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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition	P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604814A
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Line Item MDAP/MAIS Code: 366

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	7,340	2,209	746	1,189	973	2,162	693	707	701	370	-	14,928
Gross/Weapon System Cost (<i>\$ in Millions</i>)	756.013	171.565	72.234	100.906	72.985	173.891	74.440	75.236	76.274	49.661	-	1,449.314
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	756.013	171.565	72.234	100.906	72.985	173.891	74.440	75.236	76.274	49.661	-	1,449.314
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	756.013	171.565	72.234	100.906	72.985	173.891	74.440	75.236	76.274	49.661	-	1,449.314

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	102,999.05	77,666.36	96,828.42	84,866.27	75,010.28	80,430.62	107,417.03	106,415.84	108,807.42	134,218.92	-	97,086.95

Description:

This budget line item includes the Excalibur family of munitions for the use in the M777A2 Lightweight 155mm Howitzer (LW155), the M109A6 Paladin Howitzer, the M109A7 Paladin PIM Howitzer and the Swedish Archer Howitzer.

(E80100) Excalibur is a Precision Guided Extended Range 155mm Artillery projectile providing Brigade Combat Teams an organic precision fires capability. Additionally it provides improved fire support capability due to its increased range of 40.5 kilometers and demonstrated accuracy of less than 3 meters radial miss distances, which enables a first round effect on target reducing the number of rounds required while reducing collateral damage. Excalibur is compatible with the M777A2 Lightweight 155mm Howitzer (LW155), the M109A6 Paladin Howitzer, the M109A7 Paladin PIM Howitzer, and the Swedish Archer Howitzer. Excalibur provides a 35% range increase over current Rocket Assisted Projectiles with a less than 10 meter circular error probable requirement at all ranges. Excalibur is resistant to Global Positioning System (GPS) jamming.

Excalibur is currently fielded and in use by units throughout Afghanistan and deployed globally to support other Military Contingency Operations. Excalibur is an International Cooperative Development program, teamed with the Kingdom of Sweden (KoS), which contributed resources towards the development in accordance with an established Project Agreement. Excalibur Increment Ia-1 was initially fielded to units in Iraq and Afghanistan in response to an urgent need request in support of Operation Iraqi Freedom (as of September 2010 re-named to Operation New Dawn) and Operation Enduring Freedom. Increment Ia-2 was fielded in early FY 2012 and greatly increases range from 25.2 kilometers to 40.5 kilometers. Excalibur Increment Ib provides further performance improvements while significantly lowering unit costs. Increment 1b completed a successful Initial Operational Test and Evaluation in February 2014 as well as a Full Rate Production Decision Review in June 2014. The Excalibur Increment 1b projectile was Type Classified and Full Material Released in June 2014.

This item is Code A, approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A: Procurement of Ammunition, Army / BA 01: Ammunition / BSA 37: Artillery Ammunition **P-1 Line Item Number / Title:** 6600E80100 / Proj 155mm Extended Range M982

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604814A

Line Item MDAP/MAIS Code: 366

Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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-5	E80103 / PROJ, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]	P-5a, P-21	A		7,340 / 756.013	2,209 / 171.565	746 / 72.234	1,189 / 100.906	973 / 72.985	2,162 / 173.891
P-40	Total Gross/Weapon System Cost				7,340 / 756.013	2,209 / 171.565	746 / 72.234	1,189 / 100.906	973 / 72.985	2,162 / 173.891

*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:
 In accordance with Section 1815 of the FY2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

This is a war reserve item currently being used in combat. The FY 2019 request builds a war reserve inventory in accordance with the Army procurement goals. FY 2019 Base procurement dollars in the amount of \$100.906 million supports the procurement of 1189 Increment 1b projectiles. FY 2019 OCO includes \$51.700 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative. The procurement includes 689 Increment 1b projectiles. FY 2019 \$21.285 million OCO supports the procurement of critical Army munitions consumed in support of Operation Inherent Resolve for ISIL. The procurement includes 284 Increment 1b projectiles. FY 2019 total OCO dollars in the amount of \$72.985 million supports the procurement of 973 critical Army munitions consumed in support of deployed units' ongoing military operations.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982	Item Number / Title [DODIC]: E80103 / PROJ, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	7,340	2,209	746	1,189	973	2,162
Gross/Weapon System Cost (\$ in Millions)	756.013	171.565	72.234	100.906	72.985	173.891
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	756.013	171.565	72.234	100.906	72.985	173.891
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	756.013	171.565	72.234	100.906	72.985	173.891

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	102,999.05	77,666.36	96,828.42	84,866.27	75,010.28	80,430.62

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
COMPLETE ROUND ^(†)	98,660.67	7,340	724.169	68,448.00	2,209	151.202	84,212.00	746	62.822	71,975.00	1,189	85.578	71,975.00	973	70.032	71,975.00	2,162	155.610
CONTAINER, EXCALIBUR ^(†)	2,083.90	7,340	15.296	2,183.00	2,209	4.822	2,359.00	746	1.760	2,644.00	1,189	3.144	2,644.00	973	2.573	2,644.00	2,162	5.716
<i>Subtotal: Recurring Cost</i>	-	-	739.465	-	-	156.024	-	-	64.582	-	-	88.722	-	-	72.604	-	-	161.326
<i>Subtotal: Hardware Cost</i>	-	-	739.465	-	-	156.024	-	-	64.582	-	-	88.722	-	-	72.604	-	-	161.326
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.781	-	-	1.100	-	-	0.706	-	-	0.600	-	-	0.381	-	-	0.981
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.781	-	-	1.100	-	-	0.706	-	-	0.600	-	-	0.381	-	-	0.981
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	6.103	-	-	3.000	-	-	-	-	-	3.785	-	-	-	-	-	3.785
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	6.103	-	-	3.000	-	-	-	-	-	3.785	-	-	-	-	-	3.785
Support - Hardware Analysis Cost																		
Hardware Analysis	-	-	2.850	-	-	2.500	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Hardware Analysis Cost</i>	-	-	2.850	-	-	2.500	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37	P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982	Item Number / Title [DODIC]: E80103 / PROJ, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Support - Product Improvement Cost																		
Reliability	-	-	-	-	-	1.325	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	1.325	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	5.887	-	-	6.766	-	-	6.446	-	-	6.949	-	-	-	-	-	6.949
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	5.887	-	-	6.766	-	-	6.446	-	-	6.949	-	-	-	-	-	6.949
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.926	-	-	0.850	-	-	0.500	-	-	0.850	-	-	-	-	-	0.850
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.926	-	-	0.850	-	-	0.500	-	-	0.850	-	-	-	-	-	0.850
Gross/Weapon System Cost	102,999.05	7,340	756.013	77,666.36	2,209	171.565	96,828.42	746	72.234	84,866.27	1,189	100.906	75,010.28	973	72.985	80,430.62	2,162	173.891

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37			P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982				Item Number / Title [DODIC]: E80103 / PROJ, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2017	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	C / FFP	PICATINNY ARSENAL, NJ	Jan 2017	Oct 2017	2,209	68,448.00	Y		
COMPLETE ROUND ^(†)		2018	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	SS / FFP	PICATINNY ARSENAL, NJ	Jun 2018	Apr 2019	746	84,212.00	Y		
COMPLETE ROUND ^(†)		2019	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	SS / FFP	PICATINNY ARSENAL, NJ	Jan 2019	Nov 2019	2,162	71,975.00	Y		
CONTAINER, EXCALIBUR		2017	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	C / FFP	PICATINNY ARSENAL, NJ	Jan 2017	Oct 2017	2,209	2,183.00	Y		
CONTAINER, EXCALIBUR		2018	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	SS / FFP	PICATINNY ARSENAL, NJ	Jun 2018	Apr 2019	746	2,359.00	Y		
CONTAINER, EXCALIBUR		2019	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	SS / FFP	PICATINNY ARSENAL, NJ	Jan 2019	Nov 2019	2,162	2,644.00	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982										Item Number / Title [DODIC]: E80103 / PROJ, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2017															Fiscal Year 2018															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 6	BAL D U E A S O F 1 O C T	Calendar Year 2017															Calendar Year 2018															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
COMPLETE ROUND																																					
Prior Years Deliveries: 7340																																					
	1	2017	ARMY	2,209	0	2,209			A	-	-	-	-	-	-	-	-	-	-	185	184	184	184	184	184	184	184	184	184	184	184	184	184	184	0		
	1	2018	ARMY	746	0	746																													746		
	1	2019	ARMY	2,162	0	2,162																													2,162		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37										P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982										Item Number / Title [DODIC]: E80103 / PROJ, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2019														Fiscal Year 2020														B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 8	BAL D U E A S O F 1 O C T	Calendar Year 2019														Calendar Year 2020														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
Prior Years Deliveries: 7340																																			
1	2017	ARMY		2,209	2,209	0																								0					
1	2018	ARMY		746	0	746	-	-	-	-	-	-	70	100	100	100	100	100	100	76											0				
1	2019	ARMY		2,162	0	2,162				A	-	-	-	-	-	-	-	-	109	187	187	187	187	187	187	187	187	187	187	183					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 37		P-1 Line Item Number / Title: 6600E80100 / Proj 155mm Extended Range M982
		Item Number / Title [DODIC]: E80103 / PROJ, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	RAYTHEON MISSILE SYSTEMS CO - TUCSON, AZ	40	187	250	3	18	10	28	3	4	10	14

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).