Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy	**Date:** May 2017
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605152N / *Studies & Analysis Supt - Navy*

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	0.000	4.141	3.931	3.917	-	3.917	4.037	4.046	4.097	4.177	Continuing	Continuing
2092: *Naval Warfare Studies*	0.000	0.729	0.683	0.776	-	0.776	0.795	0.816	0.832	0.848	Continuing	Continuing
2097: *Manpower Personnel & Training*	0.000	0.311	0.555	0.472	-	0.472	0.568	0.549	0.518	0.528	Continuing	Continuing
3310: *Naval Aviation Developmental Planning*	0.000	3.101	2.693	2.669	-	2.669	2.674	2.681	2.747	2.801	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.

B. Program Change Summary ($ in Millions)

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	4.011	3.931	4.033	-	4.033
Current President's Budget	4.141	3.931	3.917	-	3.917
Total Adjustments	0.130	0.000	-0.116	-	-0.116
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.190	0.000			
• SBIR/STTR Transfer	-0.059	0.000			
• Program Adjustments	0.000	0.000	-0.110	-	-0.110
• Rate/Misc Adjustments	-0.001	0.000	-0.006	-	-0.006

Change Summary Explanation

Technical: Not applicable.

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy		**Date:** May 2017
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605152N / *Studies & Analysis Supt - Navy*	

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		**Date:** May 2017
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
2092: *Naval Warfare Studies*	0.000	0.729	0.683	0.776	-	0.776	0.795	0.816	0.832	0.848	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 Portfolio Management Methodology used 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. The effort expands on Portfolio Management Decision Support System by capturing and mapping 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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Resource Allocation Model (RAM)	0.729	0.683	0.776	0.000	0.776
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Continue establishing the RAM 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 2017 Plans:*** Continue establishing the RAM 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.					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605152N / *Studies & Analysis Supt - Navy*	**Project (Number/Name)** 2092 / *Naval Warfare Studies*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
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 2018 Base Plans:*** Continue establishing the Resource Allocation Model (RAM) 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 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.729	0.683	0.776	0.000	0.776

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable.

E. Performance Metrics

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.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
2097: *Manpower Personnel & Training*	0.000	0.311	0.555	0.472	-	0.472	0.568	0.549	0.518	0.528	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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Manpower Personnel & Training	0.311	0.555	0.472	0.000	0.472
Articles:	4	5	5	-	5
Description: The FY18 funding request was reduced by -$0.106 million to account for the availability of prior year balances. ***FY 2016 Accomplishments:*** - Assessed Econometric Modeling System and updating elasticities. - Assessed Special and Incentive Pay policies. - Assessed and evaluated retention, accession and training trade-offs. - Assessed economic factors and relationships to MPTE business lines ISO forecasting and responses. ***FY 2017 Plans:*** - Continue assessing Econometric Modeling System and updating elasticities. - Continue assessing Special and Incentive Pay policies. - Continue assessing and evaluating retention, accession and training trade-offs. - Continue assessing economic factors and relationships to MPTE business lines ISO forecasting and responses.					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605152N / *Studies & Analysis Supt - Navy*	**Project (Number/Name)** 2097 / *Manpower Personnel & Training*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
- Resume assessing factors, thresholds and mitigation strategies to avoid a Hollow Force. ***FY 2018 Base Plans:*** - 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. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.311	0.555	0.472	0.000	0.472

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 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.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			**Date:** May 2017
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605152N / *Studies & Analysis Supt - Navy*	**Project (Number/Name)** 3310 / *Naval Aviation Developmental Planning*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3310: *Naval Aviation Developmental Planning*	0.000	3.101	2.693	2.669	-	2.669	2.674	2.681	2.747	2.801	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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Naval Aviation Developmental Planning	3.101	2.693	2.669	0.000	2.669
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Continue various studies for training aircraft, FA-18E/F/G, P-8A, MH-60R, and MH-60S 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 all 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 2017 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					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605152N / *Studies & Analysis Supt - Navy*	**Project (Number/Name)** 3310 / *Naval Aviation Developmental Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
analyses of alternatives on fighter, adversary, and rotary-wing aircraft to reduce total cost of all 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 2018 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 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 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.101	2.693	2.669	0.000	2.669

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.