Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy											Date: May 2021	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604366N *I Standard Missile Improvements*							
COST ($ in Millions)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
Total Program Element	2,776.023	196.135	305.795	343.511	-	343.511	-	-	-	-	-	-
0439: *Standard Missile Improvement*	1,299.660	74.578	61.664	47.386	-	47.386	-	-	-	-	-	-
2063: *SM-6 Blk IB*	23.329	74.565	164.262	171.921	-	171.921	-	-	-	-	-	-
3092: *Standard Missile 6 Program*	1,428.915	40.239	79.869	124.204	-	124.204	-	-	-	-	-	-
9999: *Congressional Adds*	24.119	6.753	0.000	0.000	-	0.000	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

STANDARD Missile (SM) is Navy's premier Anti-Air Warfare (AAW) missile, providing both area defense for the Fleet and self-defense for individual AEGIS CGs and DDGs, as required by the Joint Theater Air Missile Defense (TAMD), Mission Need Statement (MNS), Defense Planning Guidance (DPG), Quadrennial Defense Review (QDR), and Ship Class AAW Self Defense Capstone Requirements Document. SM-6 provides an air defense force multiplier to the U.S. Navy to greatly expand the AWS battlespace. Combining a modified Advanced Medium-Range Air-to-Air Missile (AMRAAM) active seeker onto the proven STANDARD Missile airframe, SM-6 provides an extended range (ER) anti-air warfare capability both over sea and overland. This low-risk approach relying on non-developmental items supported an FY 2011 Initial Operating Capability. With integrated fire control support, SM-6 BLK I ER provides the Navy with an increased battlespace against Anti-Air Warfare (AAW) threats over-the-horizon.

B. Program Change Summary ($ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	195.296	386.225	284.513	-	284.513
Current President's Budget	196.135	305.795	343.511	-	343.511
Total Adjustments	0.839	-80.430	58.998	-	58.998
• Congressional General Reductions	-	-1.723			
• Congressional Directed Reductions	-	-78.707			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	8.380	0.000			
• SBIR/STTR Transfer	-7.541	0.000			
• Program Adjustments	0.000	0.000	64.270	-	64.270
• Rate/Misc Adjustments	0.000	0.000	-5.272	-	-5.272

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy	Date: May 2021
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604366N *I Standard Missile Improvements*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2020	FY 2021
Project: 9999: *Congressional Adds*		
Congressional Add: *Advanced carbon nanotube materials research*	6.753	0.000
Congressional Add Subtotals for Project: 9999	6.753	0.000
Congressional Add Totals for all Projects	6.753	0.000

Change Summary Explanation

Project 0439: The FY 2022 Funding Request was decreased by -$1.0M to account for the availability of prior year execution balances, was decreased by -$1.531M due to manpower savings, and was decreased by -$0.260M for miscellaneous adjustments.

Project 2063: The FY 2022 Funding Request was increased by $22.700M for Ultra Electronics Unit (EU) integration into SM-6 IB. Ultra Electronics Unit (EU) integration into SM-6 IB allows for continued production and incremental upgrades to SM-6 BLK IB and EU processor lifetime buy needs to be replaced due to obsolescence issue. The FY 2022 Funding Request was decreased by -$4.5M due to the availability of prior year execution balances. The FY2022 Funding Request was decreased by -$2.177M (-$0.239M from EU and -$1.938M from SM-6 Blk 1B Development) due to rates changes, manpower savings and NWCF rate adjustments.

Project 3092:
The FY 2020 Standard Missile program funding profile was increased by $8.38M to successfully complete a test event detailed analysis and complete the ECP development for cut-in on the SM-6 Block IA production line.

The FY 2022 funding profile was decreased by -$5.2M for the availability of prior year execution balances. The program was increased by $39.77M to build the foundation for the Testing & Evaluation (T&E) required to support IOC of the DDG 51 Flt III and FFG(X); A) Supports modifications to the SM-6 and SM-2 Active Missile Variants Flight Instrumentation Kits, B) Upgrades NSWC Corona and PMRF range telemetry data processing equipment, flight analysis data tools, secure management /storage, and portable telemetry data collection that are mandatory for future active missile test and evaluation events. In addition, the FY 2022 Funding Profile was increased by $12.5M to allow the program to begin manufacturing readiness activities in FY 2022. The FY 2022 Funding Profile was decreased by -$0.745M due to manpower savings, and was decreased -$0.559M for miscellaneous adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604366N / *Standard Missile Improvements*	Project (Number/Name) 0439 / *Standard Missile Improvement*	

COST ($ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
0439: *Standard Missile Improvement*	1,299.660	74.578	61.664	47.386	-	47.386	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Future Combat System Integration S-Band Radar (AMDR-S) for DDG 51 Flight III ships, and with other platforms/Combat System baselines, will include requirements review/updates and analysis, verification; technical documentation, design review and working group Subject Matter Expert (SME) support, missile/radar integration, missile test hardware procurement, risk assessment, safety, test and evaluation planning, analysis, and data collection. Deliverables include interface control documents (ICDs) changes, missile specifications changes, and engineering documents updates to support AEGIS Baseline 10 (BL10) Integrated Program Review (IPR) Process (FY18-FY21) Engineering Development Model (EDM) testing (FY16-FY20); Combat Systems Engineering Development Site (CSEDS) , Moorestown, NJ (FY21-FY22); Combat System/missile integration testing at Pacific Missile Range Facility/Advanced Radar Detection Laboratory (PMRF/ARDEL) Kauai, HI (FY18-FY21) and Sudbury, MA (FY20); Waterfront Integration Testing (WIT) FY22-FY23 and Electromagnetic Environmental Effects (E3) and Hazard of Electromagnetic Radiation to Ordnance (HERO) Testing, analysis, and reports for BL10 DDG 51 FLT III FY21-FY22.

Standard Missile-2 BLK IIIC engineering changes funding is for the design, systems engineering, analysis, integration, and test of replacements for obsolete components as well as performance improvements to address emerging threats. Development will include transition to an active seeker baseline leveraging the investment made with the SM-6 BLK I and ESSM Block 2 missiles. Capability improvements: Enhanced stream-raid performance against numerous threats via target resolution and missile/target pairing logic, increased depth of fire, and improved firepower due to decreased dependence on illuminators. The program was designated an Accelerated Acquisition (AA) program by the CNO/ASN RDA on November 14, 2017. Initial Capability (IC) planned for Q2FY2023.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Future Combat System Integration (formerly AMDR)	5.398	5.520	13.974	0.000	13.974
Articles:	-	-	-	-	-
FY 2021 Plans: Plan and support missile radar and combat system (CS) testing using Virtual Operational Missile (VOM) with AEGIS combat system using SPY-6 at CSEDS. Continue to integrate and implement ET-17 solutions. Support HERO Issue testing at NSWC Dahlgren Division. Support AEGIS BL10 IPR Process.					
FY 2022 Base Plans: Continue to plan and support missile radar and combat system (CS) testing using Inert Operational Missile (IOM), Missile					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 0439 / *Standard Missile Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Simulation Unit (MSU), or VOM with AEGIS combat system using SPY-6 at CSEDS. Continue to integrate and implement ET-17 solutions. Continue HERO and E3, including Electromagnetic Vulnerability (EMV) support issue testing as required. Continue to prepare for and support WIT. Continue to support AEGIS Baseline 10 IPR Process. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The increase of $8.5M from FY21 to FY22 is due to several factors: 1. A significant portion of AEGIS BL10 land-based missile integration activities at the Combat System Engineering Development Site (CSEDS) moving out of FY21 into FY22. 2. E3 Testing and specifically EMV testing required to support the shipboard environment moved out of FY21 into FY22 as the facility to conduct this testing requires upgraded capability which will not be available until FY22. 3. WIT Testing for the 1st DDG 51 Flight III Ship, DDG 125, occurs beginning in FY22. 4. DDG 125 Bravo Trial which includes the first Standard Missile firing from a DDG 51 Flight III Ship occurs in FY22.					
Title: Standard Missile-2 BLK IIIC	69.180	56.144	33.412	0.000	33.412
Articles:	-	-	-	-	-
FY 2021 Plans: Prepare for and conduct Controlled Test Vehicle 1 and 2 (CTV-1/2) and prepare Guided Test Vehicle 1 (GTV-1) flight tests at White Sands Missile Range (WSMR). Continue missile software (SW) development and AEGIS integration. Continue to support SSSTRP and WSESRB meetings. Continue Electromagnetic Environmental Effects (E3) and Hazard of Electromagnetic Radiation to Ordnance (HERO) testing and analysis. Receive approval to enter in to Initial Production 1 (IP-1). Prepare for Demonstration Decision to conduct at-sea flight testing. Prepare for and support a Rapid Fielding Decision (RFD). ***FY 2022 Base Plans:*** Complete Guided Test Vehicle 1 (GTV-1) flight tests at White Sands Missile Range (WSMR). Prepare for and conduct Quick Reaction Assessment at-sea test events. Complete QRA Runs for the Record in support of System Verification Review (SVR). Complete System Verification Review. Finalize E3 testing and receive concurrence from the Weapons System Explosive Safety Review Board (WSESRB) for fleet release. ***FY 2022 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 0439 / *Standard Missile Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The decrease of -$22.732M from FY21 to FY22 is because the majority of SM-2 Block IIIC development was completed in FY19-21. Development will finish in FY22 and SM-2 Block IIIC will conduct it's first at-sea flight test.					
Accomplishments/Planned Programs Subtotals	74.578	61.664	47.386	0.000	47.386

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• WPN/2356: *Standard Missile Mods*	2.500	66.981	148.834	-	148.834	-	-	-	-	-	-
• 2356 QTY BLK IIIC: *QTY BLK IIIC*	0.000	20.000	40.000	-	40.000	-	-	-	-	-	-
• 2356 SM-2 BLK IIIC: *SM-2 BLK IIIC*	0.000	54.581	117.434	-	117.434	-	-	-	-	-	-
• 2356 BLK IIIAZ Mods: *SM-2 BLK IIIAZ Mods*	2.500	12.400	31.400	-	31.400	-	-	-	-	-	-
• 2356 QTY IIIAZ: *QTY IIIAZ*	0.000	14.000	40.000	-	40.000	-	-	-	-	-	-

Remarks

RDOC Check for WPN/2356 pulled the entire control for BLI 2356. SM-2 BLK IIIC controls are: FY21: $54.581, FY22: $117.434, FY23: $114.448, FY24: $110.738, FY25: $257.112, FY26: $312.234 and it includes AUR, canisters and support.
SM-2 BLK IIIAZ mods control for BLI 2356: FY20: $2.5M, FY21: $12.4M, FY22: $31.4M which includes kits and support. Controls and quantities for BLK IIIC and BLK IIIAZ were manually entered.

D. Acquisition Strategy

The Navy's SM-2 Block IIIC program is an upgrade to the SM-2 Air Defense missile that will ultimately result in active, medium range missiles onboard AEGIS Cruisers and Destroyers. SM-2 Block IIIC is a rapid prototyping pathway middle tier acquisition (MTA) project that will maximize the reuse of the existing SM-6 Block I active guidance section with a SM-2 Block III rocket motor while minimizing new hardware and software development work. Initial capability is anticipated to provide 60 full up-rounds. The engineering and manufacturing development contract awarded December 14, 2018. The Acquisition Strategy for SM-2 Block IIIC was approved March 9, 2018.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 0439 / *Standard Missile Improvement*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Design and Analysis1	C/CPFF	RAYTHEON : Tucson, AZ	393.149	44.558	Nov 2019	34.792	Nov 2020	20.774	Nov 2021	-		20.774	-	-	-
Design and Analysis2	C/CPFF	JHU/APL : Laurel, MD	22.169	3.530	Nov 2019	4.000	Nov 2020	2.340	Nov 2021	-		2.340	-	-	-
Design and Analysis3	MIPR	MIT/Lin Lab : Lexington, MA	0.050	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis4	WR	NSWC : Dahlgren	791.792	0.432	Jan 2020	2.245	Nov 2020	0.950	Nov 2021	-		0.950	-	-	-
Design and Analysis5	WR	NSWC : Indian Head	1.120	0.391	Nov 2019	0.240	Nov 2020	0.000		-		0.000	-	-	-
Design and Analysis6	WR	NAWC : China Lake	5.944	0.035	Nov 2019	0.000		0.000	Nov 2021	-		0.000	-	-	-
Design and Analysis7	Various	LOCKHEED MARTIN : Moorestown, NJ	17.775	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis8	WR	CNO : Washington, DC	0.010	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis9	WR	CMDP : Phoenix, AZ	4.795	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis11	WR	NSWC : Crane	0.257	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis12	WR	DOI&CNAP : Washington, DC	0.487	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis13	WR	COMPTEVFOR : Norfolk, VA	0.460	0.160	Nov 2019	0.275	Nov 2020	0.450	Nov 2021	-		0.450	-	-	-
Design and Analysis14	C/CPFF	LOCKHEED MARTIN : Moorestown, NJ	2.000	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis15	WR	CARDEROCK : Bethesda, MD	0.080	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis16	WR	NWAS : Corona	1.561	0.347	Nov 2019	1.136	Nov 2020	1.383	Nov 2021	-		1.383	-	-	-
Design and Analysis17	C/CPFF	CORVID : Mooresville, NC	0.100	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis18	C/CPFF	BAE : Rockville, MD	0.512	0.160	Nov 2019	1.720	Nov 2020	0.883	Nov 2021	-		0.883	-	-	-
Design and Analysis19	MIPR	MDA : Dahlgren,VA	1.257	0.000		0.000		0.000		-		0.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 0439 / *Standard Missile Improvement*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Design and Analysis20	WR	IWS3D : ARLINGTON, VA	1.500	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis21	C/CPFF	LOCKHEED MARTIN : IWS (IWS 1)	28.047	7.141	Nov 2019	3.400	Nov 2020	0.800	Nov 2021	-		0.800	-	-	-
Design and Analysis22	WR	IWS3L : Arlington, Va	10.850	4.300	Nov 2019	0.250	Nov 2020	0.100	Nov 2021	-		0.100	-	-	-
Design and Analysis23	WR	NSWC : PHD	0.759	0.000	Nov 2019	0.065	Nov 2020	0.000	Nov 2021	-		0.000	-	-	-
Design and Analysis24	C/CPFF	IWS1 : Washington, D.C.	0.000	5.000	Nov 2019	0.000		5.600	Nov 2021	-		5.600	-	-	-
Design and Analysis25	WR	IWS 3A : Arlington, Va	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Design and Analysis26	WR	IWS7 : Washington, DC	0.000	0.000		4.370	Nov 2020	1.900	Nov 2021	-		1.900	-	-	-
		Subtotal	1,284.674	66.054		52.493		35.180		-		35.180	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DEVELOPMENTAL TEST & EVALUATION1	WR	NSWC : Port Hueneme	0.185	0.095	Nov 2020	0.655	Jan 2021	1.383	Nov 2021	-		1.383	-	-	-
DEVELOPMENTAL TEST & EVALUATION2	WR	WSMR : New Mexico	1.630	1.000	Jan 2020	0.600	Jan 2021	0.150	Nov 2021	-		0.150	-	-	-
DEVELOPMENTAL TEST & EVALUATION3	WR	NAWC : Pt Mugu	0.098	0.000		0.264	Nov 2020	2.262	Nov 2021	-		2.262	-	-	-
DEVELOPMENTAL TEST & EVALUATION4	WR	PMRF : Hawaii	0.338	0.000		0.000		0.000		-		0.000	-	-	-
DEVELOPMENTAL TEST & EVALUATION5	WR	NSWC : Techrep	0.567	0.558	Nov 2019	0.563	Jan 2021	0.565	Nov 2021	-		0.565	-	-	-
DEVELOPMENTAL TEST & EVALUATION6	SS/CPFF	RAYTHEON : Tucson, Az	0.000	1.695	Nov 2019	0.200	Apr 2021	3.000	Nov 2021	-		3.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 0439 / *Standard Missile Improvement*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DEVELOPMENTAL TEST & EVALUATION7	C/CPFF	JHU/APL : Laurel, Md	0.000	0.519	Nov 2019	0.000		0.200	Nov 2021	-		0.200	-	-	-
DEVELOPMENTAL TEST & EVALUATION7	C/CPIF	VARIOUS : IWS (IWS 1)	0.000	0.650	Nov 2019	3.702	May 2021	2.800	Nov 2021	-		2.800	-	-	-
DEVELOPMENTAL TEST & EVALUATION7	WR	NSWC : Dahlgren	0.000	0.248	Jan 2020	0.220	Feb 2021	0.300	Nov 2021	-		0.300	-	-	-
DEVELOPMENTAL TEST & EVALUATION7	WR	NSWC : Corona	0.000	0.000		0.000		0.200	Nov 2021	-		0.200	-	-	-
		Subtotal	2.818	4.765		6.204		10.860		-		10.860	-	-	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CONTRACTOR ENGINEERING SUPPORT	C/CPAF	VARIOUS : VARIOUS	2.630	1.931	Nov 2019	0.000		0.000		-		0.000	-	-	-
PROGRAM MANAGEMENT SUPPORT	C/CPAF	VARIOUS : VARIOUS	9.062	1.798	Nov 2019	2.917	Nov 2020	1.301	Nov 2021	-		1.301	-	-	-
TRAVEL	Allot	IWS3 : Arlington, VA	0.476	0.030	Nov 2019	0.050	Nov 2020	0.045	Nov 2021	-		0.045	-	-	-
		Subtotal	12.168	3.759		2.967		1.346		-		1.346	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,299.660	74.578		61.664		47.386		-		47.386	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 0439 / *Standard Missile Improvement*

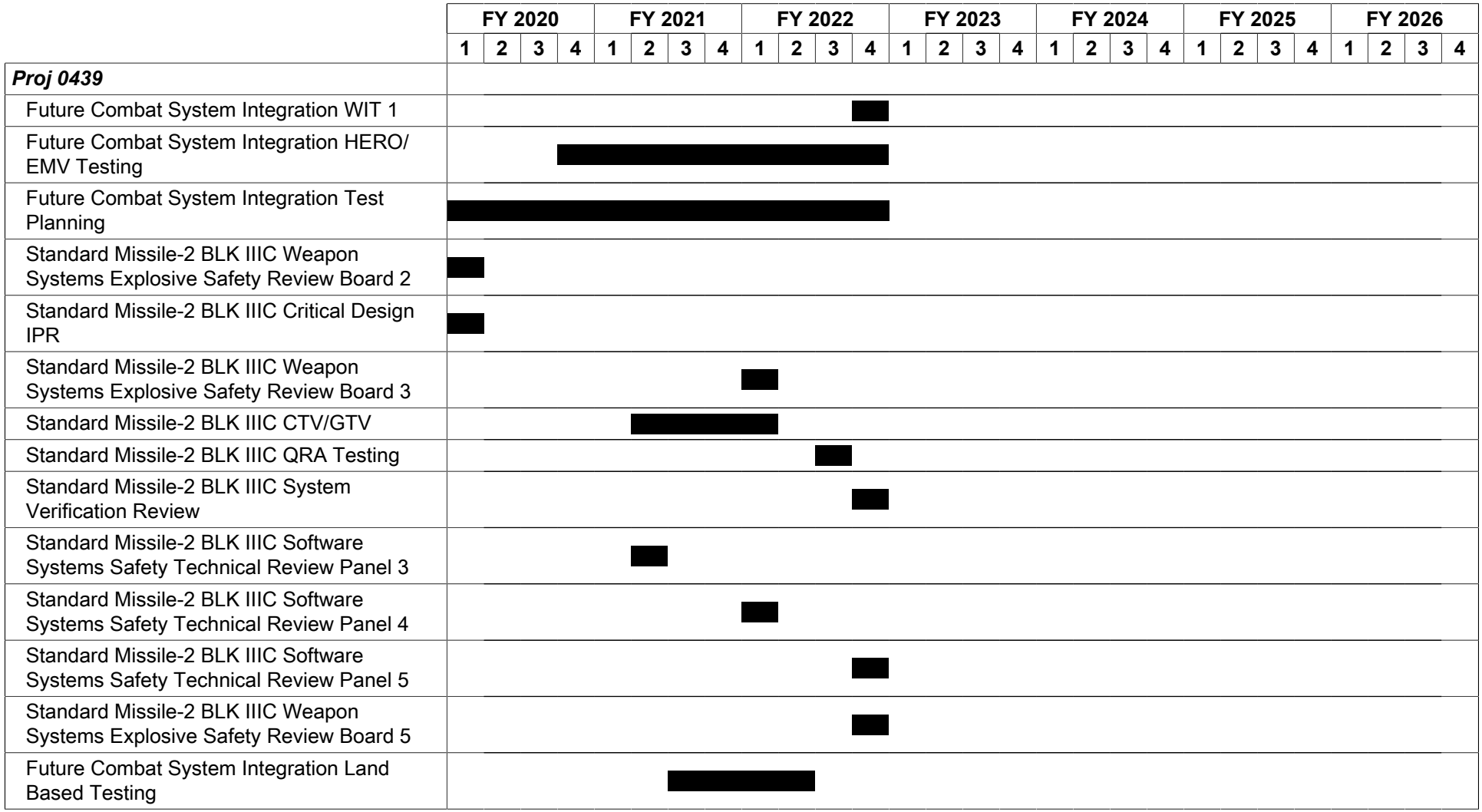

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 0439 / *Standard Missile Improvement*

	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Standard Missile-2 BLK IIIC Software Systems Safety Technical Review Panel 2																												

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 0439 / *Standard Missile Improvement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0439				
Future Combat System Integration WIT 1	4	2022	4	2022
Future Combat System Integration HERO/EMV Testing	4	2020	4	2022
Future Combat System Integration Test Planning	1	2020	4	2022
Standard Missile-2 BLK IIIC Weapon Systems Explosive Safety Review Board 2	1	2020	1	2020
Standard Missile-2 BLK IIIC Critical Design IPR	1	2020	1	2020
Standard Missile-2 BLK IIIC Weapon Systems Explosive Safety Review Board 3	1	2022	1	2022
Standard Missile-2 BLK IIIC CTV/GTV	2	2021	1	2022
Standard Missile-2 BLK IIIC QRA Testing	3	2022	3	2022
Standard Missile-2 BLK IIIC System Verification Review	4	2022	4	2022
Standard Missile-2 BLK IIIC Software Systems Safety Technical Review Panel 3	2	2021	2	2021
Standard Missile-2 BLK IIIC Software Systems Safety Technical Review Panel 4	1	2022	1	2022
Standard Missile-2 BLK IIIC Software Systems Safety Technical Review Panel 5	4	2022	4	2022
Standard Missile-2 BLK IIIC Weapon Systems Explosive Safety Review Board 5	4	2022	4	2022
Future Combat System Integration Land Based Testing	3	2021	2	2022
Standard Missile-2 BLK IIIC Software Systems Safety Technical Review Panel 2	1	2020	1	2020

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604366N / *Standard Missile Improvements*	Project (Number/Name) 2063 / *SM-6 Blk IB*	

COST ($ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
2063: *SM-6 Blk IB*	23.329	74.565	164.262	171.921	-	171.921	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program leverages existing missile technology and advanced missile technology from the SM-6 BLK IB Phase IA Rocket Motor Rapid Prototyping Experimentation and Demonstration (RPED) effort completing in FY 20. It aligns with the STANDARD Missile roadmap and takes advantage of the Navy's investment in the AEGIS Weapon System (AWS). This missile will provide an extended range capability for SM-6 and will be a key contributor to the protection of Joint U.S. Forces, in support of the 2018 National Defense Strategy. SM-6 Block IB addresses valid Joint, Fleet, and Navy Urgent Operational Needs and existing, Joint Requirements Oversight Council (JROC)-approved requirements. The Accelerated Acquisition Board of Directors (AA BoD) met on 17 January 2018 and approved the designation of the SM-6 Block IB Phase IA (Rocket Motor) as a Rapid Prototyping, Experimentation and Demonstration (RPED) project. This designation acknowledged the requirement to expedite the development, acquisition and fielding of the SM-6 Block IB to Naval Forces. The AA BoD met 9 November 2018 and directed SM-6 BLKIB to commence All Up Round prototyping (Phase IB). In December 2020, the program initiated a restructure to transition from an Accelerated Acquisition program with 10 USC 2538 authority to a Major Development Acquisition Program (MDAP).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: SM-6 BLK IB Development	74.565	164.262	149.460	0.000	149.460
Articles:	-	-	-	-	-
FY 2021 Plans: Continue design and development efforts started in FY 20. Initiate ground testing including wind tunnel testing to characterize aerodynamic changes. Implement characterization in model based analytical tools to facilitate design and design validation. Conduct a Preliminary Design Review for the All Up Round. Continue development of the 21-inch rocket motor design and fabricate multiple 21-inch diameter rocker motor prototypes. Initiate design verification testing for the 21-inch diameter industry rocket motor, including conduct static firings and safety tests. Procure and deliver test article hardware prototypes of Control Surface Assemblies (CSAs), Steering Control Sections (SCS), Rocket Motors (RM), and Power Conditioning and Telemetry (PC&T) sections. Complete design and begin development and verification of the All-Up- Round Thermal Protection System including analytical validation. Implement design modifications to the MK 29 Mod 1 canister. Complete design and begin to qualify In-Flight Termination system required for flight testing. Procure SM-6 BLK IA components, MK 72 Mod 2 Boosters, and integrate Rocket Motor (RM) and Steering Control Sections (SCS) prototypes and MK 72 Mod 2 hardware for test. Develop algorithms, software and autopilot updates for flight testing.					
FY 2022 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 2063 / *SM-6 Blk IB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Complete design efforts started in FY 21, continue development efforts started in FY21, and initiate design verification. Continue ground testing including missile stability frequency response, live battery verification, and electrical and preliminary electromagnetic effects testing. Begin incorporating results from ground testing into model based analytical tools to facilitate design, design validation, and assessment of safety standards compliance sufficient for flight testing. Conduct a Critical Design Review for the All Up Round. Conduct test planning activities for the first Controlled Test Vehicle. Complete the preliminary design of the 21-inch rocket motor design. Conduct static firings and safety tests to verify the design. Conduct a Critical Design Review for the 21-inch rocket motor. Fabricate multiple 21-inch diameter rocket motor prototypes for All-Up-Round ground testing (laboratory bench testing) and begin to fabricate test articles for rocket motor Design Verification Testing. Assemble, integrate and test hardware prototypes of Control Surface Assemblies (CSAs), Steering Control Sections (SCS), Rocket Motors (RM), and Power Conditioning and Telemetry (PC&T) sections. Begin verifying design of the All-Up-Round Thermal Protection System including analytical validation of survivability. Complete design modifications for the MK 29 Mod 1 canisters, fabricate MK29 Mod 1 canister test hardware and begin design verification. Update all associated design and interface specifications as necessary. Continue In-Flight Termination system qualification to support flight testing. Continue procuring SM-6 BLK IA components, MK 72 Mod 2 Boosters, and integrate RM and SCS prototypes and MK 72 Mod 2 with SM-6 BLK IA hardware for test and continue assembly of test articles. Continue development of algorithms, software and autopilot updates to incorporate in advance of land based flight testing. Initiate planning at the Range for a Controlled Test Vehicle demonstration. Initiate acquisition planning including the development of a Test and Evaluation Master Plan and prepare acquisition documentation for a Major Defense Acquisition program. Conduct a Milestone Decision review.					
FY 2022 OCO Plans: N/A					
FY 2021 to FY 2022 Increase/Decrease Statement: In PB22, SM-6 BLK IB program restructured to deliver Initial Operational Capability under a Major Defense Acquisition Program (MDAP) instead of delivering an Initial Capability under 10 USC 2538 authority. The restructure will execute both development of the hardware and mission integration under a consolidated MDAP rather than separate, smaller projects. Starting in FY22, the SM-6 BLK IB Interim Capability Development allocation will merge with the SM-6 BLK IB Mission Integration Development, and Operational Test allocation into the SM-6 BLK IB Development allocation to align the budget with the restructure. The decrease of -$14,802 (between FY21 budget control: $164,262 & FY22 budget control: $149.460)for SM-6 BLK IB Development aligns the budget with the restructured execution plan for the SM-6 Blk IB program. The decrease funds preliminary					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 2063 / *SM-6 Blk IB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
design efforts for procurement of test articles based on those preliminary designs and conduct of testing to verify those preliminary designs. The decrease also aligns with the transition of the development effort from an Accelerated Acquisition program operating under 10 USC 2538 authority to an MDAP.					
Title: Electronics Unit Integration ***Articles:***	0.000 -	0.000 -	22.461 -	0.000 -	22.461 -
FY 2021 Plans: N/A ***FY 2022 Base Plans:*** Initiate long lead activities needed to develop the SM-6 Blk IB capability on the new Electronics Unit for the SM family of missiles. Leverage the SM-6 Blk IA Electronics Unit obsolescence program initiated in FY21 to analyze suitability of the repackaged SM-6 IA guidance section for SM-6 Blk IB capability requirements. Perform studies to define and establish survivability requirements for the new Electronics Unit for the SM-6 Blk IB environment. Procure hardware for test article fabrication and long lead materials for electronics unit testing. Adapt BLK IB mission set algorithms for new electronics unit. Plan software and simulation test equipment for the SM-Blk IB and procure materials to build the test equipment. Conduct shock and vibration testing on the Electronics Unit to the SM-6 Blk IB environments. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The increase of $22.416M for SM-6 BLK IB Electronics Unit (EU) is required to deliver Initial Operational Capability (IOC) in FY27 for the SM-6 BLK IB. This funding initiates materials procurement and algorithm and software development in FY22 to align the new electronics unit configuration with SM-6 Blk IB mission capability development. SM-6 Blk IB development on the Electronics Unit allows commonality with the SM family of missiles for affordability, capability, and efficiency. The SM-6 Blk IB requirements will inform the Electronics unit replacement, support the new Electronics Unit development process, and are integral to the start of analysis, test equipment builds, and long lead materials procurement needed for delivering IOC in FY27.					
Accomplishments/Planned Programs Subtotals	74.565	164.262	171.921	0.000	171.921

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 2063 / *SM-6 Blk IB*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

SM-6 Block IB Acquisition Strategy is in development to initiate SM-6 Blk IB Engineering and Manufacturing Development under a Major Defense Acquisition Program.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 2063 / *SM-6 Blk IB*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Design and Analysis	C/CPFF	JHU/APL : Laurel, MD	6.923	3.506	Nov 2019	2.802	Nov 2020	4.358	Nov 2021	-		4.358	-	-	-
Design and Analysis	WR	NAWC AD : China Lake	0.000	9.764	Nov 2019	2.458	Oct 2020	4.144	Oct 2021	-		4.144	-	-	-
Design and Analysis	WR	NSWC : Indian Head	0.081	0.279	Nov 2019	0.330	Oct 2020	0.337	Oct 2021	-		0.337	-	-	-
Design and Analysis	C/CPFF	Raytheon : Tucson, AZ	10.336	38.987	Nov 2019	57.195	Nov 2020	53.741	Nov 2021	-		53.741	-	-	-
Design and Analysis	C/CPFF	BAE : ROCKVILLE, MD	0.075	0.000	Nov 2019	0.129	Nov 2020	0.300	Oct 2021	-		0.300	-	-	-
Design and Analysis	C/CPFF	GD-OTS : Healsburg, CA	3.985	7.000	Nov 2019	9.872	Nov 2020	5.028	Nov 2021	-		5.028	-	-	-
Design and Analysis	WR	NSWC Dahl : Dahlgren, Va	0.100	0.970	Nov 2019	0.562	Oct 2020	0.573	Oct 2021	-		0.573	-	-	-
Design and Analysis	Various	IWS 3L : Arlington, Va	0.600	3.896	Nov 2019	5.487	Oct 2020	4.193	Nov 2021	-		4.193	-	-	-
Design and Analysis	Various	Various : IWS 1.0	1.000	0.000	Nov 2019	0.625	Nov 2020	0.150	Nov 2021	-		0.150	-	-	-
Design and Analysis	C/CPFF	Corvid : Mooresville, NC	0.000	0.237	Nov 2019	1.500	Nov 2020	1.750	Nov 2021	-		1.750	-	-	-
Design and Analysis	WR	Indian Head : Picatinny	0.000	0.420	Nov 2019	1.311	Oct 2020	1.611	Oct 2021	-		1.611	-	-	-
Design and Analysis	WR	NAWC AD : Techrep	0.229	0.237	Nov 2019	0.000	Oct 2020	0.000	Oct 2021	-		0.000	-	-	-
Design and Analysis	C/CPFF	Aerojet : El Segundo	0.000	7.444	Nov 2019	33.189	Oct 2020	29.598	Nov 2021	-		29.598	-	-	-
Design and Analysis	WR	PHD : Port Hueneme	0.000	0.000		0.000		0.250	Oct 2021	-		0.250	-	-	-
		Subtotal	23.329	72.740		115.460		106.033		-		106.033	-	-	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation	C/CPFF	JHU/APL : Laurel, MD	0.000	0.000		0.000		0.000		-		0.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 2063 / *SM-6 Blk IB*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation	WR	NAWC WD : China Lake	0.000	0.500	Nov 2019	0.000		0.000		-		0.000	-	-	-
Developmental Test and Evaluation	WR	NSWC : Port Hueneme	0.000	0.001	Nov 2019	0.000		0.000		-		0.000	-	-	-
Developmental Test and Evaluation	C/CPFF	Raytheon : Tucson, AZ	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Developmental Test and Evaluation	WR	McAlester : Rock Island	0.000	0.013	Nov 2019	0.000		0.000		-		0.000	-	-	-
Developmental Test and Evaluation	C/CPFF	IWS 3 : Arlington, VA	0.000	0.038	Nov 2019	0.000		0.000		-		0.000	-	-	-
Developmental Test and Evaluation	WR	Pt Mugu : CA	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Developmental Test and Evaluation	WR	Corona : CA	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Developmental Test and Evaluation	WR	PMRF : Hawaii	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Developmental Test and Evaluation	WR	WSMR : White Sands, NM	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Developmental Test and Evaluation	WR	COTF : Norfolk, VA	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Developmental Test and Evaluation	WR	Techrep : China Lake	0.000	0.000		0.489	Oct 2020	0.499	Nov 2021	-		0.499	-	-	-
		Subtotal	0.000	0.552		0.489		0.499		-		0.499	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	WR	WSMR : White Sands	0.000	0.000		0.360	Oct 2020	0.979	Nov 2021	-		0.979	-	-	-
Test & Evaluation	C/BA	JHU/APL : Laurel, MD	0.000	0.000		3.550	Oct 2020	2.121	Nov 2021	-		2.121	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604366N / *Standard Missile Improvements*	Project (Number/Name) 2063 / *SM-6 Blk IB*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	C/BA	NAWC WD : China Lake	0.000	0.000		2.250	Oct 2020	0.496	Nov 2021	-		0.496	-	-	-
Test & Evaluation	C/BA	PHD : Port Hueneme	0.000	0.000		0.025	Oct 2020	0.336	Nov 2021	-		0.336	-	-	-
Test & Evaluation	C/BA	NSMA : Various	0.000	0.000		24.405	Oct 2020	39.511	Nov 2021	-		39.511	-	-	-
Test & Evaluation	C/BA	IWS 3 : Arlington, VA	0.000	0.000		0.050	Oct 2020	0.100	Nov 2021	-		0.100	-	-	-
Test & Evaluation	C/BA	Pt Mugu : CA	0.000	0.000		0.017	Oct 2020	0.050	Nov 2021	-		0.050	-	-	-
Test & Evaluation	C/BA	Corona : CA	0.000	0.000		0.138	Oct 2020	0.191	Nov 2021	-		0.191	-	-	-
Test & Evaluation	C/BA	PMRF : Hawaii	0.000	0.000		0.010	Oct 2020	0.050	Nov 2021	-		0.050	-	-	-
Test & Evaluation	C/BA	COTF : Norfolk, VA	0.000	0.000		0.021	Oct 2020	0.125	Nov 2021	-		0.125	-	-	-
Test & Evaluation	C/BA	Dahlgren : Dahlgren, VA	0.000	0.000		0.150	Oct 2020	0.861	Nov 2021	-		0.861	-	-	-
Test & Evaluation	C/BA	BAE Systems : Fridley, MN	0.000	0.000		8.307	Oct 2020	10.475	Nov 2021	-		10.475	-	-	-
		Subtotal	0.000	0.000		39.283		55.295		-		55.295	-	-	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	VARIOUS : VARIOUS	0.000	1.273	Nov 2019	9.030	Nov 2020	10.094	Nov 2021	-		10.094	-	-	-
		Subtotal	0.000	1.273		9.030		10.094		-		10.094	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.329	74.565		164.262		171.921		-		171.921	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 2063 / *SM-6 Blk IB*

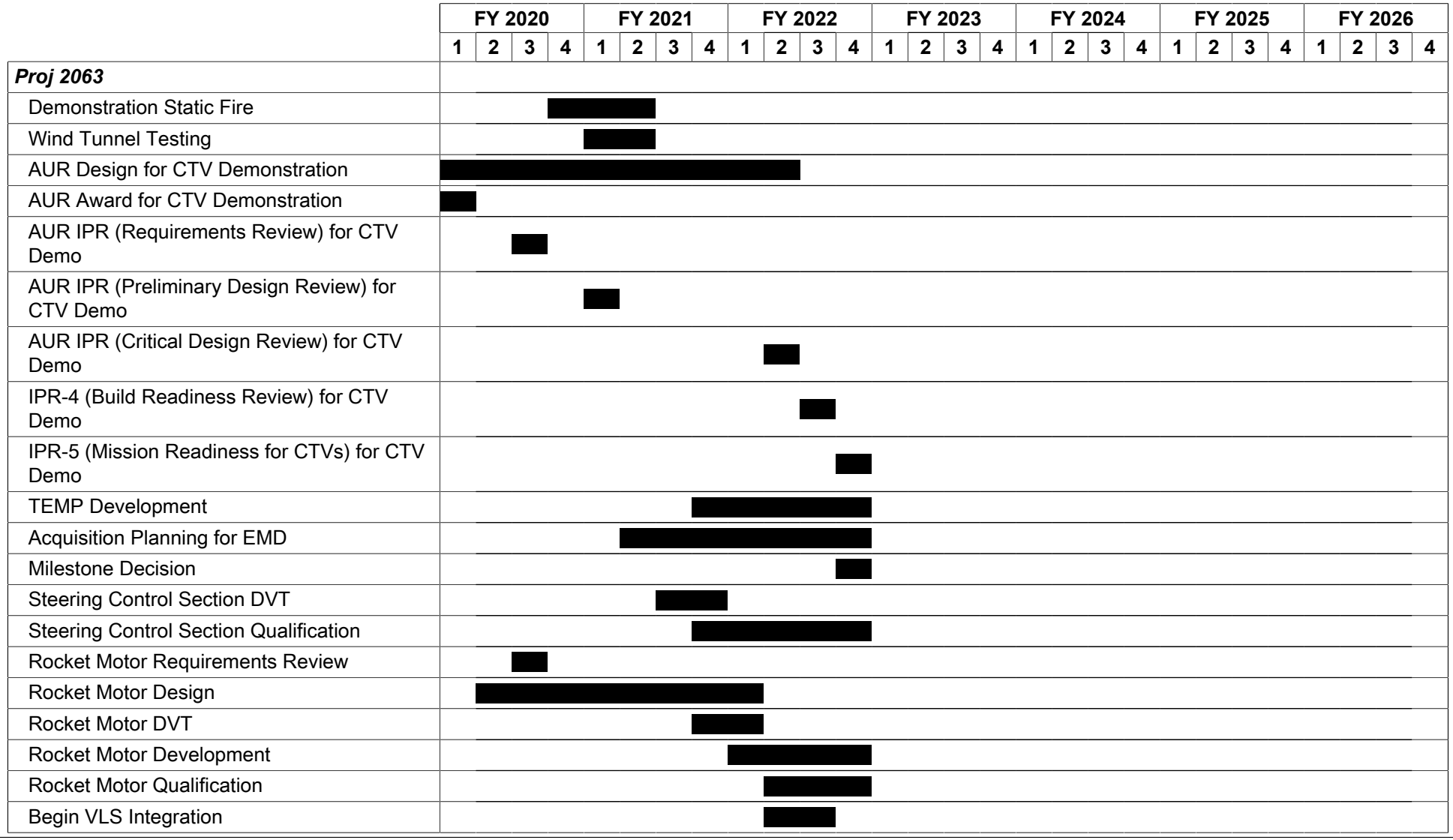

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 2063 / *SM-6 Blk IB*

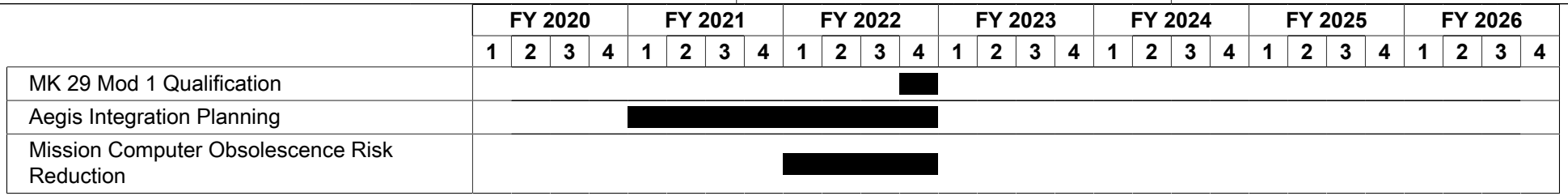

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 2063 / *SM-6 Blk IB*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2063				
Demonstration Static Fire	4	2020	2	2021
Wind Tunnel Testing	1	2021	2	2021
AUR Design for CTV Demonstration	1	2020	2	2022
AUR Award for CTV Demonstration	1	2020	1	2020
AUR IPR (Requirements Review) for CTV Demo	3	2020	3	2020
AUR IPR (Preliminary Design Review) for CTV Demo	1	2021	1	2021
AUR IPR (Critical Design Review) for CTV Demo	2	2022	2	2022
IPR-4 (Build Readiness Review) for CTV Demo	3	2022	3	2022
IPR-5 (Mission Readiness for CTVs) for CTV Demo	4	2022	4	2022
TEMP Development	4	2021	4	2022
Acquisition Planning for EMD	2	2021	4	2022
Milestone Decision	4	2022	4	2022
Steering Control Section DVT	3	2021	4	2021
Steering Control Section Qualification	4	2021	4	2022
Rocket Motor Requirements Review	3	2020	3	2020
Rocket Motor Design	2	2020	1	2022
Rocket Motor DVT	4	2021	1	2022
Rocket Motor Development	1	2022	4	2022
Rocket Motor Qualification	2	2022	4	2022
Begin VLS Integration	2	2022	3	2022
MK 29 Mod 1 Qualification	4	2022	4	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 2063 / *SM-6 Blk IB*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Aegis Integration Planning	1	2021	4	2022
Mission Computer Obsolescence Risk Reduction	1	2022	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604366N / *Standard Missile Improvements*	Project (Number/Name) 3092 / *Standard Missile 6 Program*	

COST ($ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
3092: *Standard Missile 6 Program*	1,428.915	40.239	79.869	124.204	-	124.204	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program leverages existing missile technology and advanced missile technology. It aligns missile technology roadmaps across the services (NAVSEA, NAVAIR, USAF, USMC and USA) and missile variants within the services, taking advantage of the Navy's investment in the AEGIS Weapons System (AWS) and Cooperative Engagement Capability (CEC). This missile will provide an extended range engagement capability to provide the air superiority and the umbrella of protection for joint U.S. forces and allies against the full spectrum of manned-fixed and rotary-wing aircraft, unmanned aerial vehicles, and land attack and anti-ship cruise missiles in flight. This missile contributes to the continuous protection of forward deployed ground maneuver forces as well as theater rear assets supporting mission requirements discussed in the National Security Strategy (NSS), Secretary of Defense National Defense Strategy (NDS), Chairman of the Joint Chiefs' National Military Strategy (NMS), Capstone Concept for Joint Operations (CCJO), Joint Requirements Oversight Council (JROC) Integrated Air and Missile Defense (IAMD) Initial Capability Document (ICD), the JROC IAMD Joint Integrating Concept (JIC), JROC IAMD Operational Concept; the Theater and Air Missile Defense ICD (TAMD MDA-ICD), the Chairman of the Joint Chiefs of Staff Joint IAMD Vision 2020/2030 and the Joint Publication 3-01 Countering Air and Missile Threats; the Navy's Integrated Fire Control Naval Integrating Capability Concept (NIFC-NICC), the JROC Operational Requirements Document (ORD) for SM-6 BLK 1, and the JROC SM-6 Capability Production Document.

SM-6 portion of Joint and Naval Integrated Fire Control (NIFC) is to support the integration, land-based and at-sea test, and analysis in support of the NIFC-CA test and evaluation strategy. NIFC-CA Increment 1 was successfully executed between 2009 and 2015. NIFC-CA Increment 2 commenced in FY 16 and will be tested in FY20 through FY24. It integrates sensor improvements, SM-6 BLK IA, CEC and AWS AEGIS Advanced Capability Build (ACB) 16 into an advanced from the sea (FTS) Kill chain. Efforts include support for the White Sands Missile Range (WSMR) upgrade, Trackex events, Integration Events and Live Fire test at land based and at-sea tests.

Future Capabilities Demonstration project directly supported high priority mission requirements requested by Combatant Commanders by improving the SM-6 Missile's capability. The project is continuing analyses and trade studies to identify future enhancements and expansion of the Future Capability Demonstration mission capabilities for the SM-6 Blk IA missile, and perform the necessary missile software development to support mission capability improvement. Future Capability Demonstrations project line, to include funding and activities, will be incorporated into the System Engineering and Flight Test project line in outyears. Outyear funding for Future Capability Demonstrations will be included in the NIFC project line.

SM-6 System Engineering and Flight Test (SEFT) supports the development of the guidance section software configuration. This includes the research, development, test and evaluation necessary to incorporate the software in production missiles. SM-6 BLK IA funding for AEGIS ACB 16 integration will verify compatibility with the latest Aegis Baseline that will use the full performance of the advanced missile. Supports modifications to the SM-6 and SM-2 Active Missile Variants Flight Instrumentation Kits to C-band and the Enhanced Flight Termination System upgrade. Outyear System Engineering and Flight Test project line will incorporate Future Capability Demonstrations funding and activities.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 3092 / *Standard Missile 6 Program*

STANDARD Missile 6 Electronics Unit funding is for the design, systems engineering, analysis, integration, and test of replacements for obsolete components. This effort is jointly funded with the Missile Defense Agency for a shared approach to obsolescence and improved capability in defense of the sea base. Initial funding provided for the requirements generation, risk reduction/mitigation, and establishment of development facilities necessary for the commencement of the obsolescence project. The Missile Defense Agency was the contracting office for the risk reduction/mitigation and establishment of development facilities which completed in FY20 . The USN development effort began in FY21, continues through FY24 and remains a jointly funded effort with the Missile Defense Agency. This effort will deliver an Engineering Change Proposal in Q3FY24 to continue production of SM-6 Missiles with the Ultra Electronics Unit.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Electronics Unit (EU) Obsolescence-Upgrade	25.542	60.002	70.332	0.000	70.332
Articles:	-	-	-	-	-
FY 2021 Plans: Complete hardware builds for Proof of Design (POD) Electronic Units (EU). Complete Design Margin Verification (DMV) and Design Verification Testing (DVT) on EU POD Hardware. Continue development of tactical software and simulations. Complete the development and build of special test equipment to support developmental testing and qualification. Begin planning of captive flight test campaign with tower testing to characterize performance and refine missile tactical software and simulation. Complete preparation for system level Critical Design Review to be held in OCT '21.					
FY 2022 Base Plans: Conduct system level Critical Design Review (CDR). Begin Proof of Manufacturing (POM) sensor and Electronic Unit (EU) hardware builds and integration of the EU into the Guidance Section. Complete Guidance section builds for four Guidance sections used as the units under test to support electrostatic discharge testing, Guidance Section Design verification Testing, Live Battery Testing, and Guidance section qualification testing. Conduct Guidance Section (GS) Design Verification Testing (DVT) and electrostatic discharge testing and begin GS qualification testing live battery testing and environmental testing. Begin manufacturing assessments and operations support to document the programs current manufacturing readiness level and path to achieve Manufacturing Readiness Level (MRL) 8 in support of transition to production efforts. Complete initial tactical and simulation software release and tower testing to support captive flight test campaign. Conduct Test and Evaluation Working Group activities required for planning and coordinating amongst the range, data collection leads, modeling and simulation engineering team and other organizations for execution of program's captive, ground and sea flight test campaigns.					
FY 2022 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 3092 / *Standard Missile 6 Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Project funding profile increased by $10.033M from FY21 to FY22 to integrate the Ultra Electronics Unit into production flow planning, begin manufacturing readiness assessments and to procure material for seven guidance section builds in FY22 to support future testing.					
Title: SM-6 System Engineering and Flight Test Support (SEFT)	0.000	14.600	49.806	0.000	49.806
Articles:	-	-	-	-	-
FY 2021 Plans: Plan and execute ACB 16 integration testing of the SM-6 BLK IA. Tasks include developing live fire scenarios & test objectives, coordinating missile, ship, target and range assets, telemetry upgrades and evaluating system performance against the test objectives.					
FY 2022 Base Plans: Continue to plan and execute ACB 16 integration testing of the SM-6 BLK IA. Tasks include developing live fire scenarios & test objectives, coordinating missile, ship, target and range assets, and evaluating system performance against the test objectives. Execute live-fire testing concurrently with ship Combat Systems Ship Qualification Trials (CSSQT) in order to verify performance improvement developed by the Software Upgrade Program (SWUP). Modifications to the SM-6 and SM-2 Active Missile Variants and upgrade to enhanced flight termination system. Testing & Evaluation (T&E) activities to support IOC of the DDG 51 Flt III and FFG(X). Supports modifications to the SM-6 and SM-2 Active Missile Variants Flight Instrumentation Kits. Upgrades NSWC Corona and PMRF range telemetry data processing equipment, flight analysis data tools, and secure management /storage, and portable telemetry data collection that are mandatory for future active missile test and evaluation events. Outyear System Engineering and Flight Test (SEFT) project line will incorporate Future Capability Demonstrations funding and activities.					
FY 2022 OCO Plans: N/A					
FY 2021 to FY 2022 Increase/Decrease Statement: The FY22 Funding Request was increased by $35.206M to build the foundation for the Testing & Evaluation (T&E) required to support IOC of the DDG 51 Flt III and FFG(X). The current Flight Instrumentation Kits' capability is insufficient to support the required scenarios for DDG 51 Flt III and FFG(X) OT. Supports procurement and					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
modifications to the SM-6 and SM-2 Active Missile Variants Flight Instrumentation Kits. Funds the necessary hardware procurement to upgrade NSWC Corona and PMRF range telemetry data processing equipment, flight analysis data tools, and secure management/storage, and portable telemetry data collection that are mandatory for future active missile test and evaluation events.					
Title: Naval Integrated Fire Control - Counter Air (NIFC-CA) ***Articles:*** ***FY 2021 Plans:*** Continue supporting increment two (2) System of Systems (SOS) integration and test activities commence work for SM-6 BLK I and IA NIFC-CA related software upgrades. Support test event At-Sea (7) and At-Sea (9) execution/analysis and planning and pre-flight analysis for Live Fire Test (8). ***FY 2022 Base Plans:*** Continue supporting increment two (2) System of Systems (SOS) integration and test activities commence work for SM-6 BLK I and IA NIFC-CA related software upgrades. Support test events At-Sea 8, At Sea 10, and Live Fire Test 8. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Increase of $0.184M is due to Campaigns in FY22 as Increment 3 testing ramps up.	3.057 -	2.847 -	3.031 -	0.000 -	3.031 -
Title: Future Capability Demonstration (FCD) ***Articles:*** ***FY 2021 Plans:*** Execute all remaining tasking required to cut the final Future Capability Demonstration ECP into SM-6 Blk 1A production line. Support Navy doctrine and training commands as they finalize tactical memos and training curricula that support introduction of the Future Capability Demonstration missions into the Fleet. Conduct analysis and trade studies to identify future enhancements and expansion of the Future Capability Demonstration missions. ***FY 2022 Base Plans:*** Continue analyses and trade studies to identify future enhancements and expansion of the Future Capability Demonstration mission capabilities for the SM-6 Blk IA missile. Conduct necessary missile software	11.640 -	2.420 -	1.035 -	0.000 -	1.035 -

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
development to support mission capability improvement and necessary modeling and simulation to support the software development. Investigate future test data collection opportunities, and performance analysis. Future Capability Demonstrations project line, to include funding and activities, will be incorporated into the System Engineering and Flight test project line in outyears. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** -$1.385M from FY21 to FY22 decrease in funding is to complete the incorporation of additional FCD requirements into the FY22 production engineering change proposal.					
Accomplishments/Planned Programs Subtotals	40.239	79.869	124.204	0.000	124.204

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• WPN 2234: *Standard Missile*	489.663	506.250	605.326	-	605.326	-	-	-	-	-	-
• WPN 2234C: *Standard Missile*	96.085	66.716	45.357	-	45.357	-	-	-	-	-	-
• 2234 QTY: *Standard Missile Qty*	125.000	125.000	125.000	-	125.000	-	-	-	-	-	-

Remarks

BLI 2234C is the Advanced Procurement.

D. Acquisition Strategy

SM-6 Acquisition Strategy signed by OSD AT&L 14 March 2012.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Design & Analysis	C/CPFF	RAYTHEON : Tucson, AZ	800.139	3.083	Nov 2019	2.948	Nov 2020	33.730	Nov 2021	-		33.730	-	-	-
Design & Analysis	C/CPFF	JHU/APL : Laurel MD	69.773	2.300	Nov 2019	0.000	Nov 2020	9.402	Nov 2021	-		9.402	-	-	-
Design & Analysis	MIPR	MIT/Lin Lab : Lexington, MA	0.550	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	NAWC : China Lake/ Techrep	13.624	0.270	Nov 2019	0.000	Nov 2020	0.254	Nov 2021	-		0.254	-	-	-
Design & Analysis	WR	NSWC : Dahlgren	12.908	1.080	Nov 2019	0.000	Nov 2020	1.432	Nov 2021	-		1.432	-	-	-
Design & Analysis	WR	NSWC : Indian Head	3.942	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	NSWC : PHD	12.627	0.313	Nov 2019	0.000	Nov 2020	0.161	Nov 2021	-		0.161	-	-	-
Design & Analysis	WR	NSWC : Crane	1.256	0.000	Nov 2019	0.000	Nov 2020	0.000		-		0.000	-	-	-
Design & Analysis	MIPR	JSPO : Eglin AFB	24.049	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	C/CPFF	LOCKHEED Martin : Moorestown, NJ	6.074	0.650	Nov 2019	0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	NSWC : Corona	24.200	1.986	Nov 2019	0.000	Nov 2020	3.015	Nov 2021	-		3.015	-	-	-
Design & Analysis	Reqn	ONR : Arlington, VA	5.320	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	Reqn	NRL : Washington, DC	0.140	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	COMPTEVFOR : Norfolk, VA	2.620	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	CARDEROCK : Philadelphia, PA	4.058	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	NSWC : Pt Mugu	0.613	1.030	Nov 2019	0.000		0.000		-		0.000	-	-	-
Design & Analysis	C/CPFF	BAE : Rockville, MD	6.486	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	MIPR	ARMY : Redstone	0.350	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	NAWCAD : Pax River, MD	3.762	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	C/CPFF	CORVID : Mooresville, NC	14.970	1.000	Nov 2019	0.000	Nov 2020	0.000		-		0.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Design & Analysis	C/CPFF	RNB : Arlington, VA	0.010	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	SPAWAR : Arlington, VA	0.007	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	ARMY : Cecom	0.066	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	C/FP	GENERAL DYNAMICS : Falls Church, VA	1.660	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	VARIOUS : (IWS 1A)	130.356	0.000		0.000	Nov 2020	0.000		-		0.000	-	-	-
Design & Analysis	WR	VARIOUS : (VLS)	25.674	0.350	Nov 2019	0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	NSWC : WSMR	0.200	2.000	Nov 2019	0.000	Nov 2020	0.000		-		0.000	-	-	-
Design & Analysis	WR	PMRF : Hawaii	3.806	0.050	Nov 2019	0.000		0.000		-		0.000	-	-	-
Design & Analysis	WR	DOI : Washington D.C.	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Design & Analysis	C/CPFF	IWS 3A : Arlington, VA	0.000	25.281	Nov 2019	61.942	Nov 2020	71.203	Nov 2021	-		71.203	-	-	-
		Subtotal	1,169.240	39.393		64.890		119.197		-		119.197	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC : Port Hueneme	9.374	0.000	Nov 2019	0.267	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	NSWC : WSMR	33.200	0.000		0.000	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	PMRF : Hawaii	47.601	0.000		0.000	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	NAWC : Pt Mugu	6.066	0.000		0.000	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	C/CPAF	RAYTHEON : Tucson, AZ	52.617	0.000	Nov 2019	0.000		0.000		-		0.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	C/CPFF	JHU/APL : Laurel, MD	19.804	0.000	Nov 2019	0.376	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	NSWC : Corona	16.326	0.000	Nov 2019	2.237	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	NSWC : Dahlgren	3.386	0.000	Nov 2019	0.379	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	VLS : Arlington, VA	2.369	0.000		0.000	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	COMPTEVFOR : Norfolk, Va	2.119	0.000		0.000	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	VARIOUS : (IWS 1A)	4.282	0.000		1.751	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	NSWC : Carderock	2.580	0.000		0.000		0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	NAWC : China Lake	9.618	0.000		0.801	Nov 2020	0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	ONR : Arlington, Va	3.425	0.000		0.000		0.000		-		0.000	-	-	-
Developmental Test & Evaluation	WR	DOI : Washington D.C.	0.545	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	213.312	0.000		5.811		0.000		-		0.000	-	-	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Services	C/CPAF	VARIOUS : Various	43.632	0.816	Nov 2019	4.217	Nov 2020	4.968	Nov 2021	-		4.968	-	-	-
Travel	Various	IWS3 : Arlington, VA	1.601	0.030	Nov 2019	0.040	Nov 2020	0.039	Nov 2021	-		0.039	-	-	-
DAWDF	C/FP	Not Specified : Not Specified	1.130	0.000		0.000		0.000		-		0.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	IWS3 : Arlington, VA	0.000	0.000		4.911	Nov 2020	0.000		-		0.000	-	-	-
		Subtotal	46.363	0.846		9.168		5.007		-		5.007	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,428.915	40.239		79.869		124.204		-		124.204	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
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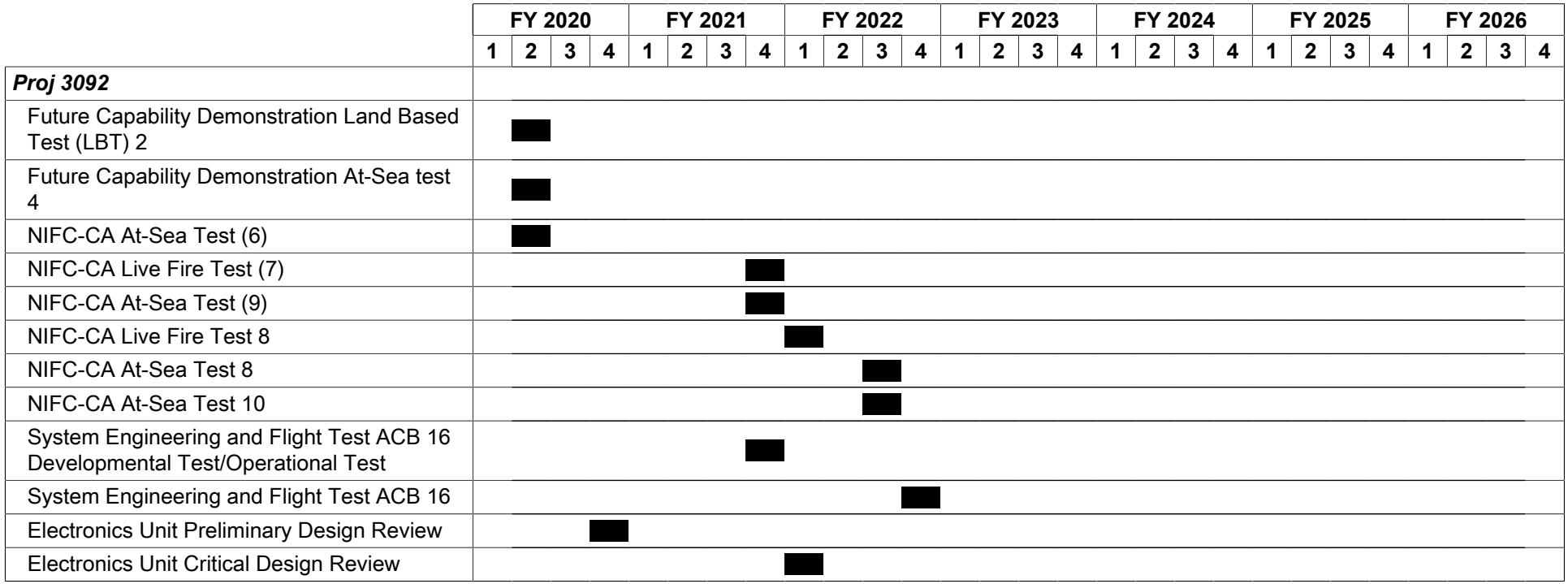

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604366N / *Standard Missile Improvements*	**Project (Number/Name)** 3092 / *Standard Missile 6 Program*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3092				
Future Capability Demonstration Land Based Test (LBT) 2	2	2020	2	2020
Future Capability Demonstration At-Sea test 4	2	2020	2	2020
NIFC-CA At-Sea Test (6)	2	2020	2	2020
NIFC-CA Live Fire Test (7)	4	2021	4	2021
NIFC-CA At-Sea Test (9)	4	2021	4	2021
NIFC-CA Live Fire Test 8	1	2022	1	2022
NIFC-CA At-Sea Test 8	3	2022	3	2022
NIFC-CA At-Sea Test 10	3	2022	3	2022
System Engineering and Flight Test ACB 16 Developmental Test/Operational Test	4	2021	4	2021
System Engineering and Flight Test ACB 16	4	2022	4	2022
Electronics Unit Preliminary Design Review	4	2020	4	2020
Electronics Unit Critical Design Review	1	2022	1	2022

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy			Date: May 2021
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COST ($ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
9999: *Congressional Adds*	24.119	6.753	0.000	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding is for development, testing and evaluation of rocket motor technology integrated for SM-6 through sub-system and system level testing resulting in the development of Technical Data Packages. The effort will develop a low weight, low volume, and high strength 10 inch rocket motor case prototype using carbon nanotube technology. It is desirable that the case prototype also provide lightening protection during flight.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021
Congressional Add: Advanced carbon nanotube materials research	6.753	0.000
FY 2020 Accomplishments: N/A		
FY 2021 Plans: N/A		
Congressional Adds Subtotals	6.753	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Design and Analysis	C/CPFF	China Lake : China Lake, CA	24.119	6.553	Dec 2020	0.000		0.000		-		0.000	-	-	-
Design and Analysis	C/CPFF	JHU/APL : Laurel, Md	0.000	0.200	Mar 2021	0.000		0.000		-		0.000	-	-	-
		Subtotal	24.119	6.753		0.000		0.000		-		0.000	-	-	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	Various : Various	0.000	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	0.000	0.000		0.000		0.000		-		0.000	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	24.119	6.753		0.000		0.000		-		0.000	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
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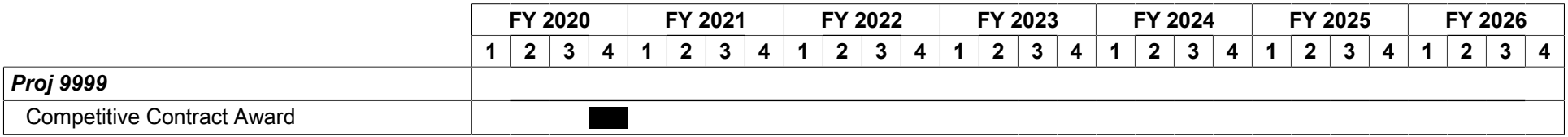

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9999				
Competitive Contract Award	4	2020	4	2020