Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy												Date: March 2023
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305220N *I MQ-4C Triton*							
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	3,526.543	13.029	13.893	12.094	-	12.094	15.747	14.115	14.345	14.633	45.622	3,670.021
4020: *MQ-4C TRITON*	3,526.543	13.029	13.893	12.094	-	12.094	15.747	14.115	14.345	14.633	45.622	3,670.021
Program MDAP/MAIS Code: **Project MDAP/MAIS Code(s):** 373												

Note

MQ-4C Triton RDT&E efforts segregated into two distinct Program Elements. PE 0305220N, PU 4020 Baseline, supported developmental efforts from the inception of the program and continues to fund fatigue testing, and other assessments that may initiate performance improvement efforts for other aircraft components associated. PE 0305421N, PU 2939 Modernization, supports the development of advanced radar modes inclusive of Ground Moving Target Indicator (GMTI), Enhanced Electro-Optic/Infrared (EO/IR) detection in support of GEOINT for increased maritime domain awareness, Integration of High Gain Aperture (HGA) for improved SIGINT, communications and networks resiliency in denied environments, implementation of multi-UA Command and Control (C2), and implementation of Sense and Avoid (SAA) traffic and weather capability for increased mission availability and airspace integration.

A. Mission Description and Budget Item Justification

The MQ-4C Triton Unmanned Air System (UAS) is a high altitude-long endurance UAS designed to provide Fleet and combatant commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. The MQ-4C air vehicle, mission control system, specialized sensors, and communications suite play a significant role in achieving the Navy's strategic vision for the 21st century. The Triton system provides persistent ISR and unparalleled situational awareness of the maritime battle space to the supported combatant commander and fleet commander. The system also serves as a Fleet response plan enabler with a persistent, global force offering to provide critical trip wire information for intelligence preparation of the environment. Triton provides the Warfighter with unprecedented levels of battlespace awareness to synchronize actions necessary to maintain maritime Full Spectrum Superiority. Teamed with its manned-capability counterpart, the P-8A Poseidon, Triton is a key component of the Navy's maritime domain awareness family of systems. MQ-4C Triton leverages Maritime Patrol and Reconnaissance Force manpower, training and maintenance efficiencies.

Triton Early Operational Capability (EOC) was successfully deployed in 2020. Following EOC, the MQ-4C Triton UAS continues to develop incremental capabilities within the ongoing acquisition program to meet program requirements in support of the 2011 National Defense Authorization Act (NDAA) enabling EP-3 Aries sundown and the Maritime Intelligence, Surveillance, Reconnaissance and Targeting (MISR-T) transition plan.

Increment 1 upgrades to the EOC system support program Initial Operational Capability (IOC) meeting NDAA 2011 requirements enabling MISR-T transition and EP-3 sundown. Increment 1 provides Multi-Intelligence capabilities, Counter Electronic Attack upgrades, and data dissemination across multiple classification domains and successfully completes in FY 2023.

Triton MQ-4C Unmanned Aerial Vehicle System (UAS) Full Scale Fatigue Test (FSFT), Effects of Defects (EoD) test efforts, and incorporating a stress report represent the effort required to complete the FSFT and EoD testing. Additionally, post-test activities necessary to fully verify and validate fatigue and damage tolerance

requirements of the Performance Based System Specification (PBSS). Fatigue testing and the results are required to certify the airframe to its designed service life of 51,000 flight hours/2,029 landings. The duration of fatigue testing is paced by the cycling rate limit of the test fixture for the main wing/fuselage/tail test article, as well as time perform teardown activities to inspect for cracks and determining initiation points for cracks when observed.

The FSFT consists of two lifetimes of Durability and one lifetime of Damage Tolerance (DaDT) testing on a complete airframe, and performed on statically determinant major components as separate stand-alone tests, to verify that the airframe structure meets DaDT requirements as defined in the Performance Based System Specification (PBSS).
FSFT consists of the Triton airframe into one (1) Full Assembly level test and 6 Minor Component level tests. The 1 Full Assembly Test is defined as the Full Airframe Test and includes a fully assembled wing, v-tail, nacelle, metallic fuselage, and composite aft fuselage. The six (6) minor tests are defined as the Ruddervator Control Surface, Aileron Control Surface, Spoiler Control Surface, Nose Landing Gear, Main Landing Gear, and Main Landing Gear Side Brace Actuator component tests.

JUSTIFICATION FOR BUDGET ACTIVITY: The FY 2024 funding is provided for System Demonstration Test Article (SDTA) vehicles and Fatigue Testing to support post-test teardown, inspections and reporting for portions of the full-scale test efforts. Additionally, the funding supports the execution of the Effects of Defects testing to retire limitations imposed by non-blueprint product, and various aircraft component performance improvements.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	13.029	13.893	13.876	-	13.876
Current President's Budget	13.029	13.893	12.094	-	12.094
Total Adjustments	0.000	0.000	-1.782	-	-1.782
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	-1.800	-	-1.800
• Rate/Misc Adjustments	0.000	0.000	0.018	-	0.018

Change Summary Explanation

CHANGES:
Funding: FY 2024 was reduced by $1.782 million for Rate/Misc adjustments, as well as other minor programmatic adjustments.
Technical: N/A.

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy	Date: March 2023
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305220N *I MQ-4C Triton*

Schedule: Full Scale Fatigue Study - N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0305220N / *MQ-4C Triton*				Project (Number/Name) 4020 / *MQ-4C TRITON*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
4020: *MQ-4C TRITON*	3,526.543	13.029	13.893	12.094	-	12.094	15.747	14.115	14.345	14.633	45.622	3,670.021
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 373

A. Mission Description and Budget Item Justification

The MQ-4C Triton Unmanned Air System (UAS) is a high altitude-long endurance UAS designed to provide Fleet and combatant commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. The MQ-4C air vehicle, mission control system, specialized sensors, and communications suite play a significant role in achieving the Navy's strategic vision for the 21st century. The Triton system provides persistent ISR and unparalleled situational awareness of the maritime battle space to the supported combatant commander and fleet commander. The system also serves as a Fleet response plan enabler with a persistent, global force offering to provide critical trip wire information for intelligence preparation of the environment. Triton provides the Warfighter with unprecedented levels of battlespace awareness to synchronize actions necessary to maintain maritime Full Spectrum Superiority. Teamed with its manned-capability counterpart, the P-8A Poseidon, Triton is a key component of the Navy's maritime domain awareness family of systems. MQ-4C Triton leverages Maritime Patrol and Reconnaissance Force manpower, training and maintenance efficiencies.

Triton Early Operational Capability (EOC) was successfully deployed in 2020. Following EOC, the MQ-4C Triton UAS continues to develop incremental capabilities within the ongoing acquisition program to meet program requirements in support of the 2011 National Defense Authorization Act (NDAA) enabling EP-3 Aries sundown and the Maritime Intelligence, Surveillance, Reconnaissance and Targeting (MISR-T) transition plan.

Increment 1 upgrades to the EOC system support program Initial Operational Capability (IOC) meeting NDAA 2011 requirements enabling MISR-T transition and EP-3 sundown. Increment 1 provides Multi-Intelligence capabilities, Counter Electronic Attack upgrades, and data dissemination across multiple classification domains and successfully completes in FY 2023.

Triton MQ-4C Unmanned Aerial Vehicle System (UAS) Full Scale Fatigue Test (FSFT), Effects of Defects (EoD) test efforts, and incorporating a stress report represent the effort required to complete the FSFT and EoD testing. Additionally, post-test activities necessary to fully verify and validate fatigue and damage tolerance requirements of the Performance Based System Specification (PBSS). Fatigue testing and the results are required to certify the airframe to its designed service life of 51,000 flight hours/2,029 landings. The duration of fatigue testing is paced by the cycling rate limit of the test fixture for the main wing/fuselage/tail test article, as well as time perform teardown activities to inspect for cracks and determining initiation points for cracks when observed.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**
Title: Product Development	12.682	13.546	11.747	0.000	11.747
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *MQ-4C Triton*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Description: Awarded contract in FY 2008 to initiate the MQ-4C Triton System Development and Demonstration (SDD) phase effort. The Prime Contractor is responsible for overall system development and performance, as well as associated management, engineering and logistics activities. ***FY 2023 Plans:*** Efforts within this PE continue on airframe fatigue testing and analysis and initiates performance improvement efforts for other aircraft components including, but not limited to, the engine and avionics systems. ***FY 2024 Base Plans:*** Efforts within this PE continue on airframe fatigue testing and analysis and initiates performance improvement efforts for other aircraft components including, but not limited to, the engine and avionics systems. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease of $1.799 from FY 2023 to continue airframe fatigue and analysis as well as performance improvements for other aircraft components.					
Title: ILS, Support, Studies & Analysis	0.305	0.305	0.305	0.000	0.305
Articles:	-	-	-	-	-
Description: Integrated Logistics Support, Studies and Analysis. ***FY 2023 Plans:*** Continue integrated logistics support, logistics supportability analyses and environmental planning, and development of technical data to support fielding of the MQ-4C Triton UAS capabilities. ***FY 2024 Base Plans:*** Continue integrated logistics support, logistics supportability analyses and environmental planning, and development of technical data to support fielding of the MQ-4C Triton UAS capabilities. ***FY 2024 OCO Plans:*** N/A					
Title: Test & Evaluation (T&E)	0.024	0.024	0.024	0.000	0.024
Articles:	-	-	-	-	-
Description: T&E efforts.					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305220N / *MQ-4C Triton*	Project (Number/Name) 4020 / *MQ-4C TRITON*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY 2023 Plans: Continue Developmental Test support of MQ-4C Triton fatigue testing. ***FY 2024 Base Plans:*** Continue Developmental Test support of MQ-4C Triton fatigue testing. ***FY 2024 OCO Plans:*** N/A					
Title: Program Management (PM) ***Articles:*** ***Description:*** PM support and travel. ***FY 2023 Plans:*** Continue the following: PM support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and joint and international cooperation efforts. ***FY 2024 Base Plans:*** Continue the following: PM support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and joint and international cooperation efforts. ***FY 2024 OCO Plans:*** N/A	0.018 -	0.018 -	0.018 -	0.000 -	0.018 -
Accomplishments/Planned Programs Subtotals	13.029	13.893	12.094	0.000	12.094

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *MQ-4C Triton*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• RDTEN/0305421N: *RQ-4 Modernization*	134.323	150.093	300.378	-	300.378	431.346	363.789	152.967	122.562	0.000	2,717.051
• APN/0442: *MQ-4 Triton*	483.151	584.192	486.345	-	486.345	187.035	150.170	131.884	136.268	51.700	5,141.738
• APN/0605/J0442: *Spares and Repair Parts*	28.387	6.406	10.974	-	10.974	0.000	0.000	0.000	0.000	0.000	601.144
• APN/0596: *MQ-4 Series*	7.046	91.977	93.951	-	93.951	122.518	150.230	149.947	162.758	245.194	1,121.738
• OMN/1D4D: *Weapons Maintenance*	42.061	118.549	129.148	-	129.148	138.698	165.728	182.145	185.794	Continuing	Continuing

Remarks

D. Acquisition Strategy

The MQ-4C Triton acquisition approach supports the Navy's Maritime Intelligence, Surveillance, Reconnaissance, and Targeting (MISR-T) Transition Plan by providing a stable and effective baseline Early Operational Capability (EOC) in 2020 to facilitate Fleet introduction and learning while continuing development engineering and integrated test on Signals Intelligence (SIGINT), and other upgrades to deliver an Increment 1 configuration at Initial Operational Capability (IOC). Increment 1 development completes in FY2023, while air vehicle fatigue testing continues throughout the FYDP.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *MQ-4C Triton*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPIF	Northrop Grumman : Rancho Bernardo, CA	2,873.102	12.001	Nov 2021	12.851	Nov 2022	11.054	Nov 2023	-		11.054	96.704	3,005.712	2,950.338
Systems Engineering	WR	NAWC-AD : Patuxent River, MD	247.518	0.681	Nov 2021	0.695	Nov 2022	0.693	Nov 2023	-		0.693	5.176	254.763	-
Prior Year Prod Dev no longer in the FYDP	Various	Various : Various	62.656	0.000		0.000		0.000		-		0.000	0.000	62.656	-
		Subtotal	3,183.276	12.682		13.546		11.747		-		11.747	101.880	3,323.131	N/A

Remarks

The Primary Hardware Development line resources Northrop Grumman for prime contractor activities, which include System Demonstration Test Article (SDTA) vehicles and Fatigue Testing. Decreased funding from FY 2023 to FY 2024 reflects the resources required to continue airframe fatigue testing and analysis as well as to support efforts to transition into post-test teardown, inspections and reporting for portions of the full-scale test effort, namely the outboard ruddervator and nose landing gear. Additionally, the funding supports the execution of the Effects of Defects testing to retire limitations imposed by non-blueprint product, and various aircraft component performance improvements.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	Various	Various : Various	21.360	0.025	Nov 2021	0.025	Nov 2022	0.025	Nov 2023	-		0.025	0.196	21.631	-
Integrated Logistics Support	WR	NAWC-AD : Patuxent River, MD	55.539	0.280	Nov 2021	0.280	Nov 2022	0.280	Nov 2023	-		0.280	2.092	58.471	-
Prior year cost no longer funded in the FYDP	Various	Various : Various	32.336	0.000		0.000		0.000		-		0.000	0.000	32.336	-
		Subtotal	109.235	0.305		0.305		0.305		-		0.305	2.288	112.438	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305220N / *MQ-4C Triton*	Project (Number/Name) 4020 / *MQ-4C TRITON*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWC-AD : Patuxent River, MD	161.660	0.024	Nov 2021	0.024	Nov 2022	0.024	Nov 2023	-		0.024	0.168	161.900	-
Developmental Test & Evaluation (DT&E)	C/BA	Various : Various	35.687	0.000		0.000		0.000		-		0.000	0.000	35.687	-
		Subtotal	197.347	0.024		0.024		0.024		-		0.024	0.168	197.587	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Allot	Various : Various	1.846	0.018	Nov 2021	0.018	Nov 2022	0.018	Nov 2023	-		0.018	0.126	2.026	-
Prior year cost no longer funded in the FYDP	Various	Various : Various	34.839	0.000		0.000		0.000		-		0.000	0.000	34.839	-
		Subtotal	36.685	0.018		0.018		0.018		-		0.018	0.126	36.865	N/A

	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,526.543	13.029		13.893		12.094		-		12.094	104.462	3,670.021	N/A

Remarks

Prior to FY 2010, MQ-4C Triton, formerly known as RQ-4 Broad Area Maritime Surveillance (BAMS), was budgeted for in PE 0305205N: Endurance Unmanned Aer Veh.

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *MQ-4C Triton*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*

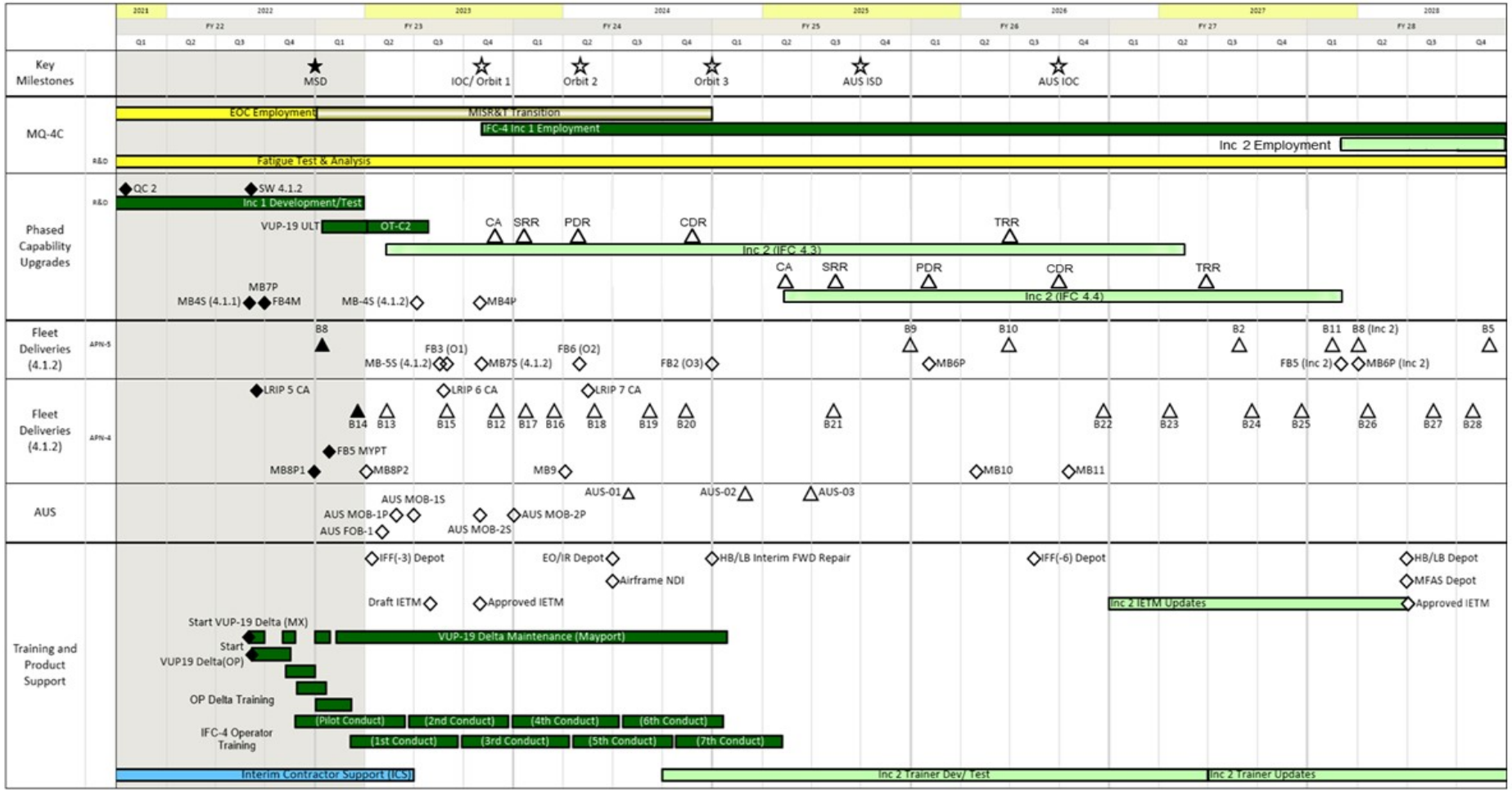

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *MQ-4C Triton*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4020				
Acquisition Milestones: Initial Operational Capability	4	2023	4	2023
System Development: Airframe Fatigue Testing and Analysis	1	2022	4	2028
System Development: Phased Capability Upgrades - Increment 1 Development / Test	1	2022	1	2023
System Development: Phased Capability Upgrades - Increment 2 Development / Test	3	2023	3	2027
Test & Evaluation Activities: Increment 1 Integrated Test (Combined/Developmental/ Operational)	1	2022	1	2023
Test & Evaluation Activities: Increment 1 Operational Test	1	2023	3	2023
Test & Evaluation Activities: Increment 2 Integrated Test (Combined/Developmental/ Operational)	3	2023	2	2028
Test & Evaluation Activities: Increment 2 Operational Test	3	2027	1	2028
Production Milestones: Contracts: Low Rate Initial Production Lot 5 Contract Award	3	2022	3	2022
Production Milestones: Contracts: Low Rate Initial Production Lot 6 Contract Award	3	2023	3	2023
Production Milestones: Contracts: Low Rate Initial Production Lot 7 Contract Award	2	2024	2	2024
Production Milestones: Deliveries: Low Rate Initial Production Lot 3 Delivery	2	2023	3	2023
Production Milestones: Deliveries: Low Rate Initial Production Lot 4 Delivery	1	2024	2	2024
Production Milestones: Deliveries: Low Rate Initial Production Lot 5 Delivery	3	2024	2	2027
Production Milestones: Deliveries: Low Rate Initial Production Lot 6 Delivery	3	2027	2	2028
Production Milestones: Deliveries: Low Rate Initial Production Lot 7 Delivery	3	2028	4	2028