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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy **Date:** March 2024

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604707N / <i>SEW Architecture/Eng Support</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	60.376	9.835	9.993	8.896	-	8.896	9.197	9.343	9.530	9.732	Continuing	Continuing
2356: <i>Maritime Concept Generation & Development</i>	60.376	9.835	9.993	8.896	-	8.896	9.197	9.343	9.530	9.732	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Maritime Concept Generation & Development (MCGD) project focuses on the generation, development and validation of warfighting concepts, Concept of Operations (CONOPS) and doctrine in order to eliminate war fighting gaps. Navy Warfare Development Center (NWDC) also manages the Fleet Experimentation (FLEX) program (formerly Sea Trial). The FY25 project will execute new experiments in the areas of Countering-C5ISR, C5ISR, Naval Operational Architecture (NOA), Maritime Fires, Unmanned systems, Artificial Intelligence / Machine Learning (AI/ML), Naval integration, and Allied / Partner Nation Integration as well as conduct experiments (war simulations, Modeling & Simulation (M&S), at-sea events) to develop emerging Naval concepts.

B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	10.229	9.993	10.039	-	10.039
Current President's Budget	9.835	9.993	8.896	-	8.896
Total Adjustments	-0.394	0.000	-1.143	-	-1.143
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.394	0.000			
• Program Adjustments	0.000	0.000	-1.143	-	-1.143
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

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Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604707N / SEW Architecture/Eng Support				Project (Number/Name) 2356 / Maritime Concept Generation & Development			
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
2356: <i>Maritime Concept Generation & Development</i>	60.376	9.835	9.993	8.896	-	8.896	9.197	9.343	9.530	9.732	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Maritime Concept Generation and Development (MCGD) funding provides naval warfare subject matter expertise, experiment planning expertise, Modeling and Simulation (M&S) support, and analysis expertise to execute fleet experiments (and the individual experiment initiatives contained within) focused on critical warfighting capabilities and the development of Distributed Military Operations and other emerging Naval concepts.

Typical deliverables for each experimental effort include:

- Experiment control plan
- Data Collection and Analysis Plan (DCAP)
- Experiment Analysis Summary Reference Document
- Experiment Engineering Plan
- Final Experiment Report (with Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities - Policy (DOTMLPF-P) recommendations)
- New/refined doctrine/Tactics, Techniques and Procedures (TTP).

The MCGD project funds four main efforts:

- (1) Provides critical concept development and experimentation manpower, and warfighting subject matter expertise aligned with the Concept Generation/Concept Development (CG/CD) program. The priorities for the CG/CD program are to develop concept of operations and explore near/far-term technological and non-technological solutions to war fighting gaps across all naval warfare areas. The associated experimentation efforts include planning, systems engineering and integration, modeling and simulation support, event execution, data collection, analysis, and assessment for a wide-range of experimentation efforts including the examination of prototypes, tactical development and evaluation, support for Science and Technology (S&T) innovation, and program of record system development; venues such as workshops, seminars, war games, limited objective experiments, limited technical experiments, and live at-sea events are used to execute these experimentation efforts.
- (2) Provides naval warfare subject matter expertise, experiment planning expertise, and analysis expertise to plan, execute, and assess experimentation for the fleets and warfighting development centers (WDC) at the operational and tactical levels. This includes a focus on WDC integration role, maritime command and control (C2), advanced cross-domain warfighting, and maritime operations centers (MOCS)/operational level of war (OLW) lines of operations. Seeks to solve fleet-identified warfighting gaps (referenced within the Integrated Prioritized Capability Lists (IPCL), Urgent Operational Needs Statements (UONS), Fleet Commander's Guidance, etc.). The experimentation and prototyping efforts support the "last tactical mile" of many Navy S&T programs by supporting those programs where the technology is mature enough, but requires evaluation on or by a "fleet asset" - ships, airplanes, submarines, and sailors.
- (3) Provides Modeling and Simulation (M&S) support to Navy experimentation efforts. M&S is used to stimulate decision making during seminar-style and system war gaming experiments and provides the simulated operational environment and capabilities with high-fidelity models such as the Joint Semi-Automated Force (JSAF) program. Additionally, where

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applicable, the Navy Simulation System (NSS) "Monte Carlo" model is also used to give high confidence solutions and outcomes to complex warfighting problems. (4) Develops focused, solution-driven tactics and evaluation through experimentation. This effort is focused on developing near-term doctrine solutions to address specific fleet-identified tactical issues. Maritime Concept Generation and Concept Development products include:

- Concepts (signed by the Chief of Naval Operations (CNO) that influence future funding and technological development)
- Enabling concepts
- Concepts of Operations (CONOPS)
- Final experimentation reports, to include findings, insights, and recommendations and Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities - Policy (DOTMLPF-P) change recommendations and plans for action
- Experiment Analysis Summary Reference Documents
- New/revised doctrinal and Tactics/Techniques/Procedures publications
- White papers (think pieces) intended to generate further discussion within Navy leadership

Specific products are listed in the Accomplishments/Plans section of this exhibit.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Maritime Concept Generation and Development	9.835	9.993	8.896	0.000	8.896
Articles:	-	-	-	-	-
FY 2024 Plans: Critical MCGD analytical and subject matter expertise will support FY24 experiments and focus on materiel and nonmateriel solutions using appropriate experimentation venues including workshops, at-sea events, and war simulations. Alignment with IPLs, KOPs, DMO capability development and with NAVPLAN gap closure plans will drive experimentation efforts. Proposed initiatives will also align to the Fleet Commanders' focus areas and be a part of the Fleet Experimentation Program's continuous approval process. Efforts are planned for the following areas:					
Maritime Fires Maritime Fires experiment initiatives are planned in five (5) venues					
Counter-C5ISR (C-C5ISR) C-C5ISR experiment initiatives are planned in six (6) venues					
C5ISR C5ISR experiment initiatives are planned in four (4) venues					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<p>Naval Operational Architecture (NOA) NOA experiment initiatives are planned in five (5) venues</p> <p>Unmanned Systems (UxS) UxS experiment initiatives are planned in five (5) venues</p> <p>Artificial Intelligence / Machine Learning (AI/ML) AI/ML experiment initiatives are planned in two (2) venues</p> <p>Naval Integration (NI) NI experiment initiatives are planned in four (4) venues</p> <p>Allied / Partner Nation Integration Experiment initiatives are planned in five (5) venues</p> <p>FY 2025 Base Plans: Critical MCGD analytical and subject matter expertise will support FY25 experiments and focus on materiel and nonmateriel solutions using appropriate experimentation venues including workshops, at-sea events, and war simulations. Alignment with IPLs, KOPs, DMO capability development and with NAVPLAN gap closure plans will drive experimentation efforts. Proposed initiatives will align to the Fleet Commanders' focus areas and are part of the Fleet Experimentation Program's continuous approval process. Tentative efforts are planned for the following areas:</p> <p>Maritime Fires Counter-C5ISR (C-C5ISR) C5ISR Naval Operational Architecture (NOA) Unmanned Systems (UxS) Artificial Intelligence / Machine Learning (AI/ML) Naval Integration (NI) Allied / Partner Nation Integration</p> <p>FY 2025 OCO Plans:</p>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
N/A					
<i>FY 2024 to FY 2025 Increase/Decrease Statement:</i> FY25 programmatic reduction to fund higher Department priorities.					
Accomplishments/Planned Programs Subtotals	9.835	9.993	8.896	0.000	8.896

C. Other Program Funding Summary (\$ in Millions)
N/A

Remarks

D. Acquisition Strategy
This funding is used to acquire intellectual capital in emerging conceptual and technical areas through contracts providing expertise in concepts and experiment design, execution and analysis to mitigate fleet-identified current and future warfighting gaps.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy **Date:** March 2024

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Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPFF	Defense Technical Information Center : Ft Belvoir VA	29.476	4.135	Dec 2022	4.333	Dec 2023	4.545	Dec 2024	-		4.545	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	Various	NIWC Atlantic : Charleston, SC	2.734	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	Various	ONR : Washington, DC	1.370	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	Various	NAVSEA : Washington, DC	1.334	0.000		0.000		0.000		-		0.000	0.000	1.334	-
Developmental Test & Evaluation (DT&E)	PO	Naval Underwater Warfare Center : Newport RI	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
Developmental Test & Evaluation (DT&E)	C/CPFF	NAVSUP : Norfolk VA	22.098	5.700	Feb 2023	5.660	Feb 2024	4.351	Feb 2025	-		4.351	0.000	37.809	-
Developmental Test & Evaluation (DT&E)	IA	Center for Naval Analysis : Norfolk, VA	0.154	0.000		0.000		0.000		-		0.000	0.000	0.154	-
Subtotal			57.666	9.835		9.993		8.896		-		8.896	Continuing	Continuing	N/A

Remarks
 The vast majority of the contract costs are for contract labor, primarily on two large multi-award contracts (MAC), one through Defense Technical Information Center (DTIC) MAC and one through Fleet Logistics Center Norfolk. Task orders on the DTIC MAC provide the majority of the Modeling & Simulation support for experimentation and some of the experiment planner support. Task orders on the FLC Norfolk MAC provide the majority of the experiment design, planner, and execution support.

Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	C/FFP	Navy Warfare Development Command : Norfolk, VA	2.710	0.000		0.000		0.000		-		0.000	0.000	2.710	-
Subtotal			2.710	0.000		0.000		0.000		-		0.000	0.000	2.710	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy							Date: March 2024				
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	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals	60.376	9.835	9.993	8.896	-	8.896	Continuing	Continuing	N/A		

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
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

Proj 2356	
Maritime Concept Generation and Development Efforts: Emergent Concepts and Enabling Concepts	
Maritime Concept Generation and Development Efforts: Develop Distributed Maritime Operations Concept / Enabling Concepts	
Maritime Concept Generation and Development Efforts: Develop 21st Century Amphibious Operations Concept	
Maritime Concept Generation and Development Efforts: Develop Integrated Maritime Space Operations Concept	
Experimentation Efforts: Communications, Computers, Cyber, Intelligence, Surveillance, Reconnaissance, and Targeting (C-C5ISR) Experiment Series	
Experimentation Efforts: Naval Operational Architecture/C5ISR Experiment Series	
Experimentation Efforts: Maritime Fires Experiment Series	
Experimentation Efforts: Unmanned Systems Series	
Experimentation Efforts: Naval Integration Series	
Experimentation Efforts: Artificial Intelligence / Machine Learning (AI/ML) Series	

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy **Date:** March 2024

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604707N / SEW Architecture/Eng Support	Project (Number/Name) 2356 / Maritime Concept Generation & Development
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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
Experimentation Efforts: Allied / Partner Nation Integration Series																												
Experimentation Efforts: Fires Limited Objective Experiment																												
Experimentation Efforts: JIFC-EW Limited Objective Experiment																												
Experimentation Efforts: Tactical Edge Targeting Titanium Oynx Limited Objective Experiment																												
Experimentation Efforts: Touchstone Modeling & Simulation																												
Experimentation Efforts: FLEX in Large Scale Exercise (LSE)																												
Experimentation Efforts: FLEX in Fleet Battle Problems (FBPs)																												
Experimentation Efforts: FLEX in Atlantic Thunder																												
Experimentation Efforts: FLEX in BALTOPS																												
Experimentation Efforts: FLEX in Integrated Battle Problems (IBPs)																												
Experimentation Efforts: FLEX in RIMPAC																												
Experimentation Efforts: FLEX in Valiant Shield																												
Experimentation Efforts: FLEX in Steel Knight																												
Experimentation Efforts: Northern Scissors TTX																												
Experimentation Efforts: Carina Limited Objective Experiment																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604707N / SEW Architecture/Eng Support	Project (Number/Name) 2356 / Maritime Concept Generation & Development

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2356				
Maritime Concept Generation and Development Efforts: Emergent Concepts and Enabling Concepts	1	2023	4	2027
Maritime Concept Generation and Development Efforts: Develop Distributed Maritime Operations Concept / Enabling Concepts	1	2023	4	2024
Maritime Concept Generation and Development Efforts: Develop 21st Century Amphibious Operations Concept	1	2023	4	2026
Maritime Concept Generation and Development Efforts: Develop Integrated Maritime Space Operations Concept	1	2023	4	2026
Experimentation Efforts: Communications, Computers, Cyber, Intelligence, Surveillance, Reconnaissance, and Targeting (C-C5ISR) Experiment Series	1	2023	4	2027
Experimentation Efforts: Naval Operational Architecture/C5ISR Experiment Series	1	2023	4	2027
Experimentation Efforts: Maritime Fires Experiment Series	1	2023	4	2027
Experimentation Efforts: Unmanned Systems Series	1	2023	4	2027
Experimentation Efforts: Naval Integration Series	1	2023	4	2027
Experimentation Efforts: Artificial Intelligence / Machine Learning (AI/ML) Series	1	2024	4	2027
Experimentation Efforts: Allied / Partner Nation Integration Series	1	2024	4	2027
Experimentation Efforts: Fires Limited Objective Experiment	4	2023	4	2023
Experimentation Efforts: JIFC-EW Limited Objective Experiment	4	2023	4	2023
Experimentation Efforts: Tactical Edge Targeting Titanium Oynx Limited Objective Experiment	4	2023	4	2023
Experimentation Efforts: Touchstone Modeling & Simulation	4	2023	4	2023
Experimentation Efforts: FLEX in Large Scale Exercise (LSE)	4	2023	4	2027
Experimentation Efforts: FLEX in Fleet Battle Problems (FBPs)	1	2024	4	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy **Date:** March 2024

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604707N / SEW Architecture/Eng Support	Project (Number/Name) 2356 / Maritime Concept Generation & Development
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Experimentation Efforts: FLEX in Atlantic Thunder	1	2024	4	2027
Experimentation Efforts: FLEX in BALTOPS	1	2024	4	2027
Experimentation Efforts: FLEX in Integrated Battle Problems (IBPs)	1	2024	4	2027
Experimentation Efforts: FLEX in RIMPAC	1	2024	4	2027
Experimentation Efforts: FLEX in Valiant Shield	1	2024	4	2027
Experimentation Efforts: FLEX in Steel Knight	1	2024	4	2024
Experimentation Efforts: Northern Scissors TTX	1	2024	4	2024
Experimentation Efforts: Carina Limited Objective Experiment	1	2024	4	2024
Experimentation Efforts: Radiant United Limited Objective Experiment	1	2024	4	2024
Experimentation Efforts: Locust Harvest Limited Objective Experiment	1	2024	4	2024
Experimentation Efforts: BRSE Limited Objective Experiment	1	2024	4	2024
Experimentation Efforts: ONR Technology Innovation Game	1	2024	4	2024
Experimentation Efforts: Buzzer Beater Limited Objective Experiment	1	2024	4	2024