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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604272N / <i>Tact Air Dir Infrared CM (TADIRCM)</i>
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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	91.693	51.311	47.278	68.346	-	68.346	60.448	49.543	36.283	37.007	Continuing	Continuing
3304: <i>CIRCM</i>	91.693	5.763	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	97.456
3348: <i>DAIRCM Development</i>	0.000	45.548	47.278	68.346	-	68.346	60.448	49.543	36.283	37.007	Continuing	Continuing

A. Mission Description and Budget Item Justification

This element includes development of electronic warfare systems for the United States Navy (USN) and United States Marine Corps (USMC) assault aircraft. This includes the development and testing of advanced infrared countermeasures systems for emerging threats and emergency contingencies for Aircraft Survivability Equipment (ASE) suite integration.

FY 2018 RDT&E overseas contingency operations (OCO) funding was required to finalize testing in support of fielding the federated DAIRCM JUONS system.

FY 2019 RDT&E funding required to complete JUONS testing and to begin an integrated DAIRCM solution on MH-60S platforms via risk reduction efforts. The risk reduction efforts will modify Hardware (HW) and Software (SW) to the DAIRCM system as required to meet specifications. Program of Record will eventually support integration and retrofit of 300 USMC and 397 USN aircraft.

FY 2020 RDT&E funding required for continued development of the DAIRCM system (HW and SW) and integrated DAIRCM solution on MH-60S platform. MH-60S is the focus platform in early development and for DAIRCM performance testing. The AH-1Z and UH-1Y, and MH-60R integration specific development will begin at the DAIRCM contractors following MH-60S integration and will focus on ensuring the required interfaces are captured and developed for integration testing to be conducted at a later time.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy				Date: March 2019	
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)			
B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	46.844	47.278	48.907	-	48.907
Current President's Budget	51.311	47.278	68.346	-	68.346
Total Adjustments	4.467	0.000	19.439	-	19.439
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.243	0.000			
• Program Adjustments	5.710	0.000	19.400	-	19.400
• Rate/Misc Adjustments	0.000	0.000	0.039	-	0.039
Change Summary Explanation					
The JUONS schedule delayed due to hardware(HW) and software(SW) issues identified during early DAIRCM testing and platform integration test. The schedule has also been driven by platform integration issues associated with multiple Enhanced GPS/INS units and software transferring/timing issues from older, slower processing chips to more advanced chipsets. Production start-up issues driving hardware deliveries. Hardware problems are solved and yield has improved significantly.					
-JUONS Fielding changed ending quarter from 2Q19 to 4Q21					
-JUONS B kit integration added 2Q19-4Q21					
-JUONS A Kit Development changed 1Q17-1Q23 to 1Q17-2Q19					
-JUONS A Kit Installation Test Aircraft changed end date from 2Q18 to 2Q19					
-JUONS TRR changed from 1Q18 to 3Q19					
-JUONS Integrated Test 2 changed from 4Q18 to 2Q19-3Q19					
-JUONS Live Fire Test 2 changed from 1Q19 to 4Q19					
-JUONS Quick Reaction Assessment changed from 1Q19 to 3Q19					
-JUONS Test Assets Deliveries begin 3Q18					
-JUONS Hardware Deliveries changed from 1Q18-1Q19 to 1Q19-4Q22					
DAIRCM EMD contract lagged due to delayed approval of Program of Record and refinement of the PoR Statement of Work and Specification.					
-DAIRCM SRR Changed from 3Q19 to 3Q20					

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Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>		R-1 Program Element (Number/Name) PE 0604272N / <i>Tact Air Dir Infrared CM (TADIRCM)</i>
<ul style="list-style-type: none"> -DAIRCM SFR added 3Q20 -DAIRCM PDR changed from 1Q20 to 4Q20 -DAIRCM CDD added 4Q18 to 3Q19 -DAIRCM CDR changed from 3Q20 to 3Q21 -DAIRCM Software Qualification Test was removed -DAIRCM B-Kit Integration & Test was removed -DAIRCM Operation Assessment added 4Q24 -DAIRCM EMD Contract Award changed from 3Q19 to 1Q20 -DAIRCM Risk Reduction Delivery Order added 1Q19 -DAIRCM LRIP added 2Q23 		

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)				Project (Number/Name) 3304 / CIRCM			
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
3304: CIRCM	91.693	5.763	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	97.456
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Common Infrared Countermeasures (CIRCM) efforts began for the Navy in FY 2013. This project includes the development, integration, and testing of a laser-based directed infrared countermeasure system for United States Navy and United States Marine Corps assault aircraft. This infrared countermeasure, when integrated with a threat warning detection system, will be capable of countering current and emerging infrared threats. An Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) Acquisition Decision Memorandum (ADM) dated 15 April 2009 designated the Army as the lead service for developing this capability for rotary-wing, tilt-rotor, and small fixed-wing aircraft across the Department of Defense. It also designated the program as an Acquisition Category (ACAT) ID special interest program. The Army has designated the acquisition effort for this capability as the CIRCM program. CIRCM is being evaluated as a potential replacement for Guardian Laser Tracker Assemblies (GLTA) on the DoN LAIRCM system.												
Distributed Aperture Infrared Countermeasure (DAIRCM) developmental activities in hardware and software are being pursued to reduce the size, weight and power required to achieve a threat warning detection system integrated with an infrared countermeasure. DAIRCM development, integration and testing will first be conducted in a federated configuration to support Joint Urgent Operational Need Statement (JUONS) SO-0010 with Oversea Contingency Operations funded follow-on work that began in FY 2018 to provide an integrated (under glass) solution to host platforms. This program develops integrated hardware/software solutions that link on-board integrated Aircraft Survivability Equipment (iASE) that are compatible with mission planning information and store sensor data for post mission threat analysis. This project also adopts future multi-band, networking capabilities to facilitate real-time transfer of threat information, and off-board queuing and control of onboard sensors. CIRCM Funds for FY19 through FY23 are realigned to DAIRCM PU 3348.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: CIRCM Technology Development (TD) Articles: FY 2019 Plans: CIRCM efforts realigned to support DAIRCM PU 3348. FY 2020 Base Plans: N/A FY 2020 OCO Plans: N/A								5.763	0.000	0.000	0.000	0.000
								-	-	-	-	-
Accomplishments/Planned Programs Subtotals								5.763	0.000	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604272N / <i>Tact Air Dir Infrared CM (TADIRCM)</i>	Project (Number/Name) 3304 / <i>CIRCM</i>
<u>C. Other Program Funding Summary (\$ in Millions)</u> N/A		
<u>Remarks</u>		
<u>D. Acquisition Strategy</u> Common Infrared Countermeasures (CIRCM) was a new start for the Navy in FY 2013. CIRCM is an Acquisition Category (ACAT) ID Army lead acquisition program for the development, integration and production of an infrared countermeasure for US Army, US Navy, and US Marine Corps assault aircraft. The Army conducted a 21 month competitive prototyping Technology Development (TD) phase with two contractors. During the TD phase, the contractors developed TD test articles for various test events with emphasis placed on reliability. Contractors concurrently developed preliminary designs for the CIRCM system, conducted systems requirements review, system functional review, and preliminary design review systems engineering technical review events at appropriate times in the schedule. Upon completion of the TD phase, the Army conducted a competition for award of Engineering Manufacturing Development (EMD) contract(s). The EMD phase will be no more than 26 months and will include critical design reviews, test readiness reviews, procurement of 5 EMD test articles in FY 2017 for USN evaluation. The federated DAIRCM system was chosen as the material solution to JUONS SO-0010 and funded via Rapid Acquisition Authority (RAA) with follow-on funding supplied via FY 2017 and FY 2018 Overseas Contingency Operations funding to complete the development, integration and test to support initial fielding in FY 2019. Department of Navy is in the process of developing a Capability Production Document (CPD) to support the transition to an integrated (under glass) solution. Development of the integrated DAIRCM solution will begin in FY 2018. FY2017: Procured 5 CIRCM test assets FY2018: Guardian Laser Tracker Assemblies(GLTA) Replacement evaluation		
<u>E. Performance Metrics</u> FY2018: Guardian Laser Tracker Assemblies(GLTA) Replacement evaluation		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)				Project (Number/Name) 3304 / CIRCM					
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
Primary HDW Dev CIRCM	C/CPAF	NGC : Rolling Meadows	2.721	5.763	Mar 2018	0.000		0.000		-		0.000	0.000	8.484	8.484
Archived Production Development	Various	Various : Various	56.903	0.000		0.000		0.000		-		0.000	0.000	56.903	-
Subtotal			59.624	5.763		0.000		0.000		-		0.000	0.000	65.387	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
Archived Support	Various	Various : Various	10.556	0.000		0.000		0.000		-		0.000	0.000	10.556	-
Subtotal			10.556	0.000		0.000		0.000		-		0.000	0.000	10.556	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
Eng & Eval CIRCM	C/CPFF	Eglin AF Base : Fort Walton Beach FL	4.662	0.000		0.000		0.000		-		0.000	0.000	4.662	4.662
Archived Test and Evaluation	Various	Various : Various	12.711	0.000		0.000		0.000		-		0.000	0.000	12.711	-
Subtotal			17.373	0.000		0.000		0.000		-		0.000	0.000	17.373	N/A
Remarks															
Realigned to Product Development contract															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)				Project (Number/Name) 3304 / CIRCM					
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
Archived Managment Services	Various	Various : Various	3.382	0.000		0.000		0.000		-		0.000	0.000	3.382	-
Govt Eng Supt CIRCM	WR	NAWCWD : Pt. Mugu, CA	0.758	0.000		0.000		0.000		-		0.000	0.000	0.758	-
Subtotal			4.140	0.000		0.000		0.000		-		0.000	0.000	4.140	N/A
Remarks															
Realigned to Product Development contract															
			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			91.693	5.763		0.000		0.000		-		0.000	0.000	97.456	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy										Date: March 2019																											
Appropriation/Budget Activity 1319 / 4										R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)										Project (Number/Name) 3304 / CIRCM																	
CIRCM										FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
										1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																																					
Milestones																																					
Hardware Development																																					
Software Development																																					
Navy Processer Integration																																					
Navy Processer PDR																																					
Reviews																																					
Navy Processer Functional Configuration Audit																																					
Production Milestones																																					
Contract Awards																																					
Deliveries																																					
2020OSD - 0604272N - 3304																																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604272N / <i>Tact Air Dir Infrared CM (TADIRCM)</i>	Project (Number/Name) 3304 / <i>CIRCM</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>CIRCM</i>				
Acquisition Milestones: Milestones: Army Milestone C (MS-C)	3	2018	3	2018
Acquisition Milestones: Navy Processer Integration: Navy Processer	2	2018	4	2018
Acquisition Milestones: Navy Processer PDR: Navy Processer PDR	3	2018	3	2018
Acquisition Milestones: Reviews: Navy Processer CDR	4	2018	4	2018
Production Milestones: Contract Awards: Navy Processer Contract	2	2018	2	2018
Production Milestones: Deliveries: Develop Navy Lab Assets Deliveries	3	2018	3	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)				Project (Number/Name) 3348 / DAIRCM Development			
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
3348: DAIRCM Development	0.000	45.548	47.278	68.346	-	68.346	60.448	49.543	36.283	37.007	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Distributed Aperture Infrared Countermeasures (DAIRCM) Developmental activities in hardware and software are being pursued to reduce the size, weight and power required to achieve a threat warning detection system integrated with an infrared countermeasure. DAIRCM development, integration and testing will first be conducted in a federated configuration to support Joint Urgent Operational Needs Statement (JUONS) SO-0010 to provide increased survivability against Man-Portable Air Defense Systems (MANPADS), Rocket Propelled Grenades (RPG), hostile gunfire, Anti-Aircraft Artillery (AAA) and laser-directed weapons. Follow-on work began in FY 2018 to provide an integrated (under glass) solution to the host platforms and will include development efforts to procure future threat technologies. This program develops integrated hardware/software solutions that link on-board integrated Aircraft Survivability Equipment (iASE) that are compatible with mission planning information and store sensor data for post mission threat analysis.												
FY2019 Efforts will focus on completion of JUONS testing and installation of DAIRCM. FY19 will also begin risk reduction efforts for a POR start in FY20. The POR solution improves performance of the DAIRCM system, meets statutory requirements via Hardware and Software specifications and integration (under glass) with the MH-60S host platform, while maintaining interfaces for further integration for MH-60R, AH1Z, and UH-1Y.												
FY 2020 RDT&E funding required for continued development of the DAIRCM system (HW and SW) and integration (under glass) of the DAIRCM solution on MH-60S platforms. MH-60S is the focus platform in early development and for DAIRCM performance testing. The AH-1Z and UH-1Y, and MH-60R integration specific development will begin at the DAIRCM contractors following MH-60S integration and will focus on ensuring the required interfaces are captured and developed for integration testing to be conducted at a later time.												
JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: DAIRCM Development								45.548	47.278	68.346	0.000	68.346
								Articles: -	-	-	-	-
FY 2019 Plans:												
Begin Risk Reduction efforts for transition to Program of Record (POR)												

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Appropriation/Budget Activity 1319 / 4				R-1 Program Element (Number/Name) PE 0604272N / <i>Tact Air Dir Infrared CM (TADIRCM)</i>				Project (Number/Name) 3348 / <i>DAIRCM Development</i>			

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Continue JUONS efforts <i>FY 2020 Base Plans:</i> Continue DAIRCM POR EMD efforts. Continue JUONS installs. <i>FY 2020 OCO Plans:</i> N/A <i>FY 2019 to FY 2020 Increase/Decrease Statement:</i> Program of Record (POR) transition begins in FY19 and EMD contract awards in FY20. Incremental funding in FY19 and FY20 will also continue to support DAIRCM JUONS effort.					
Accomplishments/Planned Programs Subtotals	45.548	47.278	68.346	0.000	68.346

C. 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 Cost
• APN/0576: <i>Assault DIRCM</i>	40.970	9.820	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	78.250
Remarks											
D. Acquisition Strategy The federated Distributed Aperture Infrared Countermeasures (DAIRCM) system is the solution for small/medium aircraft in response to Joint Urgent Operational Need Statement (JUONS) SO-0010. It was funded in FY16 via Rapid Acquisition Authority (RAA) executed from PUC 3304 CIRCUM. Follow-on funding supplied via Overseas Contingency Operations in FY 2017 and FY 2019 APN OCO; FY 2018 RDT&E PUC 3348 . Funding provided to complete the development, integration test and support of initial fielding. Department of Navy is in the process of developing a Capability Production Document (CPD) to support the transition to an integrated (under glass) solution. Development, integration and test of the integrated solution will begin in FY19.											
E. Performance Metrics FY 2018: Program of Record Risk Reduction Delivery Order on Navy BOA scheduled for 3Q18. FY 2019: Award of contract to meet statutory regulations scheduled for 3Q19.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)				Project (Number/Name) 3348 / DAIRCM Development					
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
Primary HW Dev DAIRCM	C/CPFF	DRS : Dallas, TX	0.000	11.548	Mar 2018	23.142	Jan 2019	34.650	Mar 2020	-		34.650	Continuing	Continuing	Continuing
Primary HW Dev DAIRCM	C/CPFF	Daylight Solutions : San Diego, CA	0.000	12.968	Mar 2018	1.000	Jan 2019	0.000		-		0.000	Continuing	Continuing	Continuing
H-60 Operational Flight Program Dev	C/CPFF	Lockheed Martin : Owego, NY	0.000	5.910	Mar 2018	0.200	Jan 2019	12.013	Mar 2020	-		12.013	Continuing	Continuing	Continuing
H-1 Operational Flight Program Deve	C/CPFF	Northrop Grumman : Woodland Hills, CA	0.000	0.000		0.000		5.000	Nov 2019	-		5.000	Continuing	Continuing	Continuing
Govt Eng Support	WR	NAWCAD : Patuxent River, MD	0.000	3.333	Jan 2018	0.000		2.600	Nov 2019	-		2.600	Continuing	Continuing	Continuing
Govt Eng Support	WR	FRC : Jacksonville, FL	0.000	0.549	Jan 2018	0.000		0.713	Nov 2019	-		0.713	Continuing	Continuing	Continuing
Govt Software Eng Support	WR	NAWCAD : PT Mugu	0.000	2.000	Dec 2017	0.000		3.000	Nov 2019	-		3.000	Continuing	Continuing	Continuing
Aircraft Integration	WR	FRC East : Cherry Point, NC	0.000	0.400	Nov 2017	0.000		0.312	Nov 2019	-		0.312	0.000	0.712	-
Govt Software Eng Support	WR	NRL : Washington, DC	0.000	0.000		2.900	Jan 2019	2.960	Nov 2019	-		2.960	Continuing	Continuing	Continuing
Govt Integrated Logistic Support	C/CPFF	ENGILITY : Chantilly, VA	0.000	0.000		0.000		0.406	Mar 2020	-		0.406	Continuing	Continuing	Continuing
Subtotal			0.000	36.708		27.242		61.654		-		61.654	Continuing	Continuing	N/A
Remarks															
(1) FY 2018 funding supported final test and evaluation of DAIRCM and JUONS. Program of Record (POR) transition begins in FY19.															
(2) POR EMD contract established in FY19 incremental funding provided to support modification to existing DAIRCM JUONS.															
(3) MH-60(Lead Platform) contract supports DAIRCM POR. H-60 Software development aligned to DAIRCM HW/SW development POR requirements															

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Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)				Project (Number/Name) 3348 / DAIRCM Development					
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
Govt Integrated Logistic Support	WR	Fleet Readiness Depot : Jacksonville, FL	0.000	0.000		0.000		0.357	Nov 2019	-		0.357	Continuing	Continuing	Continuing
Logistic Deliverables	SS/CPFF	RIAC : Ft Belvoir, VA	0.000	0.500	Oct 2017	0.000		0.250	Nov 2019	-		0.250	Continuing	Continuing	Continuing
ESOH support	WR	NAWC WD : China lake	0.000	0.123	Oct 2017	0.068	Jan 2019	0.133	Nov 2019	-		0.133	Continuing	Continuing	Continuing
Integrated Logistic Support	C/CPAF	Wyle Laboratories : Lexington Park, MD	0.000	0.116	Jan 2018	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Comercial Shipping TAC code	TBD	Various : Various	0.000	0.017	Oct 2017	0.000		0.050	Oct 2019	-		0.050	Continuing	Continuing	Continuing
Integrated Logistic Support	WR	DTIC : Ft Belvoir, VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Subtotal			0.000	0.756		0.068		0.790		-		0.790	Continuing	Continuing	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
Govt T&E Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		1.650	Dec 2018	1.000	Nov 2019	-		1.000	Continuing	Continuing	Continuing
Govt T&E Support	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		0.216	Nov 2019	-		0.216	Continuing	Continuing	Continuing
Flight Test/Live Fire	WR	USA DPG : Various	0.000	0.000		14.982	Mar 2019	0.405	Mar 2020	-		0.405	Continuing	Continuing	Continuing
Contractor T& E Support	WR	GWEF : Eglin AFB, FL	0.000	0.000		1.225	Feb 2019	1.000	Feb 2020	-		1.000	Continuing	Continuing	Continuing
Govt T&E Support	WR	COTF : Norfolk, VA	0.000	0.000		0.775	Jun 2019	0.108	Nov 2019	-		0.108	Continuing	Continuing	Continuing
Govt T&E Support	WR	CRANE : CRANE	0.000	0.350	Jan 2018	0.100	Jun 2019	0.500	Jan 2020	-		0.500	Continuing	Continuing	Continuing
OCO Govt T&E Support	WR	NAWCAD : Patuxent River, MD	0.000	1.568	Mar 2018	0.000		0.000		-		0.000	0.000	1.568	-
OCO Govt T&E Support	WR	NAWCWD : China Lake, CA	0.000	1.360	Jun 2018	0.000		0.000		-		0.000	0.000	1.360	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)				Project (Number/Name) 3348 / DAIRCM Development					
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
OCO Flight Test/Live Fire	WR	USA DPG : Dugway, UT	0.000	1.968	Jun 2018	0.000		0.000		-		0.000	0.000	1.968	-
OCO HITL lab test	WR	GWEF : Eglin AFB, FL	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
OCO Contractor T& E Support	WR	GWEF : Eglin AFB, FL	0.000	0.450	Jun 2018	0.000		0.000		-		0.000	0.000	0.450	-
OCO Govt T&E Support	WR	COTF : Norfolk, VA	0.000	0.172	Jun 2018	0.000		0.000		-		0.000	0.000	0.172	-
OCO Flight Test/Live Fire	WR	Army : Huntsville AL	0.000	0.923	Apr 2018	0.000		0.000		-		0.000	0.000	0.923	-
Subtotal			0.000	6.791		18.732		3.229		-		3.229	Continuing	Continuing	N/A
Remarks															
Contractor T& E Support to GWEF will increase due to 2 events in FY19.															
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
Govt Eng Support	WR	NAWCWD : PT Mugu, CA	0.000	0.000		0.000		0.210	Oct 2019	-		0.210	Continuing	Continuing	Continuing
Contractor Mgmt Support	C/CPFF	Amelex : Patuxent River, MD	0.000	0.108	Nov 2017	0.000		0.500	Oct 2019	-		0.500	Continuing	Continuing	Continuing
Contractor Eng Support	C/CPFF	Engility : Patuxent River, MD	0.000	0.711	Jun 2018	0.700	Oct 2018	0.711	May 2020	-		0.711	Continuing	Continuing	Continuing
Travel	WR	NAVAIR Various : Patuxent River, MD	0.000	0.119	Dec 2017	0.300	Oct 2018	0.308	Oct 2019	-		0.308	Continuing	Continuing	Continuing
Govt PM support	WR	NAWCWD : Patuxent River, MD	0.000	0.000		0.000		0.711	Oct 2019	-		0.711	Continuing	Continuing	Continuing
Govt Eng Support	WR	NSWC : Dahlgren, VA	0.000	0.014	Jun 2018	0.000		0.020	Nov 2019	-		0.020	Continuing	Continuing	Continuing
Eng Support	C/CPFF	DCS : Bethesda, MD	0.000	0.341	Feb 2018	0.236	Jan 2019	0.213	Feb 2020	-		0.213	Continuing	Continuing	Continuing
Subtotal			0.000	1.293		1.236		2.673		-		2.673	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy										Date: March 2019			
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604272N / <i>Tact Air Dir Infrared CM (TADIRCM)</i>					Project (Number/Name) 3348 / <i>DAIRCM Development</i>			
	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	0.000	45.548		47.278		68.346		-		68.346	Continuing	Continuing	N/A
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy

Date: March 2019

Appropriation/Budget Activity

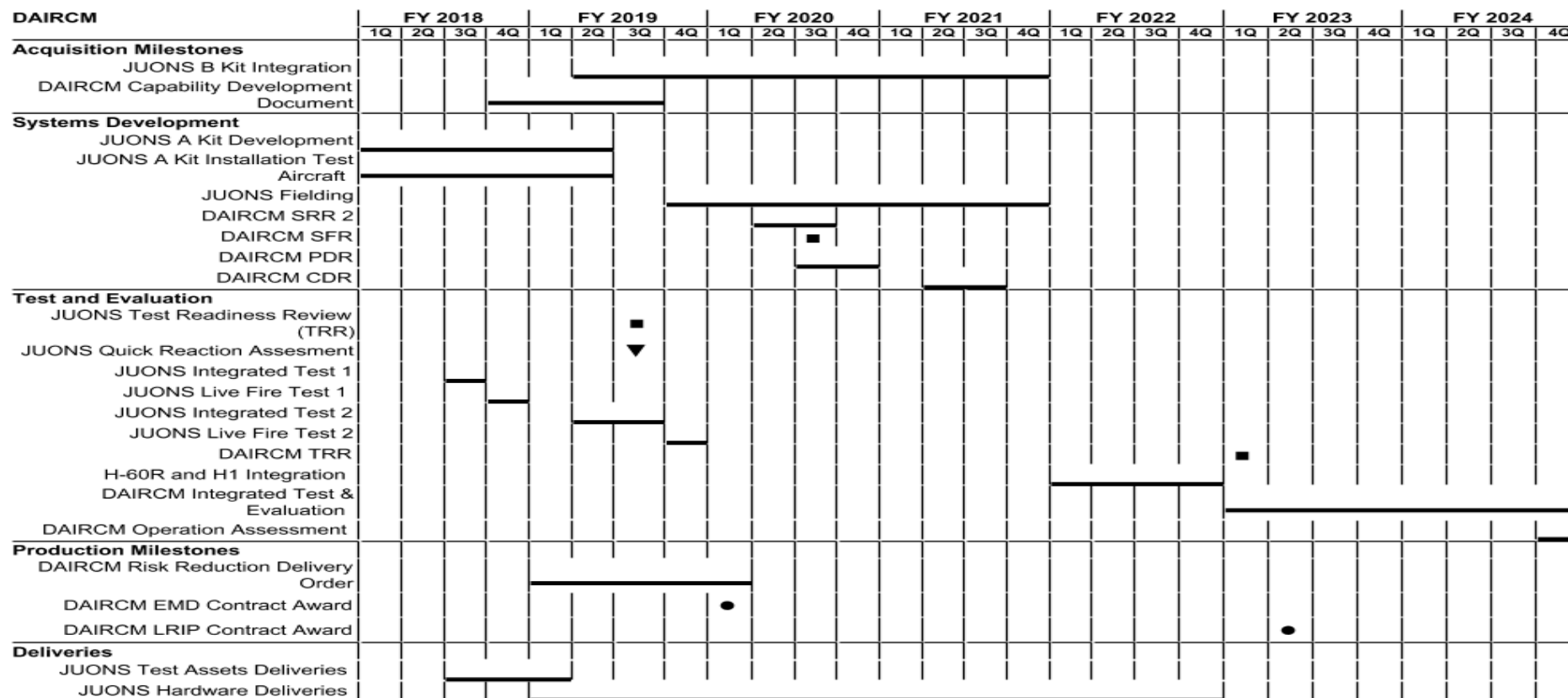
1319 / 4

R-1 Program Element (Number/Name)

PE 0604272N / *Tact Air Dir Infrared CM (TADIRCM)*

Project (Number/Name)

3348 / *DAIRCM Development*



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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)	Project (Number/Name) 3348 / DAIRCM Development	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
DAIRCM				
Acquisition Milestones: JUONS B Kit Integration: Schedule Detail	2	2019	4	2021
Acquisition Milestones: DAIRCM Capability Development Document: Schedule Detail	4	2018	3	2019
Systems Development: JUONS A Kit Development: Schedule Detail	1	2018	2	2019
Systems Development: JUONS A Kit Installation Test Aircraft: Schedule Detail (TEST)	1	2018	2	2019
Systems Development: JUONS Fielding: Schedule Detail	4	2019	4	2021
Systems Development: DAIRCM SRR 2: Schedule Detail	2	2020	3	2020
Systems Development: DAIRCM SFR: Schedule Detail	3	2020	3	2020
Systems Development: DAIRCM PDR: Schedule Detail	3	2020	4	2020
Systems Development: DAIRCM CDR: Schedule Detail	2	2021	3	2021
Test and Evaluation: JUONS Test Readiness Review (TRR): Schedule Detail	3	2019	3	2019
Test and Evaluation: JUONS Quick Reaction Assesment: Schedule Detail	3	2019	3	2019
Test and Evaluation: JUONS Integrated Test 1: Schedule Detail	3	2018	3	2018
Test and Evaluation: JUONS Live Fire Test 1: Schedule Detail	4	2018	4	2018
Test and Evaluation: JUONS Integrated Test 2: Schedule Detail	2	2019	3	2019
Test and Evaluation: JUONS Live Fire Test 2: Schedule Detail	4	2019	4	2019
Test and Evaluation: DAIRCM TRR: Schedule Detail	1	2023	1	2023
Test and Evaluation: H-60R and H1 Integration: Schedule Detail	1	2022	4	2022
Test and Evaluation: DAIRCM Integrated Test & Evaluation: Schedule Detail	1	2023	4	2024
Test and Evaluation: DAIRCM Operation Assessment: Schedule Detail	4	2024	4	2024
Production Milestones: DAIRCM Risk Reduction Delivery Order: Schedule Detail	1	2019	1	2020
Production Milestones: DAIRCM EMD Contract Award: Schedule Detail	1	2020	1	2020

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy			Date: March 2019		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0604272N / Tact Air Dir Infrared CM (TADIRCM)		Project (Number/Name) 3348 / DAIRCM Development	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Production Milestones: DAIRCM LRIP Contract Award: Schedule Detail		2	2023	2	2023
Deliveries: JUONS Test Assets Deliveries: Schedule Detail		3	2018	1	2019
Deliveries: JUONS Hardware Deliveries: Schedule Detail		1	2019	4	2022