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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604378N / <i>Nav Integrated Fire Control - Counter Air Sys E</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	239.246	32.512	30.084	44.548	-	44.548	48.554	48.261	49.493	50.206	Continuing	Continuing
3159: <i>Naval Integrated Fire Control-Counter Air SE&I</i>	239.246	32.512	21.084	37.656	-	37.656	38.602	38.152	40.331	40.860	Continuing	Continuing
3242: <i>NIFC-CA Supported by Airborne Platforms</i>	0.000	0.000	9.000	6.892	-	6.892	9.952	10.109	9.162	9.346	Continuing	Continuing

Note

Project 3242 is a new start to support NIFC-CA on airborne platforms.

A. Mission Description and Budget Item Justification

FY21 increased by \$12M to maintain NIFC Increment 2 and for the design, testing and fielding of NIFC Increment 3; but was offset by an under execution adjustment of \$2.776M 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. Along with executing NIFC Inc 2 developmental test & fielding the SEIT supports the design of the current kill chain and system configuration and architectures. Future NIFC efforts (e.g. NIFC Inc 3) includes SEIT activities across a broad range of systems and architectures. 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 new start for 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

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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. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	33.429	33.379	35.846	-	35.846
Current President's Budget	32.512	30.084	44.548	-	44.548
Total Adjustments	-0.917	-3.295	8.702	-	8.702
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.295			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.917	0.000			
• Program Adjustments	0.000	0.000	8.744	-	8.744
• Rate/Misc Adjustments	0.000	0.000	-0.042	-	-0.042

Change Summary Explanation

- FY19 decrease of \$0.917M from FTS for SBIR transfer.
- FY20 decrease of \$3.295 due to Congressional mark for contract delays.
- FY21 increase of \$8.702M due to +\$12M to maintain NIFC Increment 2 and for the design, testing and fielding of NIFC Increment 3; but was offset by an under execution adjustment of \$2.776M to account for the availability of prior year execution balances and \$.522M for rephasing of funding to the right and small rate adjustments.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy										Date: February 2020		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				Project (Number/Name) 3159 / Naval Integrated Fire Control- Counter Air SE&I			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3159: Naval Integrated Fire Control-Counter Air SE&I	239.246	32.512	21.084	37.656	-	37.656	38.602	38.152	40.331	40.860	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This FY 2021 funding request was increased by \$8.738M/Yr in FY21 for NIFC Increment 2 maintenance and NIFC Increment 3.

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 and performs kill chain tests, forming an interoperable System of Systems (SoS) to maximize 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. Along with executing NIFC Inc 2 developmental test & fielding, the SEIT supports the design of the current kill chain and system configuration and architectures. Future NIFC efforts (e.g. NIFC Inc 3) includes SEIT activities across a broad range of systems and architectures. 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.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Integration and Test (I&T) Integrated Product Team (IPT)	9.599	7.932	16.421	0.000	16.421
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 2020 Plans: - NIFC tests are scheduled every 9 months and are adjusted based on asset availability including the At Sea-6 Testing with a Live Fire Scheduled for the second quarter of FY20 and opportunities for additional activities					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
throughout FY20 depending on asset availability. Due to the FY20 Congressional Reduction of \$3.295M, Live Fire Test (LFT) 7 has been eliminated.					
- The capability assessment from COMOPTEVFOR for NIFC Increment 2 capability will occur in FY20.					
- System Engineer and Integration efforts in support of Battlespace Assessment (Non-Fire (NF) At-Sea) test event for FY21					
- System Engineer and Integration efforts for LFT Land Based Test event for FY 21.					
- System Engineer and Integration efforts for AS-7 For FY21.					
FY 2021 Base Plans:					
- Execute Test Events in FY2021: Battlespace Assessment, LFT Land Based Test, AS-7 Test.					
- System Engineer and Integration efforts for Battlespace Assessment (Non-Fire (NF) At-Sea) test event for FY22					
- System Engineer and Integration efforts for LFT, Land Based Test event for FY 22.					
- System Engineer and Integration efforts for At-Sea Live Fire Event for FY22					
FY 2021 OCO Plans:					
N/A					
FY 2020 to FY 2021 Increase/Decrease Statement:					
Increase in FY21 is to maintain NIFC Increment 2 and supports the system engineering design, development and integration efforts required for NIFC Increment 3. NIFC Increment 3 includes SEI&T activities across a broad range of systems & architectures.					
Title: NIFC From the Air (FTA) Capabilities Effectiveness and Integration					
Articles:					
	9.000	0.000	0.000	0.000	0.000
	-	-	-	-	-
Description: Develops and executes multi-platform cross-domain offensive and defensive kinematic and non-kinematic effects chains as directed by OPNAV.					
FY 2020 Plans:					
N/A					
FY 2021 Base Plans:					
N/A					
FY 2021 OCO Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A						
Title: Engineering Management And System Definition		13.913	13.152	21.235	0.000	21.235
Articles:		-	-	-	-	-
Description: Engineering management and system definition including the development of the Systems Performance Document (SPD), System of Systems (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 Programs of Record (PORs). Programs of Record include the E-2D Advanced Hawkeye, CEC, AEGIS, and SM-6 missile as well as an expanding set of sensors and networks. NIFC-FTS Increment 3 adds multiple new sensors, networks, and weapons to the kill chain including Tactical Air Support (TACAIR) integration, CrossFix (Electronic Warfare), and Battle management development and improvement.						
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 PORs. Federated SoS simulations support architecture development, scenario development, predictive analysis for testing, and define capabilities and limitations of FTS kill chain for deployment.						
FY 2020 Plans:						
- WSMR ACB-16 updates based on lessons learned and Baseline updates planned to continue through FY20.						
- System engineering & integration activities including modeling and simulation for NIFC Inc 2 and building to advanced kill chains (e.g. Inc 3).						
FY 2021 Base Plans:						
- System of Systems (SoS) activities for advanced kill chains (e.g. Inc 3) developing system documents as described above for increased sensor and network participation (e.g. Tactical Air Sensors) to meet fleet needs in support of warfighting in complex Naval environments.						
FY 2021 OCO Plans:						
N/A						
FY 2020 to FY 2021 Increase/Decrease Statement:						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Increase in FY21 is to maintain NIFC Increment 2 and supports the system engineering design, development and integration efforts required for NIFC Increment 3. NIFC Increment 3 includes SEI&T activities across a broad range of systems & architectures.					
Accomplishments/Planned Programs Subtotals	32.512	21.084	37.656	0.000	37.656

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0604366N: <i>Standard Missile SM-6</i>	2.868	3.213	3.260	-	3.260	0.000	0.000	0.000	0.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

Not Applicable

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E	Project (Number/Name) 3159 / Naval Integrated Fire Control- Counter Air SE&I
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	Various	Various : Various	51.157	0.165	Dec 2018	4.476	Dec 2019	7.141	Dec 2020	-		7.141	0.000	62.939	-
Systems Engineering	C/CPFF	JHU/APL : Laurel, MD	4.386	0.714	Dec 2018	1.300	Dec 2019	2.894	Dec 2020	-		2.894	0.000	9.294	-
Systems Engineering	C/CPFF	NGIS : Melbourne, FL	8.653	0.000		0.000		0.500	Dec 2020	-		0.500	0.000	9.153	-
Systems Engineering	C/CPFF	LM MS2 : Moorestown, NJ	48.983	11.835	Dec 2018	3.141	Dec 2019	6.000	Dec 2020	-		6.000	0.000	69.959	-
Systems Engineering	C/CPFF	Raytheon Co. : St. Petersburg, FL	14.742	1.088	Oct 2018	0.311	Dec 2019	0.600	Dec 2020	-		0.600	0.000	16.741	-
Systems Engineering	WR	NSWC CRANE : Crane, IN	0.090	0.000		0.655	Dec 2019	0.600	Dec 2020	-		0.600	0.000	1.345	-
Systems Engineering	WR	NAWC CHINA LAKE : China Lake, CA	0.500	2.823	Oct 2018	0.000	Dec 2019	0.000		-		0.000	0.000	3.323	-
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	3.295	Dec 2019	0.000	Dec 2019	0.000	Dec 2020	-		0.000	0.000	3.295	-
Systems Engineering	WR	NSWC DAHLGREN : Dahlgren, VA	0.000	0.000		1.054	Dec 2019	1.300	Oct 2020	-		1.300	0.000	2.354	-
Systems Engineering	C/CPFF	Raytheon Co. : Tucson, AZ	0.000	0.000		0.508	Dec 2019	0.500	Dec 2020	-		0.500	0.000	1.008	-
Subtotal			129.296	19.920		11.445		19.535		-		19.535	0.000	180.196	N/A

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integration and Test	C/CPFF	Raytheon : St. Petersburg, FL	7.716	0.429	Dec 2018	0.000		0.250	Dec 2020	-		0.250	0.000	8.395	-
Integration and Test	WR	COTF : Norfolk, VA	0.013	0.000		0.000		0.000		-		0.000	0.000	0.013	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E	Project (Number/Name) 3159 / Naval Integrated Fire Control- Counter Air SE&I
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
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	0.483	Nov 2018	0.000		0.000	Dec 2020	-		0.000	0.000	0.733	-
Integration and Test	WR	NAWC CHINA LAKE : China Lake, CA	0.000	1.340	Dec 2018	0.120	Dec 2019	1.200	Oct 2020	-		1.200	0.000	2.660	-
Integration and Test	WR	NAWC Pax River : Pax River, MD	0.000	1.165	Dec 2018	0.000	Dec 2019	0.000		-		0.000	0.000	1.165	-
Integration and Test	C/BA	NSWC/DAHLGREN : DAHLGREN, VA	0.000	0.202	Jan 2019	0.460	Oct 2019	0.000	Dec 2020	-		0.000	0.000	0.662	-
Integration and Test	C/CPFF	Lockheed Martin - Moorestown, NJ : Moorestown, NJ	23.363	3.582	Dec 2018	2.062	Dec 2019	2.500	Dec 2020	-		2.500	Continuing	Continuing	Continuing
Integration and Test	WR	PT MUGU : PT Mugu, CA	7.559	1.000	Oct 2018	1.550	Dec 2019	1.600	Oct 2020	-		1.600	0.000	11.709	-
Integration and Test	Various	Various : Various	44.744	2.556	Dec 2018	4.030	Oct 2019	8.571	Oct 2020	-		8.571	Continuing	Continuing	Continuing
Integration and Test	MIPR	Dept of Interior : Boise, ID	2.578	0.620	Dec 2018	0.000		1.300	Oct 2020	-		1.300	0.000	4.498	-
Integration and Test	WR	NSWC/PHD : Port Hueneme, CA	3.123	0.212	Dec 2018	0.250	Dec 2019	0.250	Oct 2020	-		0.250	Continuing	Continuing	Continuing
Integration and Test	WR	NIWC : San Diego, CA	0.000	0.000		0.066	Mar 2020	0.750	Oct 2020	-		0.750	0.000	0.816	-
Subtotal			89.593	11.589		8.538		16.421		-		16.421	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Planning and Management	WR	NAWC China Lake : China Lake, CA	0.000	0.201	Dec 2018	0.000		0.000		-		0.000	0.000	0.201	-

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy

Date: February 2020

Appropriation/Budget Activity
1319 / 5

R-1 Program Element (Number/Name)
PE 0604378N / Nav Integrated Fire Control
- Counter Air Sys E

Project (Number/Name)
3159 / Naval Integrated Fire Control-
Counter Air SE&I



NIFC FTS Planning Schedule



RELATED PROGRAMS

Capability	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25
		INC 2 IOC ★				INC 3 IOC ★	
NIFC Project Activity B/L 9 SM-6 Blk I Live Fire Test (INC 1)	LFT ▲						
WSMR Desert Ship Upgrade and Maintenance	ACB16 INCO ▲		HW REFRESH ▲				
ACB-16 with SM-6 Blk IA Live Fire Tests (INC 2/2+/3)		1 ▲ At Sea Testing	2 ▲ At Sea	3 ▲ At Sea	4 ▲ At Sea	5 ▲ At Sea	6 ▲ At Sea
E-2D Updates Delta System/Software Configuration (DSSC)		DSSC-3 ▲		DSSC-4 ▲			
CEC AN/USG-3B E-2D CEC AN/USG-2B AWS CEC Updates		Sensor PRP Cert ▲	Ship PCP Cert ▲				
AEGIS Weapon System ACB-16		Phase 1 Cert ▲	Phase 2 Demo ▲	Phase 2 Cert ▲			
SM-6 Blk IA		▲ IOC		▲ FOC			

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E	Project (Number/Name) 3159 / Naval Integrated Fire Control- Counter Air SE&I

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3159				
NIFC PROJECT ACTIVITY: CAPABILITY: INC 2 IOC	3	2021	3	2021
NIFC PROJECT ACTIVITY: CAPABILITY: INC 3 IOC	4	2024	4	2024
NIFC PROJECT ACTIVITY: NIFC Project Activity: B/L 9 SM-6 Blk I Live Fire Test (Completed)	2	2019	2	2019
White Sands Missile Range (WSMR): WSMR Desert Ship Upgrade and Maintenance Development; WSMR ACB-16 Development and Installation and Check Out	1	2019	4	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 (Delayed to FY21)	3	2021	3	2021
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA At-Sea 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	2022	4	2022
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA At-sea Test 1/22	3	2022	3	2022
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA LFT Test 2/22	4	2023	4	2023
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test At-Sea 1/23	2	2023	2	2023
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 2/23	3	2024	3	2024
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 3/23	4	2024	4	2024
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA At-sea 1/24	2	2024	2	2024
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 2/24	3	2025	3	2025
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Tests: At Sea 1/25	4	2025	4	2025
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 3/24	4	2025	4	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E	Project (Number/Name) 3159 / Naval Integrated Fire Control- Counter Air SE&I
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Events by Sub Project	Start		End	
	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 II Demo	4	2019	4	2019
Aegis Weapon System ACB 16: Aegis Weapon System ACB-16: Phase I Cert	2	2020	2	2020
Aegis Weapon System ACB 16: Aegis Weapon System ACB-16: Phase II Cert	1	2021	1	2021
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

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Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E				Project (Number/Name) 3242 / NIFC-CA Supported by Airborne Platforms			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3242: NIFC-CA Supported by Airborne Platforms	0.000	0.000	9.000	6.892	-	6.892	9.952	10.109	9.162	9.346	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: NIFC From the Air (FTA) Capabilities Effectiveness and Integration	0.000	9.000	6.892	0.000	6.892
Articles:	-	-	-	-	-
Description: Develops and executes multi-platform cross-domain offensive and defensive kinematic and non-kinematic effects chains.					
FY 2020 Plans: NIFC FTA System of Systems (SoS) verification and validation (V&V) tests are planned throughout the year, including initial evaluation of integrated F/A-18E/F and EA-18G H16, E-2D DSSC-3/4 capabilities, and air launched Air-to-Air and Air-to-Surface 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 requirements refinement, engineering product development, test					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E	Project (Number/Name) 3242 / NIFC-CA Supported by Airborne Platforms

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>planning, and risk reduction will continue to occur throughout the year. Will execute quarterly FTA LVC events, which will include both Anti-Air Warfare and Anti-Surface warfare mission threads.</p> <p>FY 2021 Base Plans: Continue NIFC FTA System of Systems (SoS) verification and validation testing of F/A-18 H16, F-35, and E-2D DSSC 4 with increased capabilities of USN air launched Air-to-Air and Air-to-Surface weapons, integration of Tactical Targeting Network Technology (TTNT), and enhancements to Link-16. Evaluate and assess integrated fires interoperability and performance across air platforms and weapons by the utilization of federated labs. These labs will utilize a combination of Live Virtual Constructive (LVC) capabilities to identify issues, and provide recommendations for corrections. Development of mission Requirements Test and Verification Matrices (RTVMs) to provide definition to Developmental Test and Operational Test within the individual platforms. Development of Integrated Technical Capability Baselines (ICTBs) and Design Reference Missions (DRMs) to inform architecture development and system definition of the F/A-18 H18/H20, E-2D DSSC 6/7, and continued F-35 improvements. Execute performance assessments, risk reduction activities, and employment recommendations across the NIFC pillar programs to maximize effectiveness when introduced to the Fleet.</p> <p>FY 2021 OCO Plans: N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: The FY 2021 funding request was reduced to account for updated rates and the availability of prior year execution balances.</p>					
Accomplishments/Planned Programs Subtotals	0.000	9.000	6.892	0.000	6.892

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

N/A

Remarks

D. Acquisition Strategy

Not Applicable.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
1319 / 5				PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E						3242 / NIFC-CA Supported by Airborne Platforms					
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
SYSTEM ENGINEERING	WR	NAWC AD : PAX RIVER, MD	0.000	0.000		3.156	Oct 2019	2.611	Oct 2020	-		2.611	Continuing	Continuing	Continuing
SYSTEM ENGINEERING	WR	NAWC CHINA LAKE : CHINA LAKE, CA	0.000	0.000		2.739	Oct 2019	2.176	Oct 2020	-		2.176	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		5.895		4.787		-		4.787	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
INTEGRATION AND TEST	WR	NAWC AD : PAX RIVER, MD	0.000	0.000		1.165	Oct 2019	0.577	Oct 2020	-		0.577	Continuing	Continuing	Continuing
INTEGRATION AND TEST	WR	NAWC CHINA LAKE : CHINA LAKE, CA	0.000	0.000		1.340	Oct 2019	0.928	Oct 2020	-		0.928	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		2.505		1.505		-		1.505	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
PROJECT PLANNING AND MANAGEMENT	WR	NAWC AD : PAX RIVER, MD	0.000	0.000		0.399	Oct 2019	0.399	Oct 2020	-		0.399	Continuing	Continuing	Continuing
PROJECT PLANNING AND MANAGEMENT	WR	NAWC CHINA LAKE : CHINA LAKE, CA	0.000	0.000		0.201	Oct 2019	0.201	Oct 2020	-		0.201	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.600		0.600		-		0.600	Continuing	Continuing	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy

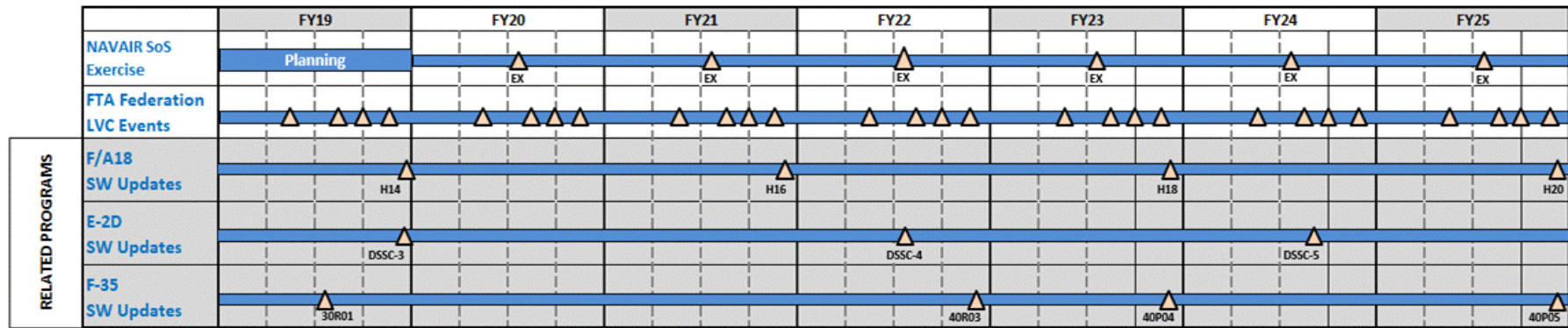
Date: February 2020

Appropriation/Budget Activity
1319 / 5

R-1 Program Element (Number/Name)
PE 0604378N / Nav Integrated Fire Control
- Counter Air Sys E

Project (Number/Name)
3242 / NIFC-CA Supported by Airborne
Platforms

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NIFC FTA Planning Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E	Project (Number/Name) 3242 / NIFC-CA Supported by Airborne Platforms

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3242				
NAVAIR SoS Exercise 3/20	3	2020	3	2020
NAVAIR SoS Exercise 3/21	3	2021	3	2021
NAVAIR SoS Exercise 3/22	3	2022	3	2022
NAVAIR SoS Exercise 3/23	3	2023	3	2023
NAVAIR SoS Exercise 3/24	3	2024	3	2024
NAVAIR SoS Exercise 3/25	3	2025	3	2025
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 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
FTA Federation LVC Event 17	2	2023	2	2023
FTA Federation LVC Event 18	3	2023	3	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604378N / Nav Integrated Fire Control - Counter Air Sys E	Project (Number/Name) 3242 / NIFC-CA Supported by Airborne Platforms
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
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
FTA Federation LVC Event 25	2	2025	2	2025
FTA Federation LVC Event 26	3	2025	3	2025
FTA Federation LVC Event 27	4	2025	4	2025
FTA Federation LVC Event 28	4	2025	4	2025
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
F/A -18 SW Updates (H20)	4	2025	4	2025
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	4	2023
F-35 SW Updates 40P05	4	2025	4	2025