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 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604378N *I Nav Integrated Fire Control-Counter Air Sys Eng*

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	214.445	24.801	33.429	33.379	-	33.379	35.846	35.116	34.835	35.534	Continuing	Continuing
3159: *Naval Integrated Fire Control-Counter Air SE&I*	214.445	24.801	33.429	24.379	-	24.379	26.846	26.116	25.835	26.354	Continuing	Continuing
3242: *NIFC-CA Supported by Airborne Platforms*	0.000	0.000	0.000	9.000	-	9.000	9.000	9.000	9.000	9.180	Continuing	Continuing

A. Mission Description and Budget Item Justification

The FY 2020 funding request was reduced by $2.000 million to account for the availability of prior year execution balances.

3159 Naval Integrated Fire Control (NIFC) Systems Engineering Integration and Test (SEI&T) project is a systems engineering effort to extend the Naval Integrated Air and Missile Defense battlespace out to the maximum kinematic range of our weapons for the air, surface, and strike warfare missions. This includes targets beyond the detection range of the shooter. The NIFC project exploits capabilities inherent in existing systems, optimizes current and emerging technologies in component system upgrades, integrates them together, and performs kill chain tests, forming an interoperable System of Systems (SoS) to maximize future defense capabilities. As directed by OPNAV, the project is focused on SEI&T efforts to integrate the From The Sea (FTS) family of kill chains which includes the E-2D Advanced Hawkeye, Cooperative Engagement Capability (CEC), AEGIS, and SM-6 missile along with other networks and sensors The From the Air (FTA) family of kill chains consisting of surveillance platforms, tactical aircraft, data links, and air-launched weapons. This PE will support efforts including system definition and architecture development, performance prediction, performance assessment, system test and risk reduction efforts, system analysis, modeling and simulation, and capability demonstrations for the FTS and FTA families of kill chains. The project also facilitates the development of the concept of operations with the warfighter to maximize effectiveness when deployed with the Fleet.

3242 Naval Integrated Fire Control (NIFC) From the Air (FTA) Systems Engineering Integration and Test (SEI&T) project is a systems engineering effort to integrate NIFC FTA capabilities within "Pillar Programs" (F/A-18 & EA-18G, E-2D, F-35, Link-16 and Tactical Targeting Network Technology Data Links, and AIM-120 and AIM-9X weapons). Based on the advancing threat, there remains an imperative to improve lethality, survivability and interoperability by extending the battlespace out to the maximum kinematic range of our weapons for the air, surface, and strike warfare missions. The NIFC FTA project leverages capabilities inherent in existing systems, optimizes current and emerging technologies in platform system upgrades, and integrates them together to form interoperable System of Systems (SoS) to maximize offensive and defensive FTA integrated capabilities. As directed from OPNAV, the project is focused on development of Air Warfare, Surface Warfare, and Strike Warfare FTA effects chains. This PU will support efforts that include decomposing SoS requirements into Mission Technical Baselines (MTBs) and Integrated Capability Technical Baselines (ICTBs) for requirement allocation to Pillar Programs. Additionally, this PU will support NIFC pillar program coordination to provide performance predictions, performance assessments, and SoS risk reduction activities through Live, Virtual, and Constructive (LVC) events, SoS exercises, and development of Requirements Test and Verification Matrices (RTVMs) to support Developmental and Operational Test for the individual platforms. In lieu of a traditional Test and Evaluation Master Plan (TEMP), NIFC FTA test strategies will be developed to identify resources required to evaluate NIFC FTA capabilities, and describe how NIFC FTA capabilities will be evaluated prior to fleet delivery.

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 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0604378N *I Nav Integrated Fire Control-Counter Air Sys Eng*		
B. Program Change Summary ($ in Millions)	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
Previous President's Budget	25.445	33.429	35.439	-	35.439
Current President's Budget	24.801	33.429	33.379	-	33.379
Total Adjustments	-0.644	0.000	-2.060	-	-2.060
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.644	0.000			
• Program Adjustments	0.000	0.000	-2.059	-	-2.059
• Rate/Misc Adjustments	0.000	0.000	-0.001	-	-0.001

Change Summary Explanation

FY18 decrease due to SBIR reduction.

FY20 decrease due to $2.000M availability of prior year balances and $0.059M Contractor Services Reform reduction.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	Project (Number/Name) 3159 / *Naval Integrated Fire Control-Counter Air SE&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
3159: *Naval Integrated Fire Control-Counter Air SE&I*	214.445	24.801	33.429	24.379	-	24.379	26.846	26.116	25.835	26.354	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

3159 Naval Integrated Fire Control (NIFC) Systems Engineering Integration and Test (SEI&T) project is a systems engineering effort to extend the Naval Integrated Air and Missile Defense battlespace out to the maximum kinematic range of our weapons for the air, surface, and strike warfare missions. This includes targets beyond the detection range of the shooter. The NIFC project exploits capabilities inherent in existing systems, optimizes current and emerging technologies in component system upgrades, integrates them together, and performs kill chain tests, forming an interoperable System of Systems (SoS) to maximize future offensive and defensive integrated capabilities. NIFC consist of two kill chain families called From the Air (FTA) and From the Sea (FTS). As directed by OPNAV, the project is focused on SEI&T efforts to integrate the From The Sea (FTS) kill chains which include the E-2D Advanced Hawkeye, Cooperative Engagement Capability (CEC), AEGIS, and SM-6 missile as well as an increasing set of sensors and networks. The From the Air (FTA) kill chains consisting of surveillance platforms, tactical aircraft, data links, and air-launched weapons. This PE will support efforts including system definition and architecture development, performance prediction, performance assessment, system test and risk reduction efforts, system analysis, modeling and simulation, and capability demonstrations for the FTS kill chain. The project also facilitates the development of the concept of operations with the warfighter to maximize effectiveness when deployed with the Fleet.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Integration and Test (I&T) Integrated Product Team (IPT)	10.320	10.016	9.932	0.000	9.932
Articles:	-	-	-	-	-
Description: The Integration and Test (I&T) Integrated Product Team (IPT) develops and executes the test plan to assess the FTS operational capability, performs risk reduction testing leveraging various component system tests. Test data will be used over time to verify, validate, and accredit the FTS simulation federation.					
FY 2019 Plans: - NIFC Live Fire tests are scheduled for 2nd and 4th quarter at WSMR and At-Sea respectively. - WSMR Desert Ship Upgrade (DSU) III upgrade has progress and will move towards completion. This configuration supports NIFC Increment 2 testing requirements. - At OPNAV's direction accelerated Life Fire Test 6, focused on TACAIR integration, through systems engineering and test planning as well as complementary federation analysis for a 2nd quarter FY19 WSMR test.					
FY 2020 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3159 / *Naval Integrated Fire Control-Counter Air SE&I*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
- NIFC tests are scheduled every 9 months but are adjusted based on asset availability including At Sea-7 Blk IA which is currently scheduled for the first quarter of FY20. - The capability assessment from COMOPTEVFOR for NIFC Increment 2 capability will occur in FY20. - Develop LFT-8 WSMR event for FY 21. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY19 to FY20 decrease of $84K reflects minor adjustment to At-Sea 7 Blk 1A test event.					
Title: NIFC From the Air (FTA) Capabilities Effectiveness and Integration	0.000	9.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Develops and executes multi-platform cross-domain offensive and defensive kinematic and non-kinematic effects chains as directed by OPNAV. ***FY 2019 Plans:*** NIFC FTA efforts are part of Project Unit 3159 in FY19 but move to Project 3242 starting in FY20. This is not a new start effort. NIFC FTA System of Systems (SoS) verification and validation tests are planned throughout the year, including evaluation of integrated F/A-18E/F and EA-18G H14, E-2D DSSC-3 capabilities, Link-16 Time Differential of Arrival (TDOA), and air/surface launched cruise missiles. Continue FTA Federation lab upgrades. NIFC Increment 3 requirements definition, engineering product development, and risk reduction activities will occur throughout the year. -Coordination of operational test of NIFC-CA Increment 2 capabilities -V&V of Live Virtual Constructive (LVC) functional capabilities - Quarterly FTA LVC events - Planning for NAVAIR SoS exercise - Planning and participation in Navy fleet SUW experimentation ***FY 2020 Base Plans:*** N/A ***FY 2020 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3159 / *Naval Integrated Fire Control-Counter Air SE&I*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding decrease from FY19 to FY20 due to NIFC FTA efforts moving to Project 3242 starting in FY20.					
Title: Engineering Management And System Definition	14.481	14.413	14.447	0.000	14.447
Articles:	-	-	-	-	-
Description: Engineering management and system definition including the development of the Systems Performance Document (SPD), SoS functional allocations, requirements, traceability, SoS trades studies, SoS information exchange requirements, interface specifications, and sensor network capability analysis. Provides for complete FTS kill chain performance analysis and interface verification through development of a federation of simulations provided directly from the FTS Programs of Record. Program of Record include the E-2D Advanced Hawkeye, CEC, AEGIS, and SM-6 missile as well as an expanding set of sensors and networks. Federated SoS simulations support architecture development, scenario development, predictive analysis for testing, and define capabilities and limitations of FTS kill chain performance analysis and interface verification through development of a federation of simulations provided directly from the FTS Programs of Record. Federated SoS simulations support architecture development, scenario development, predictive analysis for testing, and define capabilities and limitations of FTS kill chain for deployment. ***FY 2019 Plans:*** - Continue Desert Ship ACB-16 updates. Updates support program risk reduction testing for NIFC 2019 capability. - Begin follow-on (NIFC Increment 3) System-of-Systems technical definition and requirements. - Conduct one NIFC Inc 2 SM-6 Blk IA Live Fire Event that will demonstrate improved NIFC-CA Inc. 2 capability. ***FY 2020 Base Plans:*** - WSMR ACB-16 updates based on lessons learned and Baseline updates planned to continue through FY20. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** $34K increase from FY19 to FY20 increase to support NIFC-FT Inc 3 Design and Development Phase. Improves capability to address previous gaps and maintain tactical relevance					
Accomplishments/Planned Programs Subtotals	24.801	33.429	24.379	0.000	24.379

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3159 / *Naval Integrated Fire Control-Counter Air SE&I*

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• 0604366N: *Standard Missile SM-6*	6.018	2.988	3.213	-	3.213	5.398	0.000	0.000	0.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

Not Applicable

E. Performance Metrics

Test Program and analysis conducted using the NIFC Federation will provide data to verify NIFC performance with respect to NIFC MOEs, MOPs, and requirements being tracked as NIFC related in the Pillar Programs. NIFC Federation, once validated using test event data, will be used to update the expected performance of NIFC, as required, and provide feedback to Pillar programs.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3159 / *Naval Integrated Fire Control-Counter Air SE&I*	

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
Systems Engineering	Various	Various : Various	46.834	4.323	Dec 2017	0.165	Dec 2018	0.248	Dec 2019	-		0.248	0.000	51.570	-
Systems Engineering	C/CPFF	JHU/APL : Laurel, MD	3.705	0.681	Dec 2017	0.714	Dec 2018	0.680	Dec 2019	-		0.680	0.000	5.780	-
Systems Engineering	C/CPFF	NGIS : Melbourne, FL	8.415	0.238	Oct 2017	0.000		0.000		-		0.000	0.000	8.653	-
Systems Engineering	C/CPFF	LM MS2 : Moorestown, NJ	38.826	10.157	Dec 2017	11.835	Dec 2018	8.095	Dec 2019	-		8.095	0.000	68.913	-
Systems Engineering	C/CPFF	Raytheon Co. : St. Petersburg, FL	14.137	0.605	Oct 2017	1.088	Oct 2018	0.460	Dec 2019	-		0.460	0.000	16.290	-
Systems Engineering	WR	NSWC CRANE : Crane, IN	0.000	0.090	Oct 2017	0.000		0.000		-		0.000	0.000	0.090	-
Systems Engineering	WR	NAWC CHINA LAKE : China Lake, CA	0.000	0.500	Oct 2017	3.295	Oct 2018	1.039	Dec 2019	-		1.039	0.000	4.834	-
Systems Engineering	WR	COTF : Norfolk, VA	0.785	0.000		0.000		0.000		-		0.000	0.000	0.785	-
Systems Engineering	WR	NAWC Pax River : Pax River, MD	0.000	0.000		3.295	Dec 2019	2.075	Dec 2019	-		2.075	0.000	5.370	-
		Subtotal	112.702	16.594		20.392		12.597		-		12.597	0.000	162.285	N/A

Test and Evaluation ($ 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
Integration and Test	C/CPFF	Raytheon : St. Petersburg, FL	7.485	0.231	Dec 2017	0.429	Dec 2018	0.325	Dec 2019	-		0.325	0.000	8.470	-
Integration and Test	WR	COTF : Norfolk, VA	0.013	0.000		0.000		0.000		-		0.000	0.000	0.013	-
Integration and Test	C/BA	Wallops Island : Wallops Island, VA	0.247	0.000		0.000		0.000		-		0.000	0.000	0.247	-
Integration and Test	WR	NAWC AD : Pax River, MD	0.250	0.000		0.483	Nov 2018	0.354	Dec 2019	-		0.354	0.000	1.087	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3159 / *Naval Integrated Fire Control-Counter Air SE&I*

Test and Evaluation ($ 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
Integration and Test	WR	NAWC CHINA LAKE : China Lake, CA	0.000	0.000		1.340	Dec 2018	1.340	Dec 2019	-		1.340	0.000	2.680	-
Integration and Test	WR	NAWC Pax River : Pax River, MD	0.000	0.000		1.165	Dec 2018	1.165	Dec 2019	-		1.165	0.000	2.330	-
Integration and Test	C/CPFF	Lockheed Martin - Moorestown, NJ : Moorestown, NJ	22.123	1.240	Dec 2017	3.784	Dec 2018	2.960	Dec 2019	-		2.960	Continuing	Continuing	Continuing
Integration and Test	WR	PT MUGU : PT Mugu, CA	6.809	0.750	Oct 2017	1.034	Oct 2018	1.034	Dec 2019	-		1.034	0.000	9.627	-
Integration and Test	Various	Various : Various	39.836	4.908	Dec 2017	2.556	Dec 2018	2.458	Oct 2019	-		2.458	Continuing	Continuing	Continuing
Integration and Test	MIPR	Dept of Interior : Boise, ID	2.340	0.238	Dec 2017	1.031	Dec 2018	1.031	Dec 2019	-		1.031	0.000	4.640	-
Integration and Test	WR	NSWC/PHD : Port Hueneme, CA	3.123	0.000		0.212	Dec 2018	0.250	Oct 2019	-		0.250	Continuing	Continuing	Continuing
		Subtotal	82.226	7.367		12.034		10.917		-		10.917	Continuing	Continuing	N/A

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
Project Planning and Management	WR	NAWC China Lake : China Lake, CA	0.000	0.000		0.201	Dec 2018	0.201	Dec 2019	-		0.201	0.000	0.402	-
Project Planning and Management	WR	NAWC Pax River : Pax River, MD	0.000	0.000		0.260	Dec 2018	0.260	Dec 2019	-		0.260	0.000	0.520	-
Project Planning and Management	C/CPFF	Various : Various	19.517	0.840	Dec 2017	0.542	Dec 2018	0.404	Dec 2019	-		0.404	Continuing	Continuing	Continuing
		Subtotal	19.517	0.840		1.003		0.865		-		0.865	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	Project (Number/Name) 3159 / *Naval Integrated Fire Control-Counter Air SE&I*	

	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	214.445	24.801		33.429		24.379		-		24.379	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3159 / *Naval Integrated Fire Control-Counter Air SE&I*

NIFC
FTS Planning Schedule

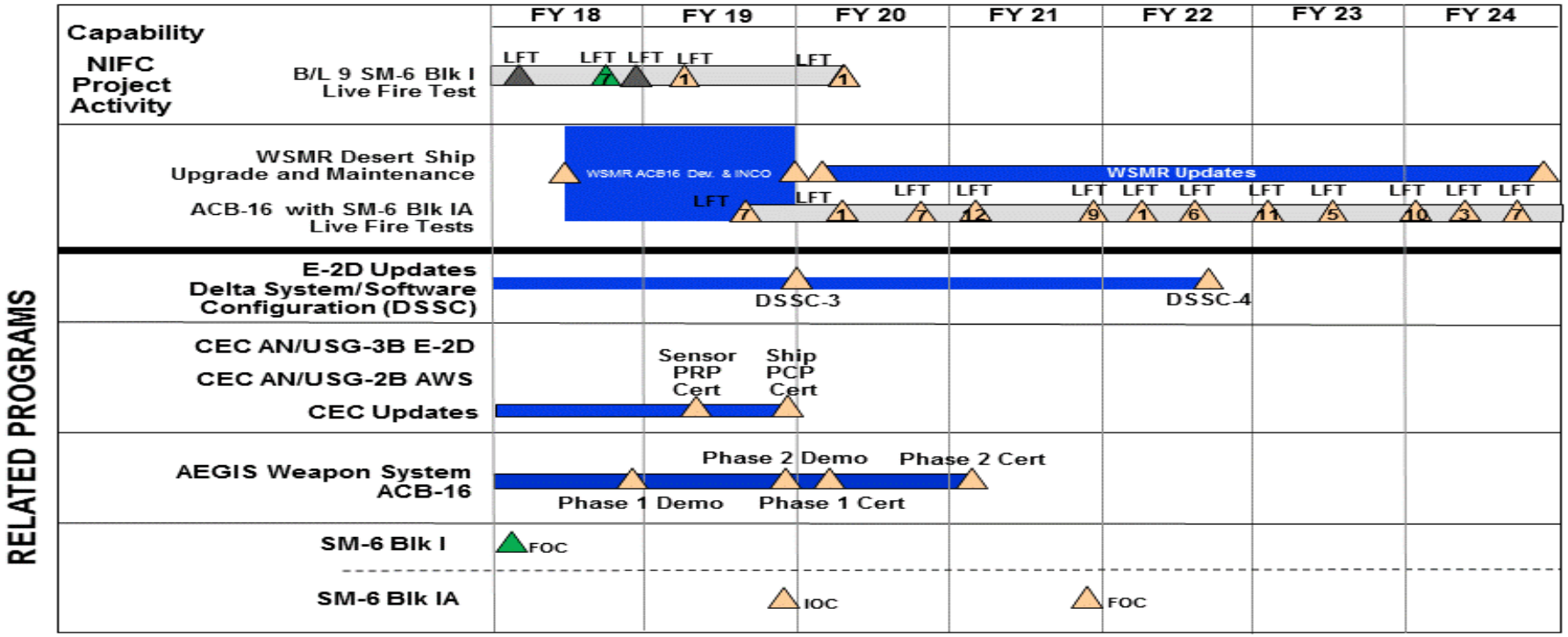

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3159 / *Naval Integrated Fire Control-Counter Air SE&I*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3159				
NIFC PROJECT ACTIVITY: B/L 9 SM-6 Blk I Live Fire Test (Rescheduled from 1Q18 to 4Q18) Completed	4	2018	4	2018
NIFC PROJECT ACTIVITY: B/L 9 SM-6 Blk I Live Fire Test 2/18 (Rescheduled to 2QFY19)	2	2019	2	2019
NIFC PROJECT ACTIVITY: B/L 9 SM-6 Blk I Live Fire Test 1/19 (Rescheduled from 4Q 2018)	1	2019	1	2019
NIFC PROJECT ACTIVITY: B/L 9 SM-6 Blk I Live Fire Test 1/20	1	2020	1	2020
White Sands Missile Range (WSMR): WSMR Desert Ship Upgrade and Maintenance Development; WSMR ACB-16 Development and Installation and Check Out	2	2018	4	2019
White Sands Missile Range (WSMR): WSMR Desert Ship Upgrade and Maintenance Development; WSMR ACB-16 Updates	1	2020	4	2024
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 1/19	1	2019	1	2019
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 1/20	2	2020	2	2020
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 2/20	4	2020	4	2020
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 1/21	1	2021	1	2021
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 2/21	4	2021	4	2021
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 1/22	2	2022	2	2022
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 1/23	1	2023	1	2023
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 2/23	3	2023	3	2023
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 1/24	1	2024	1	2024
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 2/24	2	2024	2	2024
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 3/24	3	2024	3	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3159 / *Naval Integrated Fire Control-Counter Air SE&I*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
E-2D Updates Delta System/Software Configuration (DSSC): E-2D UPDATES DELTA SYSTEM SOFTWARE CONFIGURATION (DSSC-3)	4	2019	4	2019
E-2D Updates Delta System/Software Configuration (DSSC): E-2D UPDATES DELTA SYSTEM SOFTWARE CONFIGURATION (DSSC-4)	3	2022	3	2022
CEC Updates: CEC Updates: Sensor PCP Certification	2	2019	2	2019
CEC Updates: CEC Updates: Ship PCP Certification	4	2019	4	2019
Aegis Weapon System ACB 16: Aegis Weapon System ACB-16: Phase 1 Demonstration	4	2018	4	2018
Aegis Weapon System ACB 16: Aegis Weapon System ACB-16: Phase 2 Demonstration	4	2019	4	2019
Aegis Weapon System ACB 16: Aegis Weapon System ACB-16: Phase 2 Certification	1	2021	1	2021
SM-6 Blk 1 & SM-6 Blk 1A: SM-6 Blk I: FOC	1	2018	1	2018
SM-6 Blk 1 & SM-6 Blk 1A: SM-6 Blk IA: IOC	4	2019	4	2019
SM-6 Blk 1 & SM-6 Blk 1A: SM-6 Blk IA: FOC	4	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*				Project (Number/Name) 3242 / *NIFC-CA Supported by Airborne Platforms*			
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**
3242: *NIFC-CA Supported by Airborne Platforms*	0.000	0.000	0.000	9.000	-	9.000	9.000	9.000	9.000	9.180	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

This is not a new start effort. Naval Integrated Fire Control (NIFC) From the Air (FTA) Systems Engineering Integration and Test (SEI&T) efforts are part of Project Unit 3159 (Naval Integrated Fire Control-Counter Air SE&I) in FY 2019 but move to Project 3242 starting in FY 2020.

A. Mission Description and Budget Item Justification

Naval Integrated Fire Control (NIFC) From the Air (FTA) Systems Engineering Integration and Test (SEI&T) project is a systems engineering effort to integrate NIFC FTA capabilities within "Pillar Programs" (F/A-18 & EA-18G, E-2D, F-35, Link-16 and Tactical Targeting Network Technology Data Links, and AIM-120 and AIM-9X weapons). Based on the advancing threat, there remains an imperative to improve lethality, survivability and interoperability by extending the battlespace out to the maximum kinematic range of our weapons for the air, surface, and strike warfare missions. The NIFC FTA project leverages capabilities inherent in existing systems, optimizes current and emerging technologies in platform system upgrades, and integrates them together to form interoperable System of Systems (SoS) to maximize offensive and defensive FTA integrated capabilities. As directed from OPNAV, the project is focused on development of Air Warfare, Surface Warfare, and Strike Warfare FTA effects chains. This PU will support efforts that include decomposing SoS requirements into Mission Technical Baselines (MTBs) and Integrated Capability Technical Baselines (ICTBs) for requirement allocation to Pillar Programs. Additionally, this PU will support NIFC pillar program coordination to provide performance predictions, performance assessments, and SoS risk reduction activities through Live, Virtual, and Constructive (LVC) events, SoS exercises, and development of Requirements Test and Verification Matrices (RTVMs) to support Developmental and Operational Test for the individual platforms. In lieu of a traditional Test and Evaluation Master Plan (TEMP), NIFC FTA test strategies will be developed to identify resources required to evaluate NIFC FTA capabilities, and describe how NIFC FTA capabilities will be evaluated prior to fleet delivery.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: NIFC From the Air (FTA) Capabilities Effectiveness and Integration	0.000	0.000	9.000	0.000	9.000
Articles:	-	-	-	-	-
Description: Develops and executes multi-platform cross-domain offensive and defensive kinematic and non-kinematic effects chains as directed by OPNAV.					
FY 2019 Plans: N/A					
FY 2020 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3242 / *NIFC-CA Supported by Airborne Platforms*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
NIFC FTA System of Systems (SoS) verification and validation test are planned throughout the year, including evaluation of integrated F/A-18E/F and EA-18G H16, E-2D DSSC-4 capabilities, and air/surface launched cruise missiles. Tactical Targeting Network Technology (TTNT) and other planned system upgraded capabilities will be introduced into SoS integrated effects chains. Continue maturing Federation lab upgrades to support SoS engineering & test. Continuation of V&V of Live Virtual Constructive (LVC) functional capabilities. NIFC Increment 3.X requirements definition, engineering product development, and risk reduction will continue to occur throughout the year. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY20 increase due to realignment of funds from Project 3159 for Airborne Platforms starting in FY20.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	9.000	0.000	9.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not Applicable.

E. Performance Metrics

FTA pillar platform (F/A-18, E-2D, etc) test programs and analysis will provide data to verify NIFC performance with respect to NIFC Measures of Effectiveness (MOEs), Measures of Performance (MOPs), and NIFC requirements within the Pillar Programs. Data will be used to update the expected performance of NIFC FTA, as required, and provide feedback to Pillar programs.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3242 / *NIFC-CA Supported by Airborne Platforms*

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
SYSTEM ENGINEERING	WR	NAWC AD : PAX RIVER, MD	0.000	0.000		0.000		3.295	Oct 2019	-		3.295	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	NAWC CHINA LAKE : CHINA LAKE, CA	0.000	0.000		0.000		2.739	Oct 2019	-		2.739	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		6.034		-		6.034	Continuing	Continuing	N/A

Test and Evaluation ($ 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
INTEGRATION AND TEST	WR	NAWC AD : PAX RIVER, MD	0.000	0.000		0.000		1.165	Oct 2019	-		1.165	Continuing	Continuing	Continuing
INTEGRATION AND TEST	WR	NAWC CHINA LAKE : CHINA LAKE, CA	0.000	0.000		0.000		1.340	Oct 2019	-		1.340	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		2.505		-		2.505	Continuing	Continuing	N/A

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
PROJECT PLANNING AND MANAGEMENT	WR	NAWC AD : PAX RIVER, MD	0.000	0.000		0.000		0.260	Oct 2019	-		0.260	Continuing	Continuing	Continuing
PROJECT PLANNING AND MANAGEMENT	WR	NAWC CHINA LAKE : CHINA LAKE, CA	0.000	0.000		0.000		0.201	Oct 2019	-		0.201	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		0.461		-		0.461	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	Project (Number/Name) 3242 / *NIFC-CA Supported by Airborne Platforms*	

	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	0.000	0.000		0.000		9.000		-		9.000	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3242 / *NIFC-CA Supported by Airborne Platforms*

NIFC
FTA Planning Schedule

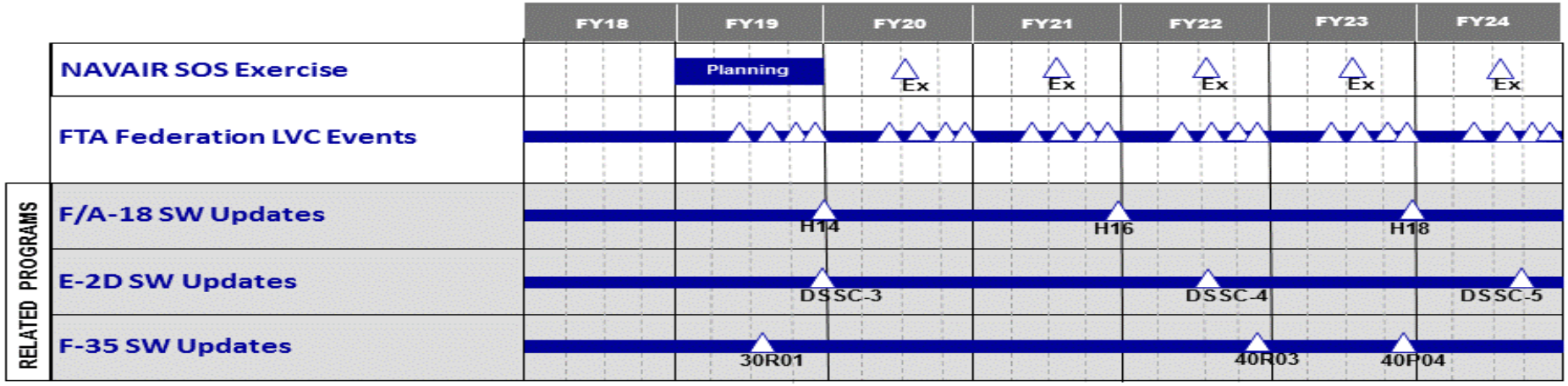

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3242 / *NIFC-CA Supported by Airborne Platforms*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3242				
NAVAIR SoS Excercise 3/20	3	2020	3	2020
NAVAIR SoS Excercise 3/21	3	2021	3	2021
NAVAIR SoS Excercise 3/22	3	2022	3	2022
NAVAIR SoS Excercise 3/23	3	2023	3	2023
NAVAIR SoS Excercise 3/24	3	2024	3	2024
FTA Federation LVC Event 1	2	2019	2	2019
FTA Federation LVC Event 2	3	2019	3	2019
FTA Federation LVC Event 3	4	2019	4	2019
FTA Federation LVC Event 4	4	2019	4	2019
FTA Federation LVC Event 5	2	2020	2	2020
FTA Federation LVC Event 6	3	2020	3	2020
FTA Federation LVC Event 7	4	2020	4	2020
FTA Federation LVC Event 8	4	2020	4	2020
FTA Federation LVC Event 9	2	2021	2	2021
FTA Federation LVC Event 10	3	2021	3	2021
FTA Federation LVC Event 11	4	2021	4	2021
FTA Federation LVC Event 12	4	2021	4	2021
FTA Federation LVC Event 13	2	2022	2	2022
FTA Federation LVC Event 14	3	2022	3	2022
FTA Federation LVC Event 15	4	2022	4	2022
FTA Federation LVC Event 16	4	2022	4	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control-Counter Air Sys Eng*	**Project (Number/Name)** 3242 / *NIFC-CA Supported by Airborne Platforms*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
FTA Federation LVC Event 17	2	2023	2	2023
FTA Federation LVC Event 18	3	2023	3	2023
FTA Federation LVC Event 19	4	2023	4	2023
FTA Federation LVC Event 20	4	2023	4	2023
FTA Federation LVC Event 21	2	2024	2	2024
FTA Federation LVC Event 22	3	2024	3	2024
FTA Federation LVC Event 23	4	2024	4	2024
FTA Federation LVC Event 24	4	2024	4	2024
F/A -18 SW Updates (H14)	4	2019	4	2019
F/A -18 SW Updates (H16)	4	2021	4	2021
F/A -18 SW Updates (H18)	4	2023	4	2023
E-2D SW Updates DSSC 3	4	2019	4	2019
E-2D SW Updates DSSC 4	3	2022	3	2022
E-2D SW Updates DSSC 5	3	2024	3	2024
F-35 SW Updates 30R01	3	2019	3	2019
F-35 SW Updates 40R03	4	2022	4	2022
F-35 SW Updates 40P04	4	2023	1	2024