Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy	Date: February 2018
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604245N *I H-1 Upgrades*

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	119.231	27.013	61.288	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	207.532
3359: *H-1 Improvements*	119.231	27.013	61.288	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	207.532

A. Mission Description and Budget Item Justification

The mission of the AH-1 attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance, survivability enhancements, and fire support coordination capabilities under day/night and adverse weather conditions. The mission of the UH-1 utility helicopter is to provide command and control and combat assault support under day/night and adverse weather conditions and special operations support; supporting arms coordination and aeromedical evacuation. Major modifications for both aircraft include 37 AH-1Ws converted to AH-1Zs, build 152 new AH-1Zs, remanufacture ten (10) H-1N helicopters and build 150 new UH-1Y models. AH-1Z and UH-1Y models include a 4-bladed, composite rotor system with semi-automatic bladefold, performance-matched transmissions, T700 Engine Digital Electronic Control Units, 4-bladed tail rotors and drive systems, more effective stabilizers, upgraded landing gear, and common, fully integrated cockpits and avionics systems. These upgrades add 10,000 flight hours to AH-1Z/UH-1Y airframes. The fully integrated cockpits reduce operator workload and improve situational awareness, thus increasing safety and reducing the rate of aircraft attrition. They provide considerable growth potential for future weapon systems and avionics to significantly increase mission effectiveness and survivability. The cockpits also include integration of onboard mission planning, communications, digital fire control, self-navigation, night navigation/targeting, air-to-ground missile and air-launched intercept missile weapon systems management in nearly identical crew stations, which significantly reduces training requirements. These upgrades maximize commonality between the two aircraft and provide needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.

This budget is required for follow-on improvements to H-1 aircraft via integration of sensors and weapons, avionics, and air vehicle components that will address deficiencies, systems safety, obsolescence, readiness, reliability, supportability, and relevance in the battlespace. Improvements will include all associated System Configuration Set (SCS) updates as well as integration and testing related to the aircraft platforms.

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	27.441	61.288	59.827	-	59.827
Current President's Budget	27.013	61.288	0.000	-	0.000
Total Adjustments	-0.428	0.000	-59.827	-	-59.827
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.423	0.000			
• Program Adjustments	0.000	0.000	-58.507	-	-58.507

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy					Date: February 2018
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0604245N *I H-1 Upgrades*			
• Rate/Misc Adjustments	0.000	0.000	-1.320	-	-1.320
• Congressional General Reductions Adjustments	-0.005	-	-	-	-

Change Summary Explanation

Funds decrease from FY 2018 to FY 2019 due to transfer of effort to new PE 0604245M beginning in FY 2019.

Technical: None

Schedule: System Configuration Sets (SCS) will be continuously developed and released in conjunction with required hardware obsolescence and capability improvements. Software development as a whole are accounted for separately on the R-3 and are apportioned into development efforts for Avionics and Sensors & Weapons on the R-2a. Software is no longer portrayed separately on the R-2a or R-4 since SCS builds are linked to the development of hardware. The Mission Description section for Avionics and Sensors and Weapons state that SCS is part of each of the projects.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604245N / *H-1 Upgrades*	Project (Number/Name) 3359 / *H-1 Improvements*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3359: *H-1 Improvements*	119.231	27.013	61.288	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	207.532
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The objective of H-1 Improvements is to provide follow-on Research, Development, Test and Evaluation efforts in support of all H-1 aircraft.

Air Vehicle and Engine improvements include analysis of structural data to formulate Damage Limits and Tolerances for structural components to reduce life cycle costs and maintenance workload; and redesign of structural components and drive system components to minimize excessive and premature wear, increase reliability, and improve existing design deficiencies. Additional air vehicle upgrades include: redesign of the aircraft power-generating and electrical components (generators, inverters, wiring) to support power requirements for existing and future systems (Aircraft Survivability Equipment, emerging electronic warfare, and Degraded Visual Environment), redesign of the Environmental Control System /Thermal Redesign to support cooling of Technology Refresh Mission Computer and other avionics, redesign to add an auxiliary fuel capability, Intrepid Tiger, and upgrades the UH-1Y cabin floor panels.

Avionics improvements target digital inter-operability, integrated avionics, safety & survivability, and situational awareness for both the pilot and aircrew safety. This includes integrating Joint Battle Command-Platform (JBC-P), Full Motion Video (FMV), Degraded Visual Environment (DVE), Helmet Mounted Display improvements, cockpit displays, precision and GPS non-precision landing capability, Crash Survivable Flight Incident Recorder, collision avoidance, improved Embedded Global Positioning System (EGI), Inertial Navigation System (INS), targeting sensor systems and mission computer. H-1 capability improvements include improved Aircraft Survivability Equipment (ASE), digital operations & transfer of data, digital interoperability, digital video recording, video and data networking, and information integration with aviation combat elements and Marine Air Ground Task Force elements. Mandated capability efforts include - Communications, Navigation and Surveillance system/ Air Traffic Management (CNS/ATM), Required Navigation Performance/Area Navigation (RNP/RNAV), GPS Selective Availability Anti-Spoofing Module (SAASM), Automatic Dependent Surveillance - Broadcast (ADS-B), Crash Survivable Flight Incident Recorder, development efforts required for Depot standup and incorporation of technology and information protection/Information Assurance in critical avionics and sensor systems. In addition, the goal is to reduce total ownership cost for H-1 aircraft and related support systems by improving reliability and maintainability of critical flight and avionics systems along with associated peculiar avionics support equipment and incorporating fact-of-life obsolescence solutions. All avionics improvements include related System Configuration Set (SCS) development updates and testing.

Sensors, Weapons and Helmet Mounted Display System improvements include, manufacturing process improvements, hardware and software redesign to improve reliability, improve production methodologies, implement program security initiatives and increase the collective capability to address emerging battlefield threats. These improvements also address reliability and obsolescence, which collectively enhance Fleet readiness. The technical interface between the aircraft sensor, helmet and weapons is increasingly challenging to effectively employ advanced precision guided weapons and Aircraft Survivability Equipment (ASE) for the interface between the sensors, helmet and precision guided munitions. These systems require extensive software and hardware upgrades that translate into meaningful, sensor fusion based solutions, to provide both battlefield and situational awareness to the H1 platform. Specifically, the AN/ALQ-30 Target Sight System (TSS) will implement several block upgrade efforts with improvements to the IR Pointer, Laser and Cameras as well as adding capabilities such as Laser Spot Tracker and High Definition Video. The Optimized TopOwl (OTO) optics upgrades, reliability, additive manufacturing initiatives, will address multiple human factor improvements, to include Degraded

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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Visual Environment (DVE), as well as advanced boresighting and mapping improvements to improve weapons accuracy. The Digital Interoperability of the Helmet and Sensor will extend to improvements in ASE and Smart Dispense Technologies to improve aircraft survivability. Radar and Missile Warning improvements, including APR-39D(V)2 and the Distributed Aperture Infrared Countermeasures (DAIRCM), require extensive integration and testing. Development, test and integration efforts with the Advanced Precision Kill Weapons (APKWS), M299 Launcher improvements, Digital Rocket Launcher (DRL), AIM-9X, the AN/ALQ-231 (V) Intrepid Tiger II Electronic Warfare Pod and the Joint Air-to-Ground Missile (JAGM) Hellfire missile will follow in FY18. Improving and integrating weapon systems will align with these upgrades to improve the overall accuracy, lethality and survivability of the H1 platform.

These improvements will provide considerable growth potential for future weapon systems, air vehicle improvements, software improvements, and avionics upgrades, which will significantly increase mission effectiveness & survivability, while potentially reducing life cycle costs. The cockpits will also include integration of onboard mission planning, communications, digital fire control, self-navigation, night navigation/targeting, precision guided munitions, and air-launched intercept missile weapon systems management in nearly identical crew stations, which significantly reduce training requirements. These upgrades maximize commonality between all H-1 Type/Model/Series aircraft and provide needed improvements in crew and passenger reliability, survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: System Configuration Set Development	13.058	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: N/A					
FY 2019 Base Plans: N/A					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement: No funding change from FY18 to FY19.					
Title: Weapons and Sensors Testing and Integration	1.046	7.381	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: Develop, test and integrate hardware, software changes to address parts obsolescence and deficiencies identified in test for aircraft sensors; Target Sight Systems (TSS) TEU-VPX OFP. Define and initiate a Requirements Trade Study for a Block Upgrade to the TSS. Continue software integration of JAGM and test functionality and compatibility with aircraft software in support of missile developmental testing. Initiate requirements analysis and develop, test and integrate hardware, software changes for a redesigned Digital					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Rocket Launcher (DRL). Develop, test and integrate hardware changes to the OTO Helmet, to include Display Module improvements and defining Cockpit Mapping Robot requirements. Continue with development testing of JAGM and DRL. Conduct DT Assist for JAGM and Operational Assessments of BS II and Intrepid Tiger improvements. ***FY 2019 Base Plans:*** Conduct prototype developmental testing of TSS Block Upgrade initiatives, to include software compatibility and high definition video feed to the Optimized Top Owl HMSD (Helmet Mounted Sight Display). Conduct HMSD optics testing, digital upgrades and Sensor/ASE interfaces. Continue enhanced digital capability efforts, Aircraft Survivability Equipment (ASE) improvements, Helmet Mounted Display improvements, with full visor integration and display enhancements, systems obsolescence mitigation efforts, as well as opportunities to improve support and test equipment modifications. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funds decrease from FY18 to FY19 due to transfer of effort to new PE 0604245M beginning in FY19.					
Title: Air Vehicle and Engines Improvements	9.250	32.575	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: Continue redesign of structural components to minimize excessive and premature wear, increase reliability, increase aircraft load capabilities, and improve existing design deficiencies. Continue redesign of the fuel system, and aerial refueling capability. Continue AC/DC generator Small Business Innovation Research (SBIR) and initiate redesign of the aircraft electrical power-generating components and aircraft re-wiring to support power requirements for existing and future systems to include stores select-ability, future Avionics Survivability Equipment (ASE), emerging Electronic Warfare (EW), and Degraded Visual Environment (DVE) systems. Continue Environmental Control Systems/Thermal Redesign to support other avionics on the UH-1Y/AH-1Z. Continue redesign of the drive system components (rotor brake/slip ring/standpipe/gearboxes/drive shaft and couplers/chip detectors) to increase reliability and reduce high cost and/or failure rates. Continue upgrades and redesigns of main and tail rotor blades. Continue survivability upgrades (canted forward chaff buckets, blast frag canopy, opaque armor, self-sealing fuel tanks, sump and backing board). Initiate UH-1Y structural improvements					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
to increase capability including Intrepid Tiger, auxiliary fuel, cabin floor boards to prevent corrosion, floor panel access, and other structural reinforcements. ***FY 2019 Base Plans:*** Continue redesign of structural components to minimize excessive and premature wear, increase reliability, increase aircraft load capabilities, and improve existing design deficiencies. Continue redesign of the fuel system. Continue redesign of the aircraft electrical power-generating components and aircraft re-wiring to support power requirements for existing and future systems to include stores select-ability, future Avionics Survivability Equipment (ASE), emerging Electronic Warfare (EW), and Degraded Visual Environment (DVE) systems. Continue redesign of the Environmental Control Systems/Thermal to support other avionics on the UH-1Y/AH-1Z. Continue redesign of the drive system components (rotor brake/slip ring/standpipe/gearboxes/ drive shaft and couplers/chip detectors) to increase reliability and reduce high cost and/or failure rates. Continue upgrades and redesign of main and tail rotor blades. Continue survivability upgrades (canted forward chaff buckets, blast frag canopy, opaque armor, self-sealing fuel tanks, sump and backing board). Continue UH-1Y structural improvement program to increase capability including Intrepid Tiger, auxiliary fuel, cabin floor boards to prevent corrosion, floor panel access, and other structural reinforcements. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funds decrease from FY18 to FY19 due to transfer of effort to new PE 0604245M beginning in FY19.					
Title: Avionics Improvements	3.659	21.332	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: Continue design and development for digital interoperability improvements, avionics systems obsolescence mitigation efforts, and peculiar avionics support equipment, automatic test equipment, mission computer SCS improvements, satellite communication improvement, digital interoperability application of Variable Message Formatting (VMF), Aircraft Dependent Surveillance Broadcast (ADS-B), Selective Availability Anti-Spoofing Module (SAASM), GPS non-precision approach capability and Navigation Warfare (NAVWAR) GPS signal protection efforts; UH-1Y aft cabin display for situational awareness and portable tablet Marine Air-Ground Task Force (MAGTF) improvements; Continue development and testing for digital interoperability improvements, additional waveform functionality, and avionics systems obsolescence mitigation efforts, and peculiar avionics support equipment, automatic test equipment and mission computer SCS improvements, ASE, EW, Satellite Communications Full Motion Video, UH-1Y Aft Cabin Display and additional waveform					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
functionality, Aircraft Dependent Surveillance Broadcast (ADS-B), digital map and data storage capabilities, digital video recording, avionics components obsolescence mitigation and regression testing; Continue enhancement efforts digital capability efforts, digital map and data storage capability, digital video recording, avionics components obsolescence and regression testing, display systems, digital interoperability, satellite communication, digital systems upgrades, avionics components obsolescence mitigation and regression testing, enhanced digital capability efforts, other ASE improvements, avionics systems obsolescence mitigation efforts, development of peculiar avionics support equipment, and development of automatic test equipment; Initiate design and development on TAWS, Wireless Intercommunication Systems (WICS), Joint Battlefield Command - Platform (JBC-P), Mobile User Objective System (MUOS) for over the horizon communication, Degraded Visual Environment and collision avoidance capability, Embedded Global Positioning System/Inertial Navigation System (EGI) upgrade for Selective Availability Anti-Spoofing Module (SAASM), GPS non-precision approach capability and Navigation Warfare (NAVWAR) GPS signal protection efforts, Crash Survivable Flight Instrument Recorder (CSFIR), and Link tactical data exchange.					
FY 2019 Base Plans: Continue with software integration, Development Testing (DT) and Validation and Verification (V&V) activities associated with SCS 8.2. Support software design changes associated with SCS 8.2.2 in support of the new JAGM capability. Continue to support Avionics Test Facility (ATF), ATF SCS testing and debug. Initiate development of requirements and software architecture for SCS 9.0 to include Aircraft Network Switch (ANS), Advanced Data Transfer System (ADTS), AIM-9X, Tactical Secure Voice, Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN), and Variable Message Format (VMF) Protocol for ARC-210 RT-1939A Radio. Complete development efforts on the Mission Computer (TRMC) redesign. Continue design, development and testing for digital interoperability improvements, additional waveform functionality, avionics components / systems obsolescence mitigation efforts, peculiar avionics support equipment, automatic test equipment and mission computer SCS improvements, Satellite Communications improvement, Full Motion Video, UH-1Y Aft Cabin Display for situational awareness, portable tablet Marine Air-Ground Task Force (MAGTF) improvements, digital interoperability application of Variable Message Formatting (VMF), Aircraft Dependent Surveillance Broadcast (ADS-B), and additional waveform functionality. Continue enhancement efforts digital capability efforts, digital map and data storage capabilities, digital video recording, display systems, digital interoperability, digital systems upgrades, avionics regression testing. Initiate design and development on TAWS, Wireless Intercommunication Systems (WICS), Joint Battlefield Command - Platform (JBC-P), Mobile User Objective System (MUOS) for over the horizon communication, Degraded Visual Environment and collision avoidance capability, Embedded Global Positioning System/Inertial Navigation System (EGI) upgrade for Selective					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Availability Anti-Spoofing Module (SAASM), GPS non-precision approach capability and GPS signal protection efforts, Crash Survivable Flight Instrument Recorder (CSFIR), and Link tactical data exchange. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funds decrease from FY18 to FY19 due to transfer of effort to new PE 0604245M beginning in FY19.					
Accomplishments/Planned Programs Subtotals	27.013	61.288	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• APN/0178: *UH-1Y/AH-1Z APN1*	861.946	727.637	862.837	-	862.837	62.781	7.657	7.800	8.012	2.044	10,473.739
• APN/0178C: *UH-1Y/AH-1Z APN1 Advance Procurement*	49.208	42.082	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	500.492

Remarks

D. Acquisition Strategy

Follow-on H-1 Improvements will be developed using cost plus fixed fee type contracts.

E. Performance Metrics

Continue hardware and software development and test for follow-on H-1 Improvements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	BHTI : Amarillo, TX	17.009	5.140	Jan 2017	22.748	Jan 2018	0.000		-		0.000	0.000	44.897	44.897
Primary Hardware Development	SS/CPFF	Northrup Grumman : Woodland Hills, CA	2.714	0.000		0.000		0.000		-		0.000	0.000	2.714	2.714
Systems Engineering	WR	NAWCAD : Patuxent River, MD	2.429	0.525	Nov 2016	0.677	Nov 2017	0.000		-		0.000	0.000	3.631	-
		Subtotal	22.152	5.665		23.425		0.000		-		0.000	0.000	51.242	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	SS/CPFF	BHTI : Amarillo, TX	20.198	4.633	Feb 2017	9.131	Feb 2018	0.000		-		0.000	0.000	33.962	33.962
Software Development	SS/FP	Northrup Grumman : Woodland Hills, CA	6.340	1.664	Nov 2016	1.882	Nov 2017	0.000		-		0.000	0.000	9.886	9.886
Software Development	WR	NAWCWD : China Lake, CA	23.352	6.761	Nov 2016	3.523	Nov 2017	0.000		-		0.000	0.000	33.636	-
		Subtotal	49.890	13.058		14.536		0.000		-		0.000	0.000	77.484	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test and Evaluation	WR	COMOPTEVFOR : Norfolk, VA	6.590	0.810	Nov 2016	2.953	Nov 2017	0.000		-		0.000	0.000	10.353	-
Development Test and Evaluation	WR	NAWCAD : Patuxent River, MD	36.484	6.225	Nov 2016	19.105	Nov 2017	0.000		-		0.000	0.000	61.814	-
		Subtotal	43.074	7.035		22.058		0.000		-		0.000	0.000	72.167	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various : Various	0.966	0.330	Nov 2016	0.334	Nov 2017	0.000		-		0.000	0.000	1.630	1.630
Program Management Support	Various	Various : Various	2.505	0.687	Nov 2016	0.695	Nov 2017	0.000		-		0.000	0.000	3.887	-
Travel	WR	NAVAIR : Patuxent River, MD	0.644	0.238	Oct 2016	0.240	Oct 2017	0.000		-		0.000	0.000	1.122	-
		Subtotal	4.115	1.255		1.269		0.000		-		0.000	0.000	6.639	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	119.231	27.013		61.288		0.000		-		0.000	0.000	207.532	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
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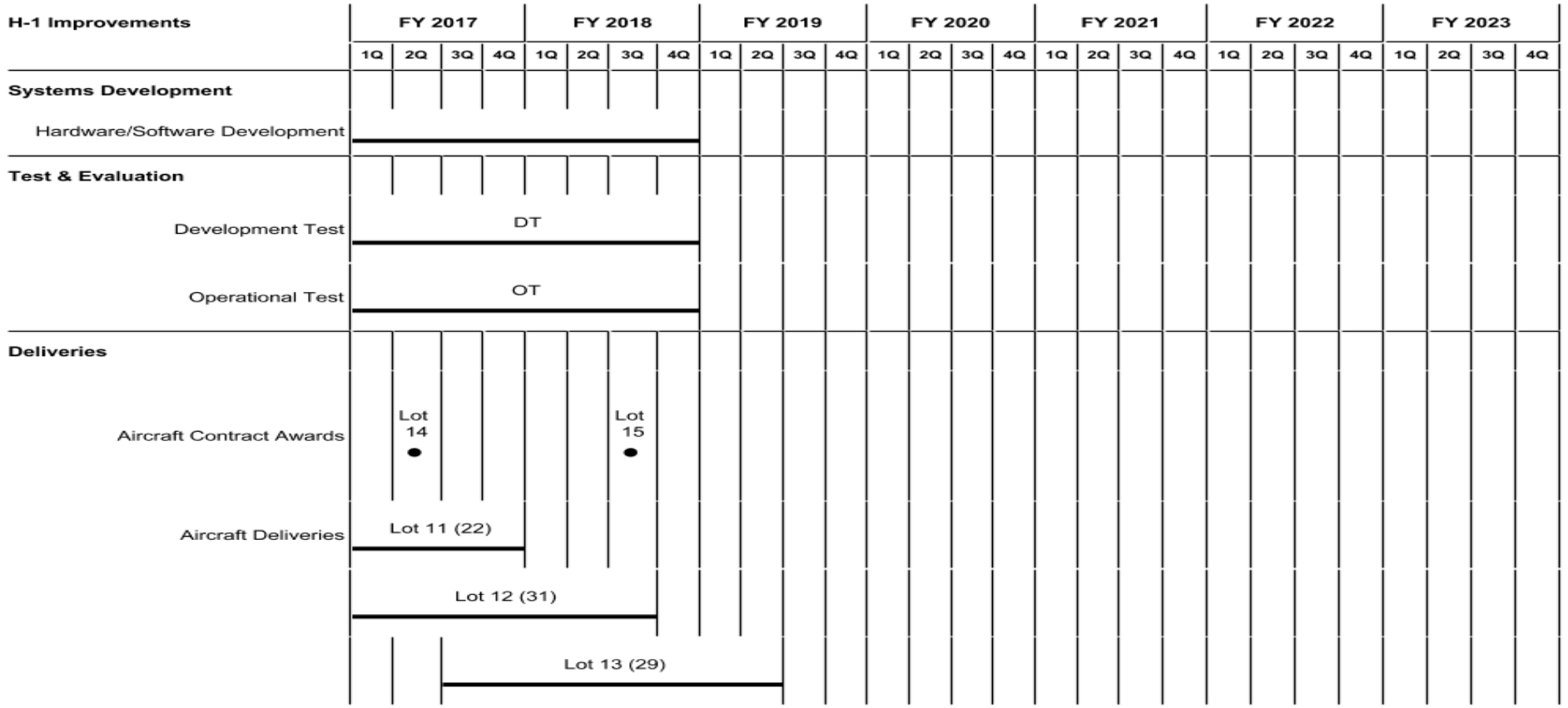

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
H-1 Improvements				
Systems Development: Hardware/Software Development: Schedule Detail	1	2017	4	2018
Test & Evaluation: Development Test: H-1 Improvements DT	1	2017	4	2018
Test & Evaluation: Operational Test: H-1 Improvements OT	1	2017	4	2018
Deliveries: Aircraft Contract Awards: Lot 14	2	2017	2	2017
Deliveries: Aircraft Contract Awards: Lot 15	3	2018	3	2018
Deliveries: Aircraft Deliveries: Lot 11 FRP Y + Z	1	2017	4	2017
Deliveries: Aircraft Deliveries: Lot 12 FRP Y + Z	1	2017	3	2018
Deliveries: Aircraft Deliveries: Lot 13 FRP Y + Z	3	2017	2	2019