Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy											Date: May 2021	
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 E*							
COST ($ in Millions)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
Total Program Element	271.758	28.912	41.992	46.121	-	46.121	-	-	-	-	-	-
3159: *Naval Integrated Fire Control-Counter Air SE&I*	271.758	20.258	36.059	36.381	-	36.381	-	-	-	-	-	-
3242: *NIFC-CA Supported by Airborne Platforms*	0.000	8.654	5.933	9.740	-	9.740	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The FY 2022 funding request was reduced by $1.600M 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 an elevated sensor, platform, fire control system, and missile, along with introducing other networks and sensors coordinating with other DOD activities as appropriate. 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.

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 all USN air launched Air-to-Air and Air-to-Surface 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 2022 Navy	Date: May 2021
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 E*

B. Program Change Summary ($ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	30.084	44.548	48.554	-	48.554
Current President's Budget	28.912	41.992	46.121	-	46.121
Total Adjustments	-1.172	-2.556	-2.433	-	-2.433
• Congressional General Reductions	-	-0.168			
• Congressional Directed Reductions	-	-2.388			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.172	0.000			
• Program Adjustments	0.000	0.000	-1.600	-	-1.600
• Rate/Misc Adjustments	0.000	0.000	-0.833	-	-0.833

Change Summary Explanation

FY 2022 increase is for the architecture development and system definition of the NIFC From The Air (FTA) F/A-18 H18/H20, E-2D DSSC 6/7 and continued F-35 improvements.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy			Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
3159: *Naval Integrated Fire Control-Counter Air SE&I*	271.758	20.258	36.059	36.381	-	36.381	-	-	-	-	-	-
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 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 an elevated sensor, platform, fire control system and missile, along with introducing other networks and sensors coordinating with other DoD activities as appropriate. 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.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Integration and Test (I&T) Integrated Product Team (IPT)	7.692	15.623	15.636	0.000	15.636
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 2021 Plans: - Execute Test Events in FY21: Non-Fire Capability Demo Land Based Test and At-Sea(AS)-7 and AS 9 Tests. - 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 2022 Base Plans: - Execute Test Events in FY22: battlespace assessment, (Non-Fire) At Sea event, Land Based and At Sea Live Fire event.					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Systems engineering and integration efforts for NIFC Inc 3 events: LFT Land Based Test event for FY23. - Systems engineering and integration efforts for NIFC Inc 3 events: At Sea Non Fire and Live Fire events for FY23. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY22 increase of $13K is an inflation adjustment.					
Title: Engineering Management And System Definition	12.566	20.436	20.745	0.000	20.745
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 an elevated sensor, fire control system, platform and 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, (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 and future enhancements. Federated SoS simulations support architecture development, scenario development, predictive analysis for testing, and define capabilities and limitations of FTS kill chain for deployment. ***FY 2021 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 to meet fleet needs in support of warfighting in complex Naval environments. ***FY 2022 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
- System of systems (SOS) activities for Inc 3 advanced kill chains developing system documents as described above for increased sensor and network participation to meet fleet needs in support of warfighting in complex Naval environments - Continue Modeling and Simulations (M&S) for Evaluation of advanced concepts utilizing other networks and sensors. - System of systems (SOS) activities for Inc 3 advanced kill chains developing system documents as described above for increased sensor and network participation to meet fleet needs in support of warfighting in complex Naval environments ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY22 increase of $309K is for the M&S required to support and evaluate complex Naval warfighting environments.					
Accomplishments/Planned Programs Subtotals	20.258	36.059	36.381	0.000	36.381

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• 0604366N: *Standard Missile SM-6*	3.057	3.260	3.031	-	3.031	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

Not Applicable

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
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*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	Various	Various : Various	51.322	4.476	Dec 2019	4.535	Dec 2020	4.535	Dec 2021	-		4.535	-	-	-
Systems Engineering	C/CPFF	JHU/APL : Laurel, MD	5.100	1.300	Dec 2019	2.594	Dec 2020	2.704	Oct 2021	-		2.704	-	-	-
Systems Engineering	C/CPFF	NGIS : Melbourne, FL	8.653	0.000		0.000		0.000		-		0.000	-	-	-
Systems Engineering	C/CPFF	LM MS2 : Moorestown, NJ	60.818	3.141	Dec 2019	4.352	Dec 2020	4.352	Oct 2021	-		4.352	-	-	-
Systems Engineering	C/CPFF	Raytheon Co. : St. Petersburg, FL	15.830	0.311	Dec 2019	0.370	Dec 2020	0.370	Oct 2021	-		0.370	-	-	-
Systems Engineering	WR	NSWC CRANE : Crane, IN	0.090	0.655	Dec 2019	2.003	Dec 2020	2.003	Dec 2021	-		2.003	-	-	-
Systems Engineering	WR	NAWC CHINA LAKE : China Lake, CA	3.323	0.000	Dec 2019	0.000		0.000		-		0.000	-	-	-
Systems Engineering	WR	COTF : Norfolk, VA	0.785	0.000		0.000		0.000		-		0.000	-	-	-
Systems Engineering	WR	NAWC Pax River : Pax River, MD	3.295	0.000	Dec 2019	0.000	Dec 2020	0.100	Oct 2021	-		0.100	-	-	-
Systems Engineering	WR	NSWC DAHLGREN : Dahlgren, VA	0.000	1.054	Dec 2019	3.185	Oct 2020	3.262	Oct 2021	-		3.262	-	-	-
Systems Engineering	C/CPFF	Raytheon Co. : Tucson, AZ	0.000	0.508	Dec 2019	0.546	Dec 2020	0.546	Oct 2021	-		0.546	-	-	-
		Subtotal	149.216	11.445		17.585		17.872		-		17.872	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integration and Test	C/CPFF	Raytheon : St. Petersburg, FL	8.145	0.000		0.250	Dec 2020	0.250	Oct 2021	-		0.250	-	-	-
Integration and Test	WR	COTF : Norfolk, VA	0.013	0.000		0.000		0.000		-		0.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integration and Test	C/BA	Wallops Island : Wallops Island, VA	0.247	0.000		0.013	Dec 2020	0.013	Oct 2021	-		0.013	-	-	-
Integration and Test	WR	NAWC AD : Pax River, MD	0.733	0.000		0.000		0.000		-		0.000	-	-	-
Integration and Test	WR	NAWC CHINA LAKE : China Lake, CA	1.340	0.120	Dec 2019	0.000		0.000		-		0.000	-	-	-
Integration and Test	WR	NAWC Pax River : Pax River, MD	1.165	0.000	Dec 2019	0.080	Dec 2020	0.080	Dec 2021	-		0.080	-	-	-
Integration and Test	C/BA	NSWC/DAHLGREN : DAHLGREN, VA	0.202	0.460	Oct 2019	0.460	Dec 2020	0.460	Oct 2021	-		0.460	-	-	-
Integration and Test	C/CPFF	Lockheed Martin - Moorestown, NJ : Moorestown, NJ	26.945	2.062	Dec 2019	3.350	Dec 2020	3.385	Oct 2021	-		3.385	-	-	-
Integration and Test	WR	PT MUGU : PT Mugu, CA	8.559	1.550	Dec 2019	1.357	Oct 2020	1.357	Oct 2021	-		1.357	-	-	-
Integration and Test	Various	Various : Various	47.300	3.204	Oct 2019	4.031	Oct 2020	4.031	Oct 2021	-		4.031	-	-	-
Integration and Test	MIPR	Dept of Interior : Boise, ID	3.198	0.000		0.850	Oct 2020	0.850	Dec 2021	-		0.850	-	-	-
Integration and Test	WR	NSWC/PHD : Port Hueneme, CA	3.335	0.250	Dec 2019	5.034	Oct 2020	5.034	Oct 2021	-		5.034	-	-	-
Integration and Test	WR	NIWC : San Diego, CA	0.000	0.066	Mar 2020	0.000		0.000		-		0.000	-	-	-
Integration and Test	C/CPFF	JHU/APL : Laurel, MD	0.000	0.000		0.556	Oct 2020	0.556	Oct 2021	-		0.556	-	-	-
Integration and Test	WR	NSWC CRANE : Crane, IN	0.000	0.000		0.600	Oct 2020	0.600	Oct 2021	-		0.600	-	-	-
Integration and Test	WR	NIWC San Diego : San Diego, CA	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Integration and Test	C/CPFF	Northrop Grumman : Melbourne, FL	0.000	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	101.182	7.712		16.581		16.616		-		16.616	-	-	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
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*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Planning and Management	WR	NAWC China Lake : China Lake, CA	0.201	0.000		0.000	Oct 2020	0.000		-		0.000	-	-	-
Project Planning and Management	WR	NAWC Pax River : Pax River, MD	0.260	0.000		0.000	Oct 2020	0.000		-		0.000	-	-	-
Project Planning and Management	C/CPFF	Various : Various	20.899	1.101	Dec 2019	1.893	Dec 2020	1.893	Oct 2021	-		1.893	-	-	-
		Subtotal	21.360	1.101		1.893		1.893		-		1.893	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	271.758	20.258		36.059		36.381		-		36.381	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
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

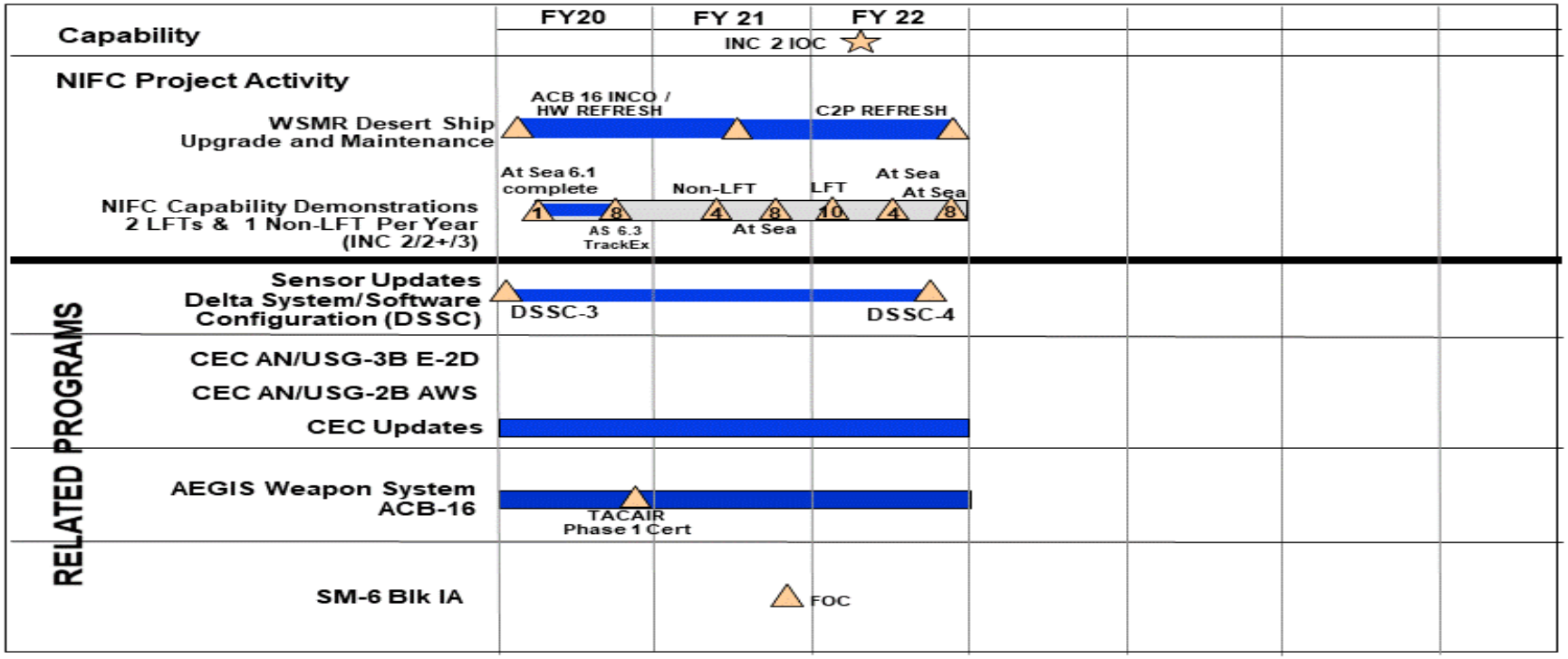

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control - Counter Air Sys E*	**Project (Number/Name)** 3159 / *Naval Integrated Fire Control-Counter Air SE&I*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3159				
NIFC PROJECT ACTIVITY: CAPABILITY: INC 2 IOC	2	2022	2	2022
White Sands Missile Range (WSMR): WSMR Desert Ship Upgrade and Maintenance Development; WSMR ACB-16 Development and Installation and Check Out/ Harware Refresh	1	2020	3	2021
White Sands Missile Range (WSMR): White Sands Missile Range (WSMR) Desert Ship Upgrade and Maintenance Development: C2P Refresh	2	2022	4	2022
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 Capability Demo, LFT 4/21	3	2021	3	2021
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 8/21	4	2021	4	2021
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test 10/22	1	2022	1	2022
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA At-sea Test 4/22	3	2022	3	2022
ACB 16 With SM-6Blk 1A Live Fire Tests: ACB-16 with SM-6 Blk IA Live Fire Test At Sea 8/22	4	2022	4	2022
Elevated Sensor Updates Delta System/Software Configuration (DSSC): ELEVATED SENSOR UPDATES DELTA SYSTEM SOFTWARE CONFIGURATION (DSSC-4)	3	2022	3	2022
SM-6 Blk 1 & SM-6 Blk 1A: CEC Updates On-Going Block 2 IOC	1	2020	4	2022
SM-6 Blk 1 & SM-6 Blk 1A: AEGIS Weapon System ACB-16: TACAIR Phase I Cert	4	2020	4	2020
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 2022 Navy			Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
3242: *NIFC-CA Supported by Airborne Platforms*	0.000	8.654	5.933	9.740	-	9.740	-	-	-	-	-	-
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 all USN air launched Air-to-Air and Air-to-Surface 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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: NIFC From the Air (FTA) Capabilities Effectiveness and Integration	8.654	5.933	9.740	0.000	9.740
Articles:	-	-	-	-	-
Description: Develops and executes multi-platform cross-domain offensive and defensive kinematic and non-kinematic effects chains.					
FY 2021 Plans: Continue NIFC FTA System of Systems (SoS) verification and validation testing of F/A-18 H16, F-35, and E-2D DSSC 4/5 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					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
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. ***FY 2022 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 / 5 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, interoperability risk reduction for advanced Integrated Fire Control (IFC), and employment recommendations across the NIFC pillar programs to maximize effectiveness when introduced to the Fleet. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY 2022 increase is for the architecture development and system definition of the F/A-18 H18/H20, E-2D DSSC 6/7, and continued F-35 improvements. Additionally, there are significant increases in USN air launched air-to-air and air-to-surface weapons development efforts.					
Accomplishments/Planned Programs Subtotals	8.654	5.933	9.740	0.000	9.740

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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*

D. Acquisition Strategy

Not Applicable.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
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*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SYSTEM ENGINEERING	WR	NAWC AD : PAX RIVER, MD	0.000	2.289	Oct 2019	1.776	Oct 2020	1.885	Oct 2021	-		1.885	-	-	-
SYSTEM ENGINEERING	WR	NAWC CHINA LAKE : CHINA LAKE, CA	0.000	1.512	Oct 2019	1.422	Oct 2020	1.639	Oct 2021	-		1.639	-	-	-
SYSTEM ENGINEERING	C/CPFF	NSMA : WASHINGTO, DC	0.000	1.993	Nov 2019	0.775	Nov 2020	0.900	Nov 2021	-		0.900	-	-	-
		Subtotal	0.000	5.794		3.973		4.424		-		4.424	-	-	N/A

Remarks

FY2022 increase for continued architecture development and system definition of the F/A-18 H18/H20, E-2D DSSC 6/7, and numerous weapon programs

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INTEGRATION AND TEST	WR	NAWC AD : PAX RIVER, MD	0.000	0.916	Oct 2019	0.389	Oct 2020	1.005	Oct 2021	-		1.005	-	-	-
INTEGRATION AND TEST	WR	NAWC CHINA LAKE : CHINA LAKE, CA	0.000	0.768	Oct 2019	0.603	Oct 2020	0.697	Oct 2021	-		0.697	-	-	-
INTEGRATION AND TEST	C/CPFF	NSMA : WASHINGTON, DC	0.000	0.723	Nov 2019	0.562	Nov 2020	2.960	Dec 2021	-		2.960	-	-	-
		Subtotal	0.000	2.407		1.554		4.662		-		4.662	-	-	N/A

Remarks

FY 2022 increase is for test and evaluation of system of systems capabilities of the F/A-18 H16, E-2D DSSC 4/5 and F-35 improvements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PROJECT PLANNING AND MANAGEMENT	WR	NAWC AD : PAX RIVER, MD	0.000	0.317	Oct 2019	0.267	Oct 2020	0.414	Oct 2021	-		0.414	-	-	-
PROJECT PLANNING AND MANAGEMENT	WR	NAWC CHINA LAKE : CHINA LAKE, CA	0.000	0.120	Oct 2019	0.129	Oct 2020	0.240	Oct 2021	-		0.240	-	-	-
Travel	WR	NAVAIR : PAX RIVER, MD	0.000	0.016	Oct 2019	0.010	Oct 2020	0.000		-		0.000	-	-	-
		Subtotal	0.000	0.453		0.406		0.654		-		0.654	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	8.654		5.933		9.740		-		9.740	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
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*

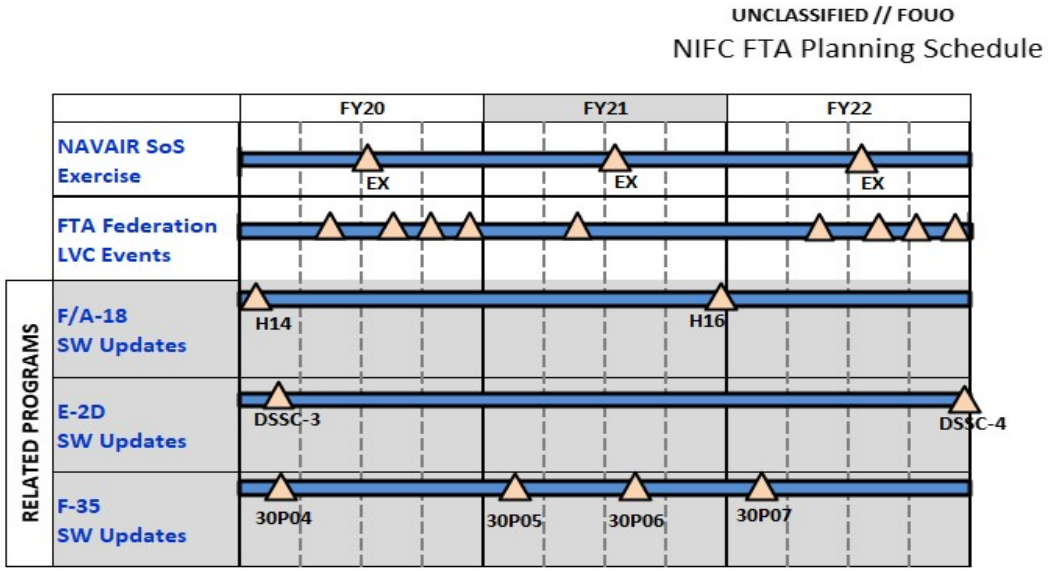

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604378N / *Nav Integrated Fire Control - Counter Air Sys E*	**Project (Number/Name)** 3242 / *NIFC-CA Supported by Airborne Platforms*

Schedule Details

	Start		End	
Events by Sub Project	**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
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 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