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

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 6: RDT&E Management Support</i>					R-1 Program Element (Number/Name) PE 0605152N / <i>Studies & Analysis Supt - Navy</i>							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	0.000	4.438	3.942	3.908	-	3.908	3.922	4.010	4.087	4.171	Continuing	Continuing
2092: <i>Naval Warfare Studies</i>	0.000	0.768	0.777	0.785	-	0.785	0.790	0.808	0.823	0.840	Continuing	Continuing
2097: <i>Manpower Personnel & Training</i>	0.000	0.472	0.549	0.531	-	0.531	0.501	0.512	0.522	0.533	Continuing	Continuing
3310: <i>Naval Aviation Developmental Planning</i>	0.000	3.198	2.616	2.592	-	2.592	2.631	2.690	2.742	2.798	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program provides analytical support to the Secretary of the Navy and the Chief of Naval Operations as a basis for major policy, planning and acquisition program execution decisions. It supports research and development strategy development and planning. It supports studies in the areas of manpower, personnel, training, and aviation. It also develops analytical tools for evaluating effectiveness of U.S. weapons against potential foreign threat ships and submarines.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RESEARCH, DEVELOPMENT, TEST and EVALUATION MANAGEMENT SUPPORT because it supports efforts directed toward sustaining or modernizing installations or operations required for general research, development, test and evaluation.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020 Base</u>	<u>FY 2020 OCO</u>	<u>FY 2020 Total</u>
Previous President's Budget	3.917	3.942	3.959	-	3.959
Current President's Budget	4.438	3.942	3.908	-	3.908
Total Adjustments	0.521	0.000	-0.051	-	-0.051
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.560	0.000			
• SBIR/STTR Transfer	-0.039	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.051	-	-0.051

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319 / 6					R-1 Program Element (Number/Name) PE 0605152N / Studies & Analysis Supt - Navy				Project (Number/Name) 2092 / Naval Warfare Studies			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
2092: Naval Warfare Studies	0.000	0.768	0.777	0.785	-	0.785	0.790	0.808	0.823	0.840	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This project supports detailed mission, capability, and technical analysis of future naval warfighting requirements. This work provides the analytical basis for integration and prioritization of overall military capability requirements and acquisition programs in support of executing the Naval Capability Development Process and development/delivery of Mission Capability Packages, Naval Capability Packages, and Integrated Strategic Capability Plans for Chief of Naval Operations. The Resource Allocation Model (RAM) is an analytic decision support tool to aid Navy leadership with both investment and divestment programming decisions. This methodology provides an assessment process that fosters informed, understandable, repeatable investment decisions with consistent, pedigreed, and retrievable information. The focus of this work adds fidelity to the system through the inclusion of Mission Technical Baselines and Integrated Capabilities Technical Baselines data to identify program of record integration and interoperability dependencies to inform investment/divestment decisions. It provides leadership and resource sponsors with a starting point for their offset decision process as well as an issue ranking capability. RAM will include linkage of programs to strategic imperatives, programs mapped to warfare areas, program interdependencies annotated, and balance factors that can be adjusted to reflect Navy Leadership Priorities. This effort captures and maps issues/funding adjustments, and providing a system capable of identifying fiscal interdependencies and consideration to risk in order to increase accuracy in calculating programmatic risk.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Resource Allocation Model (RAM) Articles:								0.768	0.777	0.785	0.000	0.785
								-	-	-	-	-
FY 2019 Plans: Continue establishing the Resource Allocation Model to provide an analytic portfolio management methodology to aid Navy leadership with investment decision support. Provide an assessment process that fosters informed, understandable, repeatable investment decisions with consistent, pedigreed, and retrievable information. Assess programs of record and their proposed modifications on their capability to contribute to future warfighting requirements. Develop techniques that optimize the usage of the Warfare Capability Baseline Kill Chain data and enable capability trade-offs based on sound algorithmic or mathematical analysis.												
FY 2020 Base Plans: Continue establishing the Resource Allocation Model to provide an analytic portfolio management methodology to aid Navy leadership with investment decision support. Provide an assessment process that fosters informed, understandable, repeatable investment decisions with consistent, pedigreed, and retrievable information.												

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Appropriation/Budget Activity 1319 / 6		R-1 Program Element (Number/Name) PE 0605152N / <i>Studies & Analysis Supt - Navy</i>		Project (Number/Name) 2092 / <i>Naval Warfare Studies</i>		
<u>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</u>						
		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Assess programs of record and their proposed modifications on their capability to contribute to future warfighting requirements.						
<i>FY 2020 OCO Plans:</i> N/A						
<i>FY 2019 to FY 2020 Increase/Decrease Statement:</i> There is no significant change from FY 2019 and FY 2020.						
Accomplishments/Planned Programs Subtotals		0.768	0.777	0.785	0.000	0.785
<u>C. Other Program Funding Summary (\$ in Millions)</u> N/A						
<u>Remarks</u>						
<u>D. Acquisition Strategy</u> Not applicable.						
<u>E. Performance Metrics</u> The RAM methodology and analysis will be used to assist with the prioritization, planning, and programming of Naval warfare program budgets to achieve interoperable warfighting capability solutions. Identification of capability gaps and seams will be used to inform budgetary decision-making with current fiscal budgetary constraints.						

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Appropriation/Budget Activity 1319 / 6					R-1 Program Element (Number/Name) PE 0605152N / Studies & Analysis Supt - Navy				Project (Number/Name) 2097 / Manpower Personnel & Training			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
2097: Manpower Personnel & Training	0.000	0.472	0.549	0.531	-	0.531	0.501	0.512	0.522	0.533	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Chief of Naval Personnel has a continuing need for studies and analysis of Manpower and Personnel (M&P) policies and programs and critical M&P issues that have Navy-wide implications. This project provides an essential management tool to: (a) assess the effectiveness of existing M&P policies and programs; (b) identify needs for new policies and programs; (c) determine the required manpower and training mix relative to changing demographic, societal and legislative/regulatory actions, and to evolving strategic and geopolitical factors; (d) study the impact of M&P programs on Navy accession, attrition, retention, and performance; and, (e) to develop, validate and/or refine a broad range of M&P forecasting models. The program permits Navy to more effectively utilize Research and Development expertise to respond to emergent M&P issues on a continuing basis. This program is funded under RDT&E operational systems development because it encompasses engineering and development of new end-items prior to production approval decision.

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

	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Manpower Personnel & Training	0.472	0.549	0.531	0.000	0.531
Articles:	5	5	5	-	5
Description: The Chief of Naval Personnel has a continuing need for studies and analysis of Manpower and Personnel (M&P) policies and programs and critical M&P issues that have Navy-wide implications. This project provides an essential management tool to: (a) assess the effectiveness of existing M&P policies and programs; (b) identify needs for new policies and programs; (c) determine the required manpower and training mix relative to changing demographic, societal and legislative/regulatory actions, and to evolving strategic and geopolitical factors; (d) study the impact of M&P programs on Navy accession, attrition, retention, and performance; and, (e) to develop, validate and/or refine a broad range of M&P forecasting models. The program permits Navy to more effectively utilize Research and Development expertise to respond to emergent M&P issues on a continuing basis. This program is funded under RDT&E operational systems development because it encompasses engineering and development of new end-items prior to production approval decision. Analytical support to the Secretary of the Navy and the Chief of Naval Personnel as a basis for major policy, planning, and acquisition program execution decisions. It supports the maturation and implementation of strategy and planning via studies in the areas of manpower, personnel, training, and education.					
FY 2019 Plans:					

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Appropriation/Budget Activity 1319 / 6		R-1 Program Element (Number/Name) PE 0605152N / <i>Studies & Analysis Supt - Navy</i>		Project (Number/Name) 2097 / <i>Manpower Personnel & Training</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
<ul style="list-style-type: none"> - Continue assessing Special and Incentive Pay policies. - Continue assessing Econometric Modeling System and updating elasticity - Continue assessing and evaluating retention, accession and training trade-offs. - Continue assessing economic factors and relationships to MPTE business lines ISO forecasting and responses. - Continue assessing factors, thresholds and mitigation strategies to avoid a Hollow Force. <p><i>FY 2020 Base Plans:</i></p> <ul style="list-style-type: none"> - Continue assessing Special and Incentive Pay policies. - Continue assessing Econometric Modeling System and updating elasticity - Continue assessing and evaluating retention, accession and training trade-offs. - Continue assessing economic factors and relationships to MPTE business lines ISO forecasting and responses. - Continue assessing factors, thresholds and mitigation strategies to avoid a Hollow Force. <p><i>FY 2020 OCO Plans:</i> N/A</p> <p><i>FY 2019 to FY 2020 Increase/Decrease Statement:</i> The decrease from FY 2019 to FY 2020 reflects fewer studies being conducted in FY 2020.</p>					
Accomplishments/Planned Programs Subtotals	0.472	0.549	0.531	0.000	0.531
C. Other Program Funding Summary (\$ in Millions) N/A					
Remarks					
D. Acquisition Strategy N/A					
E. Performance Metrics This PE provides funding to support continuing need for studies and analysis of issues critical to decisions required by the Chief of Naval Personnel and his staff regarding manpower, personnel, training and education policies, and programs that have far-reaching implications to service members and the Navy budget. This PE supports research of both Naval Postgraduate School faculty and students, and in FY10 began the formulation of focused economic research, to include behavioral economics. This focus will provide continuing analysis and research to facilitate the data gathering and synthesis to provide consistent and timely update to economic					

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<p>indicators to use in the numerous models that support management decisions within the MPTE arena that have significant impact on the efficient use of the nearly \$27B Manpower & Personnel, Navy budget. The economic research will consolidate the data necessary to perform elasticity estimations and maintain this data for subsequent estimations. To gather the data necessary to perform such estimations, would conservatively cost more than \$300K on each such occasion. The MPTE enterprise uses dozens of models, most of which require elasticity updates. Consolidating the data repository to support this analysis will result in a cost avoidance of more than \$1M and this does not include any of the actual model revisions.</p>		

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COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
3310: <i>Naval Aviation Developmental Planning</i>	0.000	3.198	2.616	2.592	-	2.592	2.631	2.690	2.742	2.798	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funding supports Naval aviation pre-Milestone B developmental activities to include the conduct and integration of systems engineering activities. This project unit provides information, automated tools, and decision aids necessary to perform acquisition planning in support of warfighter capability requirements. This project unit also supports research, development, and analysis efforts to include various studies, joint requirements analysis, and cost analysis requirements in support of systems engineering activities, analyses of alternatives, and development of the 30-Year Aviation Plan, a Congressionally mandated product. Due to high turnover and end of service life of several Naval aircraft set against increasing threat capabilities, DOD 5000 series mandates documentation of capability requirements and mechanisms to obtain these capabilities. This project unit allows Naval aviation the means to properly identify capability gaps and potential solutions required to maintain maximum warfighting capability realizing (or achieving) reductions to technical risks and overall program costs.

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

	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Naval Aviation Developmental Planning	3.198	2.616	2.592	0.000	2.592
Articles:	-	-	-	-	-
FY 2019 Plans: Continue various studies for training aircraft, FA-18E/F/G, P-8A, MH-60R, MH-60S, and Joint Strike Fighter with integrated engineering, logistics, and manpower requirements. Meet emergent engineering requirements documentation within the air warfare portfolio. Update decision support toolset to facilitate internal air warfare and program office total life-cycle trades, and reduce long-term costs of data repositories, manpower, and computer programs. Fund total life-cycle analysis modeling environment required for multiple anticipated analyses of alternatives on fighter, adversary, and rotary-wing aircraft to reduce total cost of studies. Analyses are required to meet pre-Milestone B, DOD 5000 series mandated activities, as well as timelines mandated by the Congressional requirements for an Aviation Investment Plan.					
FY 2020 Base Plans: Continue various studies for training aircraft, FA-18E/F/G, P-8A, MH-60R, MH-60S, and Joint Strike Fighter with integrated engineering, logistics, and manpower requirements. Meet emergent engineering requirements documentation within the air warfare portfolio. Update decision support toolset to facilitate internal air warfare and program office total life-cycle trades, and reduce long-term costs of data repositories, manpower, and computer programs. Fund total life-cycle analysis modeling environment required for multiple anticipated					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO
<p>analyses of alternatives on fighter, adversary, and rotary-wing aircraft to reduce total cost of studies. Analyses are required to meet pre-Milestone B, DOD 5000 series mandated activities, as well as timelines mandated by the Congressional requirements for an Aviation Investment Plan.</p> <p>FY 2020 OCO Plans: N/A</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement: There is no significant change from FY 2019 to FY 2020.</p>					
Accomplishments/Planned Programs Subtotals		3.198	2.616	2.592	0.000
C. Other Program Funding Summary (\$ in Millions) N/A					
Remarks					
D. Acquisition Strategy N/A					
E. Performance Metrics Produce and deliver 30-Year Aviation Plan (Congressionally mandated product). Studies performed will be used to identify known warfighter capability gaps and support acquisition planning requirements associated with potential solutions. Studies provide coherent and integrated cost and capability data to support long-term planning for Naval Aviation consistent with DOD 5000 series instructions.					