Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*						**R-1 Program Element (Number/Name)** PE 0308601N *I Modeling & Simulation Support*						
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	39.854	5.038	7.097	7.119	-	7.119	7.291	7.465	7.641	7.794	Continuing	Continuing
2222: *Modeling & Simulation*	39.854	5.038	7.097	7.119	-	7.119	7.291	7.465	7.641	7.794	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element addresses projects under the Navy Modeling and Simulation (M&S) Office. It supports technical and management initiatives directed by Congress, Department of Defense (DoD), Secretary of the Navy (SECNAV), and Chief of Naval Operations (CNO) with the aim of bringing organization, focus, and efficiency to the development and use of M&S throughout the Navy and DoD. It provides a central agency for the formulation and implementation of policy and guidance in M&S, and represents Navy interests in Joint and other Agency initiatives. It funds efforts to define and coordinate the corporate Navy M&S policy and guidance to evolve an interoperable and reusable core M&S capability consistent with the M&S technical framework prescribed by DoD.

Efforts are organized around three product areas:
(1) Core Services: This activity provides essential planning and coordination of M&S efforts with other Services, the Office of Secretary of Defense (OSD), the Joint Staff, and other agencies to develop policies and procedures necessary for M&S standards, visibility, and potential reuse across DoD.
(2) Community Services: This activity provides M&S subject matter expert support embedded in the Navy M&S Communities to recommend implementations for M&S policies, standards, VV&A, and reuse within their Community and to ensure that the wider DON and DoD are aware (visibility) of the M&S products and services, initiatives, processes, and standards.
(3) Community Experiments and Prototypes: This activity conducts experiments and prototypes aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy M&S and investigates Service-unique requirements for standards or guidance to achieve M&S efficiencies.

B. Program Change Summary ($ in Millions)

	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	5.238	7.097	7.119	-	7.119
Current President's Budget	5.038	7.097	7.119	-	7.119
Total Adjustments	-0.200	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.200	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Exhibit R-2, **RDT&E Budget Item Justification:** PB 2020 Navy	**Date:** March 2019
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0308601N *I Modeling & Simulation Support*

Change Summary Explanation

200K reduction in 2018 delays DON M&S Forum tasks to share efforts, best practices and lessons learned.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019	
Appropriation/Budget Activity 1319 / 7				**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*					**Project (Number/Name)** 2222 / *Modeling & Simulation*		

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
2222: *Modeling & Simulation*	39.854	5.038	7.097	7.119	-	7.119	7.291	7.465	7.641	7.794	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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(3) Community Experiments and Prototypes: This activity conducts experiments and prototypes aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy M&S and investigates Service-unique requirements for standards or guidance to achieve M&S efficiencies.

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

	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: CORE SERVICES	0.950	1.032	1.035	0.000	1.035
Articles:	-	-	-	-	-

Description: This activity provides essential planning and coordination of M&S efforts with other Services, the Office of Secretary of Defense (OSD), the Joint Staff, and other agencies to develop policies and procedures necessary for M&S visibility and potential reuse across DoD. It provides updates to the Navy M&S website, M&S Master Plan, and M&S Investment Strategy. This activity supports development of common services, tools, and databases to ensure the integration and connectivity of M&S products employed in Naval assessments, training, acquisition, and among operational communities. It manages and maintains the Navy M&S Information Service (NMSIS), the central Naval M&S information resource to support informed M&S investment decision making across DON. It implements and manages the Modeling and Simulation (M&S) Quality Assurance (VV&A) process and guidelines for implementing for modeling, simulation, and data. It

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019		
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*	**Project (Number/Name)** 2222 / *Modeling & Simulation*		

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
reviews both new and legacy M&S VV&A plans and reports and develops and maintains the Naval M&S VV&A repository. It establishes and implements a VV&A training curriculum for developers and Accreditation Agents. ***FY 2019 Plans:*** - Promote consistent application of M&S "Best Practices" and associated technologies to improve support across the DON Enterprise. - Review and Update the Verification, Validation and Accreditation (VV&A) policy and guidance. - Educate the M&S workforce on use of M&S to support efficient and interoperable RDT&E. - Provide VV&A, Standards and M&S support to programs, PEOs and other DON activities. ***FY 2020 Base Plans:*** - Promote consistent application of M&S "Best Practices" and associated technologies to improve support across the DON Enterprise. - Review and Update the Verification, Validation and Accreditation (VV&A) policy and guidance. - Educate the M&S workforce on use of M&S to support efficient and interoperable RDT&E. - Provide VV&A, Standards and M&S support to programs, PEOs and other DON activities. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** There is no significant change from FY 2019 to FY 2020.					
Title: COMMUNITY SERVICES	1.258	1.737	1.700	0.000	1.700
Articles:	-	-	-	-	-
Description: This activity provides M&S subject matter expert support embedded in the Navy M&S Communities to recommend implementations for M&S policies and standards within their Community and to ensure that the wider DON is aware of the M&S products and services, initiatives, processes, and standards (visibility). It promotes M&S reuse through cooperative Community M&S activities which identify and prioritize M&S capability requirements between and across Communities. It also provides an M&S degree program through the Naval Postgraduate School (NPS), Modeling Virtual Environments and Simulation (MOVES) curriculum which qualifies officers to fill 6202-P coded billets. Financial support for thesis and dissertation efforts done by the students is covered by this funding. Topics are broad M&S topics of concern which are prioritized based on how they meet the requirements across, between and within the M&S Communities.					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*	**Project (Number/Name)** 2222 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2019 Plans: - Develop open standards and architectures for M&S Communities' use which will foster Virtual Environments and M&S Enterprise Solutions. - Consolidate investment requirements of the M&S Communities to identify common or similar gaps and develop common solutions. - Develop DON Officer M&S postgraduate Knowledge requirements and submit to the M&S program at Naval Postgraduate School. - Fund DON M&S Forum tasks to share M&S efforts, Best Practices, and lessons learned. - Coordinate M&S workforce education across DON. - Train and educate workforce in efficient use of Live-Virtual-Constructive environments and VV&A of large-scale complex simulations. **FY 2020 Base Plans:** - Develop open standards and architectures for M&S Communities' use which will foster Virtual Environments and M&S Enterprise Solutions. - Consolidate investment requirements of the M&S Communities to identify common or similar gaps and develop common solutions. - Develop DON Officer M&S postgraduate Knowledge requirements and submit to the M&S program at Naval Postgraduate School. - Fund DON M&S Forum tasks to share M&S efforts, Best Practices, and lessons learned. - Coordinate M&S workforce education across DON. - Train and educate workforce in efficient use of Live-Virtual-Constructive environments and VV&A of large-scale complex simulations. **FY 2020 OCO Plans:** N/A **FY 2019 to FY 2020 Increase/Decrease Statement:** There is no significant change from FY 2019 to FY 2020.					
Title: COMMUNITY EXPERIMENTS and PROTOTYPES	2.830	4.328	4.384	0.000	4.384
Articles:	-	-	-	-	-
Description: This activity conducts experiments and prototypes aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy M&S, and investigate Service-unique					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*	**Project (Number/Name)** 2222 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total

requirements for standards or guidance. Individual efforts focus on developing or evaluating approaches to optimize training, assessments and acquisition functional, mission objectives through more efficient development and use of M&S. This activity develops methodologies and standards that will result in model and data reusability and interoperability through the formulation of a technical framework. These standards support the full range of architecture and engineering design requirements across the Navy.

This activity also supports Fleet exercises and experiments through the application of distributed simulations across a wide variety of warfighting and supporting communities. Specifically, it develops and integrates appropriate M&S into Fleet Synthetic Training (FST), and develops simulation efforts to test and evolve the standards for models, interfaces, and data. It supports development of tools necessary to enable the seamless access and use of operationally relevant M&S products to support Navy training, warfare assessments and acquisition requirements.

FY 2019 Plans:
- Advance and efficiently integrate leading edge M&S capabilities in response to complex emerging threats and future warfighting environments.
- Provide a comprehensive set of M&S capabilities and tools to support analysis, engineering, prototyping , testing, experimentation, and training to assess and address mission capability gaps and enhance interoperability.
- Establish enterprise open architectures and standards.
- Identify core models and simulations requiring integration.
- Improve M&S networking environments to ensure labs and facilities are persistently connectable.
- Validate scenario, simulation, and threat environments that can be reused across domains and throughout the program life-cycles.
- Initiate development of a Common M&S Environment
- Development of standards, architectures and open interfaces will add a new focus on integrating Live Navy Aircraft/Ship/Subs/Networks with Virtual simulations and Constructive models as well cyber effects in the battlespace.
- Develop M&S modules in the Naval Integrated Capabilities database that will capture current DON Core Models, Simulations, and Data. Create an accessible repository of models, standards, relevant guidance and policy that will drive down cost. Develop a technical plan for incorporation of the Architecture Management Integration Environment and persistent connectivity across Navy M&S capabilities that will enable reuse and improved response time for LVC events.

Exhibit R-2A, **RDT&E Project Justification:** PB 2020 Navy		**Date:** March 2019		
Appropriation/Budget Activity 1319 *I* 7	**R-1 Program Element (Number/Name)** PE 0308601N *I Modeling & Simulation Support*	**Project (Number/Name)** 2222 *I Modeling & Simulation*		

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
- Develop reusable M&S technologies in FY19 will add the integration of the Complex threat models (ITASE, DIADs, NGTS and TMAP models) in partnership with Intelligence Centers to create a high fidelity agile threat environment reusable across programs, domains (Air, Sea, Surface, Subsurface) and communities (Analysis, Acquisition, Training and Experimentation). -Experiments, model development efforts and simulation prototypes will include cyber effects modeling, virtualization methodologies for complex tactical code and improved visualization/virtual reality to support next generation M&S supporting emergent Naval warfighting requirements. *FY 2020 Base Plans:* - Advance and efficiently integrate leading edge M&S capabilities in response to complex emerging threats and future warfighting environments. - Provide a comprehensive set of M&S capabilities and tools to support analysis, engineering, prototyping , testing, experimentation, and training to assess and address mission capability gaps and enhance interoperability. - Establish enterprise open architectures and standards. - Identify core models and simulations requiring integration. - Improve M&S networking environments to ensure labs and facilities are persistently connectable. - Validate scenario, simulation, and threat environments that can be reused across domains and throughout the program life-cycles. - Initiate development of a Common M&S Environment - Development of standards, architectures and open interfaces will add a new focus on integrating Live Navy Aircraft/Ship/Subs/Networks with Virtual simulations and Constructive models as well cyber effects in the battlespace. - Develop M&S modules in the Naval Integrated Capabilities database that will capture current DON Core Models, Simulations, and Data. Create an accessible repository of models, standards, relevant guidance and policy that will drive down cost. Develop a technical plan for incorporation of the Architecture Management Integration Environment and persistent connectivity across Navy M&S capabilities that will enable reuse and improved response time for LVC events. - Develop reusable M&S technologies in FY20 will add the integration of the Complex threat models (ITASE, DIADs, NGTS and TMAP models) in partnership with Intelligence Centers to create a high fidelity agile threat environment reusable across programs, domains (Air, Sea, Surface, Subsurface) and communities (Analysis, Acquisition, Training and Experimentation).					

Exhibit R-2A, **RDT&E Project Justification:** PB 2020 Navy		**Date:** March 2019
Appropriation/Budget Activity 1319 *I* 7	**R-1 Program Element (Number/Name)** PE 0308601N *I Modeling & Simulation Support*	**Project (Number/Name)** 2222 *I Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
-Experiments, model development efforts and simulation prototypes will include cyber effects modeling, virtualization methodologies for complex tactical code and improved visualization/virtual reality to support next generation M&S supporting emergent Naval warfighting requirements. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** There is no significant change from FY 2019 to FY 2020.					
Accomplishments/Planned Programs Subtotals	5.038	7.097	7.119	0.000	7.119

C. Other Program Funding Summary ($ in Millions)

 N/A

Remarks

D. Acquisition Strategy

 This is a non-ACAT program. The focus of the Navy Modeling and Simulation (M&S) Office is to facilitate and enable the efficient use of M&S by minimizing duplication of M&S efforts and maximize the reuse of M&S and data.

E. Performance Metrics

 This program supports efforts to define, develop, and utilize M&S technologies, standards and techniques in DON and joint programs across a wide range of disciplines and technical arenas. As such, performance metrics are specific to individual projects initiated under this program element. Representative examples of performance criteria for M&S support include the following: VV&A of deployed M&S systems to support Fleet and Force missions and assessments; degree of composability and adaptability of system architectures employed M&S systems; ability of M&S systems to replicate and permit recreation of force or system interactions that otherwise would be performed by more labor-intensive or expensive personnel, forces, or elements; degree to which M&S frameworks would permit rapid integration and employment of analytic capabilities for the analysis and documentationof warfighter missions, weapons systems or Tactics, Techniques and Procedures (TT&P); and ability od a specific M&S technology or technique to meet the requirements specified in an individual project supported by this program.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy													Date: March 2019	
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0308601N / Modeling & Simulation Support						Project (Number/Name) 2222 / Modeling & Simulation		

Product Development ($ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
DoD Support	WR	SPAWAR : Charleston, SC	0.383	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
NMSO Director	WR	SPAWAR : Charleston, SC	1.825	0.282	Jan 2018	0.299	Feb 2019	0.300	Jan 2020	-		0.300	0.000	2.706	-
NMSO Data Archiving Effort	WR	NAVAIR : Pax River, MD	0.503	0.000		0.000		0.000		-		0.000	0.000	0.503	-
DREN Connectivity	WR	SPAWAR : Charleston, SC	0.043	0.000		0.000		0.000		-		0.000	0.000	0.043	-
M & S Data Lead	WR	SPAWAR : Charleston, SC	0.740	0.000		0.000		0.000		-		0.000	0.000	0.740	-
NMSIS Web Presence	WR	SPAWAR : Charleston, SC	0.896	0.000		0.000		0.000		-		0.000	0.000	0.896	-
VV&A Standards & Support	WR	NAVAIR : Pax River	1.567	0.251	Mar 2018	0.266	Mar 2019	0.270	Mar 2020	-		0.270	0.000	2.354	-
Plans & Policies	WR	SPAWAR : Charleston, SC	1.868	0.400	Oct 2017	0.466	Jan 2019	0.470	Oct 2019	-		0.470	0.000	3.204	-
DON Mission Level Gap Analysis	WR	NAVAIR : Pax River, MD	1.100	0.000		0.000		0.000		-		0.000	0.000	1.100	-
M&S Interopeperability Initiative	WR	NAVAIR : Pax River, MD	0.950	0.000		0.000		0.000		-		0.000	0.000	0.950	-
M&S Interopeperability Initiative	WR	SPAWAR : Charleston, SC	0.649	0.000		0.000		0.000		-		0.000	0.000	0.649	-
Navy Training Test Harness	WR	NAWC TSD : Orlando, FL	0.375	0.000		0.000		0.000		-		0.000	0.000	0.375	-
CSP for NTI	WR	NAWC TSD : Olando, FL	0.247	0.000		0.000		0.000		-		0.000	0.000	0.247	-
Navy STORM	MIPR	NAWC : Pax River, MD	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
USMC STORM	MIPR	USAF : Triangle, VA	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
M&S Services	WR	SPAWAR : Charleston, SC	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy													Date: March 2019	
Appropriation/Budget Activity 1319 / 7							**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*					**Project (Number/Name)** 2222 / *Modeling & Simulation*		

Product Development ($ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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**
Data Assistant	WR	SPAWAR : Charleston, SC	0.918	0.000		0.000		0.000		-		0.000	0.000	0.918	-
Navy VV&A Lead	WR	NAVAIR : Pax River, MD	0.428	0.000		0.000		0.000		-		0.000	0.000	0.428	-
Enterprise Level SBD M&S Components	WR	Various Warfare Centers : Not Specified	0.814	0.494	Oct 2017	0.865	Jan 2019	0.700	Oct 2019	-		0.700	0.000	2.873	-
LDUVV SBD Implementation Net-Centric Systems Test	WR	Various Warfare Centers : Not Specified	0.430	0.000		0.000		0.000		-		0.000	0.000	0.430	-
Net-Centric Systems Test Evaluation Capability Module -NECM	WR	NAVAIR : Pax River, MD	0.142	0.150	Oct 2017	0.150	Feb 2019	0.160	Oct 2019	-		0.160	0.000	0.602	-
Common Development Environment	WR	NAVAIR : Pax River, MD	0.519	0.495	Oct 2017	0.731	Jan 2019	0.735	Oct 2019	-		0.735	0.000	2.480	-
Architecture Framework	WR	NAVAIR : Pax River, MD	0.200	0.212	Oct 2017	0.212	Jan 2019	0.215	Oct 2019	-		0.215	0.000	0.839	-
MBSE SYSML Reference Architecture Standard	WR	Various Wafare Centers : Not Specified	0.000	0.212	Oct 2017	0.212	Feb 2019	0.215	Oct 2019	-		0.215	0.000	0.639	-
AMIE - Architecture Management Integration Environment	WR	NAVAIR : Pax River, MD	2.461	0.205	Feb 2018	0.200	Feb 2019	0.210	Feb 2020	-		0.210	0.000	3.076	-
M&S Integration Analysis	WR	Various Warfare Centers : Not Specified	0.000	0.139	Oct 2017	0.159	Jan 2019	0.165	Oct 2019	-		0.165	0.000	0.463	-
Common Development Enviroment Integration	WR	Various Warfare Centers : Not Specified	0.000	0.000		0.108	Jan 2019	0.108	Oct 2019	-		0.108	0.000	0.216	-
Architecture Integration	WR	Various Warfare Centers : Not Specified	0.000	0.318	Oct 2017	0.742	Feb 2019	0.750	Oct 2019	-		0.750	0.000	1.810	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*	**Project (Number/Name)** 2222 / *Modeling & Simulation*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NAVAL - LIFT	WR	Various Warfare Centers : Not Specified	0.000	0.212	Oct 2017	0.367	Feb 2019	0.370	Oct 2019	-		0.370	0.000	0.949	-
M&S Visulation	WR	Various Warfare Centers : Not Specified	0.000	0.212	Oct 2017	0.318	Feb 2019	0.320	Oct 2019	-		0.320	0.000	0.850	-
Subtotal			18.058	3.582		5.095		4.988		-		4.988	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RDA POC	WR	NAVAIR : Pax River, MD	1.538	0.308	Jan 2018	0.380	Jan 2019	0.396	Jan 2020	-		0.396	0.000	2.622	-
RDA IDS (#1&3)	WR	Various Warfare Centers : Not Specified	2.063	0.227	Jan 2018	0.238	Feb 2019	0.240	Jan 2020	-		0.240	0.000	2.768	-
Training IDS (#1)	WR	Various Warfare Centers : Not Specified	1.615	0.208	Mar 2018	0.246	Mar 2019	0.265	Mar 2020	-		0.265	0.000	2.334	-
Training IDS (#2)	WR	SPAWAR : Charleston, SC	0.951	0.000		0.000		0.000		-		0.000	0.000	0.951	-
Analysis IDS (#1)	WR	SPAWAR : Charleston, SC	0.000	0.000		0.233	Mar 2019	0.250	Mar 2020	-		0.250	0.000	0.483	-
Analysis IDS (#2)	WR	SPAWAR : Charleston, SC	0.058	0.000		0.000		0.000		-		0.000	0.000	0.058	-
IDS Training and Coordination	WR	SPAWAR : Charleston, SC	0.044	0.000		0.000		0.000		-		0.000	0.000	0.044	-
USMC IDS	WR	MCCDC : Quantico, VA	0.670	0.000		0.000		0.000		-		0.000	0.000	0.670	-
MOVES	WR	NPS : Monterrey, CA	4.274	0.314	Jan 2018	0.318	Feb 2019	0.330	Jan 2020	-		0.330	0.000	5.236	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0308601N / Modeling & Simulation Support	Project (Number/Name) 2222 / Modeling & Simulation

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
RDA M&S Forum	WR	NAVAIR : Pax River, MD	2.364	0.174	Jan 2018	0.173	Feb 2019	0.195	Jan 2020	-		0.195	0.000	2.906	-
NMSO Technical Support	WR	SPAWAR : Charleston, SC	0.483	0.000		0.000		0.000		-		0.000	0.000	0.483	-
Simulated Shipboard FMVS	WR	NWDC : Norfolk, VA	0.365	0.000		0.000		0.000		-		0.000	0.000	0.365	-
M&S Officer Postgraduate Ed	WR	SPAWAR : SSC-LANT	0.852	0.000		0.000		0.000		-		0.000	0.000	0.852	-
M&S Workforce Coordinator	WR	SPAWAR : SSC-PAX	0.000	0.000		0.149	Jan 2019	0.155	Oct 2019	-		0.155	0.000	0.304	-
		Subtotal	15.277	1.231		1.737		1.831		-		1.831	0.000	20.076	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Standard Interfaces for Virtual World	WR	NAVAIR : Pax River, MD	2.502	0.225	Feb 2018	0.265	Feb 2019	0.300	Feb 2020	-		0.300	0.000	3.292	-
Semantic and Structural Metedata Schema	WR	NAVAIR : Pax River, MD	0.562	0.000		0.000		0.000		-		0.000	0.000	0.562	-
Semantic and Structural Metedata Schema	WR	SPAWAR : Charleston, SC	0.289	0.000		0.000		0.000		-		0.000	0.000	0.289	-
Tactical Operational Software Environment (TOSEE)	WR	NAVAIR : TSD, Orlando	0.650	0.000		0.000		0.000		-		0.000	0.000	0.650	-
Cross Cultural Competence in OPS Environment	WR	NAVAIR : TSD, Orlando	0.350	0.000		0.000		0.000		-		0.000	0.000	0.350	-
Framework for Assessing Cost and Technology (FACT)	WR	MCCDC : Quantico, VA	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-

| **Exhibit R-3**, **RDT&E Project Cost Analysis:** PB 2020 Navy | | | **Date:** March 2019 |

| **Appropriation/Budget Activity** 1319 / 7 | **R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support* | **Project (Number/Name)** 2222 / *Modeling & Simulation* |

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Intergrated Air/Missle Defense IAMD	WR	NAVAIR : Pax River, MD	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Measuring Immersion Training	WR	MCCDC : Quantico, VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
VVA of Real Time Propagation Loss Model	WR	ONR : Arlington, VA	0.588	0.000		0.000		0.000		-		0.000	0.000	0.588	-
Navy M&S Education Program	WR	NAVAIR : Pax River, MD	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Sensor Federate	WR	ONR : Pax River, MD	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Contracting Language for M&S	WR	NAVAIR : Pax River, MD	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
VCE for CPD&T	MIPR	WHS : Arlington, VA	0.300	0.000		0.000		0.000		-		0.000	0.000	0.300	-
Navy VV&A Lead	WR	NAVAIR : Pax River, MD	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
LVC Training Enviroment Tech Advisor	WR	NAVSEA JHU : Wash. DC	0.567	0.000		0.000		0.000		-		0.000	0.000	0.567	-
Human Anatomy Motion Tracking & Display	WR	MARCORSYSCOM : Arlington, VA	0.091	0.000		0.000		0.000		-		0.000	0.000	0.091	-
CapabilityModule Enhancement	WR	NAVAIR : Pax River	0.120	0.000		0.000		0.000		-		0.000	0.000	0.120	-
Subtotal			6.519	0.225		0.265		0.300		-		0.300	0.000	7.309	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.854	5.038		7.097		7.119		-		7.119	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		**Date:** March 2019
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*	**Project (Number/Name)** 2222 / *Modeling & Simulation*

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Exhibit R-4A, **RDT&E Schedule Details:** PB 2020 Navy				**Date:** March 2019
Appropriation/Budget Activity 1319 **/** 7		**R-1 Program Element (Number/Name)** PE 0308601N **/** *Modeling & Simulation Support*	**Project (Number/Name)** 2222 **/** *Modeling & Simulation*	

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2222				
Incorporate Best Practices for Contracting M&S in DON	1	2018	4	2018
Publish M&S Contracting Best Practices Guide	1	2018	4	2018
Change Culture through Education, Outreach and Training	1	2018	4	2019
Host Summit for Face to Face Workshop on Issues and Reuse	1	2018	4	2019
Incorporate Learning courses in SYSCOM Workforce Education	1	2018	4	2018
Coordinate across DON and other Services/DoD to develop an M&S Support Plan	1	2018	4	2018
Establish draft MSSP Policy among the Services/DoD	1	2018	4	2018
Draft a Common Digital Environment	1	2018	4	2024
Coordinate quarterly Fleet Training Integration Panels	1	2018	4	2024
Plan Quarterly Fleet Training Requirements Management Group	1	2018	4	2024
Conduct Forums across all the Communities	1	2018	4	2024
JBUS AIME Integration to fix future LVC training integration issues	1	2018	4	2018
Aegis, Development Environment_AIME integration	1	2018	4	2018
Identify NR&DE capabilities for AMIE integration and conduct integration	1	2018	4	2020
Develop reference architecture and implementation for a common M&S engineering frameworks	1	2018	4	2024
Develop and deploy a Virtual Collaborative Environment in response to Enterprise Requirements	1	2018	4	2024
Identify and integrate MBSE tools and best practices	1	2018	4	2024
Update Enterprise level Naval Models and Simulations to ensure accurate operational representation and increased validity	1	2018	4	2024

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