materials and piece parts with long lead procurement times. Failure to procure the parts will result in delayed fuze production and fielding activities. The production lead time of 41 months is an increase from 31 months previously. The increase is due to delays in the Joint Navy (W88) and Air Force (B61-12) programs. The delay in these programs lengthens the production flow time at KCNSC. As programs near the end of their production and capacity increases, the Mk21 fuze program's lead times will decrease back to 31 months.

Exhibit P-40, Budget Line Item Justification: PB 2021 Air Force	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 3020F: Missile Procurement, Air Force / BA 03: Modification of Inservice Missiles / BSA 1: Class IV	**P-1 Line Item Number / Title:** M30FLH / ICBM FUZE MOD
ID Code (A=Service Ready, B=Not Service Ready): B	**Program Elements for Code B Items:** 0604933F / **Other Related Program Elements:** 0604933F
Line Item MDAP/MAIS Code: 498	

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-3a	5915 / ICBM Fuze Modernization (Service Life Extension)		B		- / 41.778	- / 9.841	- / 5.000	- / 3.458	- / 0.000	- / 3.458
P-40	**Total Gross/Weapon System Cost**				**- / 41.778**	**- / 9.841**	**- / 5.000**	**- / 3.458**	**- / -**	**- / 3.458**

Exhibits Schedule					FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-3a	5915 / ICBM Fuze Modernization (Service Life Extension)		B		- / 82.752	- / 109.286	- / 146.327	- / 144.290	- / 359.410	- / 902.142
P-40	**Total Gross/Weapon System Cost**				**- / 82.752**	**- / 109.286**	**- / 146.327**	**- / 144.290**	**- / 359.410**	**- / 902.142**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
Where applicable, justification for individual modification is provided in the P-3A exhibits.

Exhibit P-3a, Individual Modification: PB 2021 Air Force		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	**P-1 Line Item Number / Title:** M30FLH / ICBM FUZE MOD	**Modification Number / Title:** 5915 / ICBM Fuze Modernization
ID Code (A=Service Ready, B=Not Service Ready) : B		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	41.778	9.841	5.000	3.458	0.000	3.458	82.752	109.286	146.327	144.290	359.410	902.142
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	4.100	14.497	43.450	23.000	38.088	123.135
Net Procurement (P-1) *($ in Millions)*	41.778	9.841	5.000	3.458	0.000	3.458	78.652	94.789	102.877	121.290	321.322	779.007
Plus CY Advance Procurement *($ in Millions)*	-	4.100	14.497	43.450	-	43.450	23.000	19.994	18.094	-	-	123.135
Total Obligation Authority *($ in Millions)*	**41.778**	**13.941**	**19.497**	**46.908**	**0.000**	**46.908**	**101.652**	**114.783**	**120.971**	**121.290**	**321.322**	**902.142**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	8.600	8.600
Gross/Weapon System Unit Cost *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Program Overview

The ICBM Fuze Modernization program will replace the current Mk21/W87-0 fuze to meet warfighter requirements to support both MM III and GBSD. The new fuze will be a form, fit, and functionally equivalent replacement for the legacy Mk21/W87-0 fuze and will provide a 20-year threshold, 30-year objective design life. The program will support the current force of 400 deployed and 50 non-deployed ICBMs. The program will provide needed MM III weapon system modifications, system testing, support/test equipment, data and training required to accommodate, field, and support the new Mk21 fuze along with the W87-0 warhead as defined in the AFGSC Requirements Traceability Memo dated 2 December 2013. In addition, the JROC signed the program's JROC Memorandum validating the operational requirement for the program on 6 December 2016. Currently available Mk21/W87-0 fuze quantities do not meet United States Strategic Command (USSTRATCOM) requirements and the legacy fuze is three times beyond its original ten year design life. A replacement Mk21/W87-0 fuze is urgently required to meet warfighter requirements and to ensure operational capability. ICBM Fuze Modernization will procure 693 Mk21/W87-0 replacement fuzes. Fuzes will be delivered and placed in supply for installation by organizational/intermediate maintenance on a schedule to be determined by USSTRATCOM and AFGSC.

Program Rebaseline

The ICBM Fuze Modernization Program requires a rebaseline due to funding reduction and capacitor redesign issue. The program rebaseline has shifted funding needs into different fiscal years and an immediate adjustment is needed for FY21. Rebaseline highlighted the need to order magnet housing, bellows, wound coils, and coil supports earlier than previously planned in order to meet Mod XI production requirement. These components' production cannot meet the same production rate of the fuze assembly, requiring earlier funding, using Advance Procurement (AP). Rebaseline moved major milestones out up to 22 months (Final Design Review, MS C, FPU, and Production Quantities). The schedule slip has delayed the need for Full Funding, but has increased the need for AP. Changes to the production profile to the rebaseline in FY22 and beyond will be reflected in future budget submissions. The USAF's Mk21A Re-entry Vehicle and Ground Based Strategic Deterrent (GBSD) programs rely on fuze production units for test and operational use. Increase in AP is necessary to keep fuze production aligned with Mk21A Re-entry Vehicle and GBSD schedules.

Long Lead Procurement Adjustments

Advance Procurement needs have increased on the program over earlier budget estimates. The increase is due to the long lead times of parts of magnet housing, bellows, wound coils, and coil supports; and delays in the Joint Navy (W88) and Air Force (B61-12) programs. Increases in the quantity of items with long lead times (Model XI sensor hardware, optoisolators, circuit cards, HBTs, COTS/GOTS materials and components, etc) requires purchases of parts sooner than anticipated. Failure to procure the parts will result in program schedule slip and potentially delay in fielding fuzes. The production lead time of 41 months is an increase from 31 months previously. The delay in these programs lengthens the production flow time at KCNSC. AP funds are used to execute jointly with the W88 and the B61-12 per Joint Operating Agreement between programs and NNSA; this strategy takes advantage of EOQ orders and provides a pool of interchangeable, qualified, and certified parts for these programs.

FY15-19 non-recurring costs include LOTB critical to affordably buy qualified COTS parts for use during and after exposure to nuclear environments and to ensure commonality between the Air Force and the Navy. LOTB was executed jointly with the Navy to provide a pool of interchangeable, qualified, and certified parts for each service's fuze. Procured parts will be delivered to the National Nuclear Security Administration (NNSA), Kansas City National Security Campus (KCNSC) for use in producing common component modules for the Air Force and Navy fuzes. Some component modules will be entirely

Exhibit P-3a, Individual Modification: PB 2021 Air Force		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	**P-1 Line Item Number / Title:** M30FLH / ICBM FUZE MOD	**Modification Number / Title:** 5915 / ICBM Fuze Modernization
ID Code (A=Service Ready, B=Not Service Ready) : B		**MDAP/MAIS Code:**

interchangeable between the Services while others will have interchangeable sub-assemblies. Pre-production planning activities began in FY18. There will be three Production Readiness Reviews (PRR) and two Product Definition and Documentation Reviews (PDDR). The purpose of the PRR is to evaluate the manufacturing system readiness. The purpose of the PDDR is to ensure the requirements necessary for production are in place and mapped from design to production.

Milestone/Development Status

The program entered Phase 6.3 Developmental Engineering in FY13 and completed in FY19. The first flight test was performed in FY19 and the second flight test will be executed in FY20. Phase 6.4 Production Engineering will complete development in FY24. The program will enter Phase 6.5 First Production in FY24. Research, Development, Test and Evaluation (RDT&E) is contained in Program Element 0604933F. The program is tailored to use the joint Department of Defense (DoD)-Department of Energy (DOE) Phase 6.X processes for routine nuclear stockpile activities to align with Navy and NNSA operations.

Exhibit P-3a, Individual Modification: PB 2021 Air Force		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	**P-1 Line Item Number / Title:** M30FLH / ICBM FUZE MOD	**Modification Number / Title:** 5915 / ICBM Fuze Modernization
ID Code (A=Service Ready, B=Not Service Ready) : B	**MDAP/MAIS Code:**	
Models of Systems Affected: LGM-30G	**Modification Type:** Service Life Extension	**Related RDT&E PEs:** 0604933F

Financial Plan	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*	Qty *(Each)* / Total Cost *($ M)*
RDT&E PE #												
0604933F	- / 524.438	- / 124.457	- / 161.199	- / 167.099	- / -	- / 167.099	- / 104.657	- / 20.503	- / 2.067	- / 2.105	- / 0.000	- / 1,106.525
Procurement												
Modification Item 1 of 1: ICBM Fuze												
B Kits												
Recurring												
ICBM Fuze:EQUIPMENT Group B (Active)	- / -	- / 0.000	- / 5.000	- / 3.458	- / -	- / 3.458	80 / 76.512	106 / 92.350	118 / 112.560	121 / 133.486	268 / 281.374	693 / 704.740
Subtotal: Recurring	*- / -*	*- / 0.000*	*- / 5.000*	*- / 3.458*	*- / -*	*- / 3.458*	*- / 76.512*	*- / 92.350*	*- / 112.560*	*- / 133.486*	*- / 281.374*	*- / 704.740*
Subtotal: ICBM Fuze	*- / -*	*- / 0.000*	*- / 5.000*	*- / 3.458*	*- / -*	*- / 3.458*	*- / 76.512*	*- / 92.350*	*- / 112.560*	*- / 133.486*	*- / 281.374*	*- / 704.740*
Subtotal: Procurement, All Modification Items	*- / -*	*- / 0.000*	*- / 5.000*	*- / 3.458*	*- / -*	*- / 3.458*	*- / 76.512*	*- / 92.350*	*- / 112.560*	*- / 133.486*	*- / 281.374*	*- / 704.740*
Support *(All Modification Items)*												
GROUP B: TOTAL NONRECURRING	- / 41.778	- / 9.841	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 51.619
Change Orders	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.864	- / 2.426	- / 4.139	- / 3.687	- / 12.253	- / 24.369
SIM/TRAINER	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 9.546	25 / 21.470	- / -	- / -	40 / 31.016
OTHER GOVT	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.131	- / 3.096	- / 4.183	- / 3.951	- / 47.736	- / 62.097
PMA - Other Gov't Costs	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.245	- / 1.868	- / 3.975	- / 3.166	- / 18.047	- / 28.301
Subtotal: Support	*- / 41.778*	*- / 9.841*	*- / -*	*- / -*	*- / -*	*- / -*	*- / 6.240*	*15 / 16.936*	*25 / 33.767*	*- / 10.804*	*- / 78.036*	*40 / 197.402*
Installation												
Subtotal: Installation	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*	*- / -*
Total												
Total Cost (Procurement + Support + Installation)	**41.778**	**9.841**	**5.000**	**3.458**	**0.000**	**3.458**	**82.752**	**109.286**	**146.327**	**144.290**	**359.410**	**902.142**

Exhibit P-3a, Individual Modification: PB 2021 Air Force		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 3020F / 03 / 1	**P-1 Line Item Number / Title:** M30FLH / ICBM FUZE MOD	**Modification Number / Title:** 5915 / ICBM Fuze Modernization
ID Code (A=Service Ready, B=Not Service Ready) : B		**MDAP/MAIS Code:**

Modification Item 1 of 1: ICBM Fuze

Manufacturer Information

Manufacturer Name: Kansas City National Security Campus	Manufacturer Location: Kansas City, KS
Administrative Leadtime *(in Months)*: 4	Production Leadtime *(in Months)*: 41

Dates	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Contract Dates				Feb 2022	Feb 2023	Feb 2024	Feb 2025
Delivery Dates				Jul 2025	Jul 2026	Jul 2027	Jul 2028

Installation Information

Method of Implementation (Organic): Org/Intermediate	**Installation Quantity:** 693