

**UNCLASSIFIED**

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

**Appropriation / Budget Activity / Budget Sub Activity:**  
 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA  
 10: Ground Support Avionics

**P-1 Line Item Number / Title:**  
 5399AZ3537 / Common Infrared Countermeasures (CIRCM)

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

**Line Item MDAP/MAIS Code:** N/A

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> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	-	108.721	49.777	36.839	24.060	60.899	112.473	118.623	147.972	166.900	-	765.365
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	-	108.721	49.777	36.839	24.060	60.899	112.473	118.623	147.972	166.900	-	765.365
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	-	<b>108.721</b>	<b>49.777</b>	<b>36.839</b>	<b>24.060</b>	<b>60.899</b>	<b>112.473</b>	<b>118.623</b>	<b>147.972</b>	<b>166.900</b>	-	<b>765.365</b>
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	1,411.961	1,659.233	1,534.958	1,503.750	1,522.475	2,343.188	2,471.313	3,082.750	2,781.667	-	2,180.527

**Description:**

Army Procurement Objective (APO) = 1,076 (B-Kits only)  
 The Common Infrared Countermeasure (CIRCM) budget line includes 1) CIRCM (AZ3537), 2) funding to counter emerging technology as identified in Joint Urgent Operational Needs Statement (JUONS) SO-0010 Phase 2a and the Headquarters Department of the Army (HQDA) Directed Requirement for the Advanced Threat Warner Common Infrared Countermeasures Quick Reaction Capability (ATW & CIRCM QRC), and 3) funding to support HQDA Directed Requirement for the Limited Interim Missile Warning System (LIMWS) Quick Reaction Capability (QRC).

**CIRCM (AZ3537)**

The Common Infrared Countermeasure (CIRCM) is the next generation lightweight, laser-based Infrared Countermeasure (IRCM) component that will interface with both the Army's Common Missile Warning System (CMWS) and future missile warning systems (MWS) to defeat current and emerging missile threats that use multispectral technology for rotary-wing, tilt-rotor and small fixed-wing aircraft across the DoD. CIRCM receives an angular bearing hand-off from the MWS, employs a pointing and tracking system which acquires the handed-over threat and tracks the incoming missile during and after motor burnout. CIRCM jams the missile by using modulated laser energy in the missile seeker band, thus degrading the tracking capability of the missile and causing it to miss the aircraft. CIRCM is utilizing Open Systems Architecture which allows flexibility with software and hardware refreshes to keep pace with future threats.

The CIRCM A-Kit includes mounting hardware, wiring harnesses, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type. The CIRCM B-Kit is the mission kit (laser, pointer tracker, and controller) required to achieve near spherical coverage for an aircraft.

**JUONS SO-0010 and ATW & CIRCM QRC**

Phase 2a DoN LAIRCM (JUONS S0-0010) and Phase 3 ATW & CIRCM QRC: Initially, a select number of aircraft in the threat area of responsibility will be outfitted with the Phase 2a Department of the Navy Large Aircraft Infrared Countermeasure (DoN LAIRCM) system. However, this approach came with a Space, Weight and Power - Cooling (SWaP-C) penalty which is being addressed as a follow-on JUONS solution requirement using the Phase 3 Advanced Threat Warner (ATW) and Common Infrared Countermeasure (CIRCM) Quick Reaction Capability (QRC). The intent of the Phase 3 ATW & CIRCM QRC effort is to reduce the SWaP-C associated with the Phase 2a solution.

**LIMWS QRC**

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

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics	<b>P-1 Line Item Number / Title:</b> 5399AZ3537 / Common Infrared Countermeasures (CIRCM)
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready):	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
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**Line Item MDAP/MAIS Code:** N/A

Phase 4 Limited Interim Missile Warning System (LIMWS) QRC: The Phase 4 LIMWS QRC effort is a follow-on bridging solution to the JUONS SO-0010 to fill a global capability gap until the Advanced Threat Detection System (ATDS) Program of Record is fielded. The LIMWS QRC effort provides advance missile detection capability to an increased number of aircraft outside of the Phase 2a and Phase 3 efforts areas of responsibility.

<b>Secondary Distribution</b>		<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	108.721	49.777	36.839	24.060	60.899	112.473	118.623	147.972	166.900
<b>Total: Secondary Distribution</b>	<b>Quantity</b>	-	-	-	-	-	-	-	-	-
	<b>Total Obligation Authority</b>	<b>108.721</b>	<b>49.777</b>	<b>36.839</b>	<b>24.060</b>	<b>60.899</b>	<b>112.473</b>	<b>118.623</b>	<b>147.972</b>	<b>166.900</b>

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

**Appropriation / Budget Activity / Budget Sub Activity:** 2031A: Aircraft Procurement, Army / BA 04: Support Equipment and Facilities / BSA 10: Ground Support Avionics  
**P-1 Line Item Number / Title:** 5399AZ3537 / Common Infrared Countermeasures (CIRCM)

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

**Line Item MDAP/MAIS Code:** N/A

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	AZ3537 / Common Infrared Countermeasures (CIRCM)	P-5a, P-21			- / -	- / 108.721	- / 49.777	- / 36.839	- / 24.060	- / 60.899
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / -</b>	<b>- / 108.721</b>	<b>- / 49.777</b>	<b>- / 36.839</b>	<b>- / 24.060</b>	<b>- / 60.899</b>

\*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:**

FY 2019 Base procurement dollars in the amount of \$36.839 million will fund CIRCM PoR Low Rate Initial Production Two (LRIP 2).

FY 2019 OCO procurement dollars in the amount of \$10.950 million will fund A-Kit installations for Phase 3 ATW & CIRCM QRC effort.

FY 2019 OCO procurement dollars in the amount of \$13.110 million will fund a quantity of 9 CIRCM B-Kits and 30 CIRCM A-Kits in support of Phase 4 LIMWS QRC installation and fielding plan.

In accordance with Section 1815 of the FY 2008 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.

All COMPO 1 Active

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<b>Exhibit P-5, Cost Analysis: PB 2019 Army</b>		<b>Date:</b> February 2018
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 2031A / 04 / 10	<b>P-1 Line Item Number / Title:</b> 5399AZ3537 / Common Infrared Countermeasures (CIRCM)	<b>Item Number / Title [DODIC]:</b> AZ3537 / Common Infrared Countermeasures (CIRCM)

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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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)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	108.721	49.777	36.839	24.060	60.899
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	108.721	49.777	36.839	24.060	60.899
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
<b>Total Obligation Authority (\$ in Millions)</b>	-	<b>108.721</b>	<b>49.777</b>	<b>36.839</b>	<b>24.060</b>	<b>60.899</b>

*(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 Thousands)	-	1,411.961	1,659.233	1,534.958	1,503.750	1,522.475

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 (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
B-Kit Manufacturing <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	485.833	24	11.660	-	-	-	485.833	24	11.660
Other Recurring Production	-	-	-	-	-	-	-	-	0.910	-	-	0.990	-	-	-	-	-	0.990
Low Rate Initial Production Two	-	-	-	-	-	-	-	-	-	-	-	14.592	-	-	-	-	-	14.592
Phase 3 ATW & CIRCM QRC B-Kit Manufacturing <sup>(†)</sup>	-	-	-	1,200.169	77	92.413	1,200.000	30	36.000	-	-	-	-	-	-	-	-	-
ATW & CIRCM QRC A-Kit Installs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.855	-	-	9.855
ATW & CIRCM QRC SEPM	-	-	-	-	-	8.154	-	-	7.440	-	-	-	-	-	1.095	-	-	1.095
ATW & CIRCM QRC Training	-	-	-	-	-	2.718	-	-	-	-	-	-	-	-	-	-	-	-
ATW & CIRCM QRC Fielding	-	-	-	-	-	5.436	-	-	-	-	-	-	-	-	-	-	-	-
B-Kit Manufacturing to Support Phase 4 LIMWS QRC <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	1,041.111	9	9.370	1,041.111	9	9.370
A-Kit Manufacturing to Support Phase 4 LIMWS QRC <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	124.667	30	3.740	124.667	30	3.740

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<b>Exhibit P-5, Cost Analysis: PB 2019 Army</b>		<b>Date:</b> February 2018
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 2031A / 04 / 10	<b>P-1 Line Item Number / Title:</b> 5399AZ3537 / Common Infrared Countermeasures (CIRCM)	<b>Item Number / Title [DODIC]:</b> AZ3537 / Common Infrared Countermeasures (CIRCM)

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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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 (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	108.721	-	-	44.350	-	-	27.242	-	-	24.060	-	-	51.302
<i>Subtotal: Flyaway Cost</i>	-	-	-	-	-	108.721	-	-	44.350	-	-	27.242	-	-	24.060	-	-	51.302
<b>Support - Data Cost</b>																		
Technical Publications	-	-	-	-	-	-	-	-	0.080	-	-	0.580	-	-	-	-	-	0.580
<i>Subtotal: Support - Data Cost</i>	-	-	-	-	-	-	-	-	0.080	-	-	0.580	-	-	-	-	-	0.580
<b>Support - Engineering Change Proposals Cost</b>																		
Engineering Change Proposals	-	-	-	-	-	-	-	-	1.390	-	-	1.890	-	-	-	-	-	1.890
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	-	-	-	-	-	-	1.390	-	-	1.890	-	-	-	-	-	1.890
<b>Support - Fielding Cost</b>																		
Fielding	-	-	-	-	-	-	-	-	2.077	-	-	1.087	-	-	-	-	-	1.087
<i>Subtotal: Support - Fielding Cost</i>	-	-	-	-	-	-	-	-	2.077	-	-	1.087	-	-	-	-	-	1.087
<b>Support - Peculiar Support Equipment Cost</b>																		
Test and Measurement Equipment	-	-	-	-	-	-	-	-	0.050	-	-	0.100	-	-	-	-	-	0.100
<i>Subtotal: Support - Peculiar Support Equipment Cost</i>	-	-	-	-	-	-	-	-	0.050	-	-	0.100	-	-	-	-	-	0.100
<b>Support - System Engineering Cost</b>																		
System Engineering	-	-	-	-	-	-	-	-	0.460	-	-	2.000	-	-	-	-	-	2.000
<i>Subtotal: Support - System Engineering Cost</i>	-	-	-	-	-	-	-	-	0.460	-	-	2.000	-	-	-	-	-	2.000
<b>Support - Training Cost</b>																		
Services	-	-	-	-	-	-	-	-	1.370	-	-	3.940	-	-	-	-	-	3.940
<i>Subtotal: Support - Training Cost</i>	-	-	-	-	-	-	-	-	1.370	-	-	3.940	-	-	-	-	-	3.940
<b>Gross/Weapon System Cost</b>	-	-	-	1,411.961	-	108.721	1,659.233	-	49.777	1,534.958	-	36.839	1,503.750	-	24.060	1,522.475	-	60.899

Secondary Distribution		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	108.721	49.777	36.839	24.060	60.899
<b>Total:</b>	<b>Quantity</b>	-	-	-	-	-

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<b>Exhibit P-5, Cost Analysis:</b> PB 2019 Army		<b>Date:</b> February 2018
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 2031A / 04 / 10	<b>P-1 Line Item Number / Title:</b> 5399AZ3537 / Common Infrared Countermeasures (CIRCM)	<b>Item Number / Title [DODIC]:</b> AZ3537 / Common Infrared Countermeasures (CIRCM)

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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Secondary Distribution		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Secondary Distribution	Total Obligation Authority	108.721	49.777	36.839	24.060	60.899

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

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<b>Exhibit P-5a, Procurement History and Planning:</b> PB 2019 Army							<b>Date:</b> February 2018					
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 2031A / 04 / 10			<b>P-1 Line Item Number / Title:</b> 5399AZ3537 / Common Infrared Countermeasures (CIRCM)				<b>Item Number / Title [DODIC]:</b> AZ3537 / Common Infrared Countermeasures (CIRCM)					

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>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
B-Kit Manufacturing <sup>(†)</sup>		2019	Northrop Grumman Systems Corp / Rolling Meadows	C / FPIF	HQ ACC, Redstone Arsenal, AL	Jun 2019	Oct 2019	24	485.830			
Phase 3 ATW & CIRCM QRC B-Kit Manufacturing		2017	Northrop Grumman Systems Corp / Rolling Meadows	C / FFP	HQ ACC, Redstone Arsenal, AL	Oct 2017	Dec 2018	77	1,200.170			
Phase 3 ATW & CIRCM QRC B-Kit Manufacturing		2018	Northrop Grumman Systems Corp / Rolling Meadows	C / FFP	HQ ACC, Redstone Arsenal, AL	Jan 2018	Mar 2019	30	1,200.000			
B-Kit Manufacturing to Support Phase 4 LIMWS QRC <sup>(†)</sup>	✓	2019	TBD / TBD	C / FPIF	HQ ACC, Redstone Arsenal, AL	Mar 2019	May 2020	9	1,041.110			
A-Kit Manufacturing to Support Phase 4 LIMWS QRC	✓	2019	TBD / TBD	C / FPIF	HQ ACC, Redstone Arsenal, AL	Mar 2019	Mar 2020	30	124.670			

<sup>(†)</sup> indicates the presence of a P-21







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<b>Exhibit P-21, Production Schedule:</b> PB 2019 Army		<b>Date:</b> February 2018
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 2031A / 04 / 10		<b>P-1 Line Item Number / Title:</b> 5399AZ3537 / Common Infrared Countermeasures (CIRCM)
		<b>Item Number / Title [DODIC]:</b> AZ3537 / Common Infrared Countermeasures (CIRCM)

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	Northrop Grumman Systems Corp - Rolling Meadows	5	15	25	0	10	0	10	0	0	0	0
2	TBD - TBD	3	10	15	0	0	0	0	0	0	0	0

**Remarks:**  
Competitive contract award for LIMWS was awarded in December 2017. Production rates are TBD.

"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).