Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602792N *I Innovative Naval Prototypes (INP) Applied Res*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	141.151	133.828	127.363	-	127.363	126.402	131.699	144.812	133.966	Continuing	Continuing
0000: *Innovative Naval Prototypes (INP) Applied Res*	0.000	2.910	0.000	0.000	-	0.000	41.308	68.967	114.034	108.585	Continuing	Continuing
3423: *LOCUST*	0.000	24.134	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	24.134
3450: *AMOS*	0.000	8.070	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.070
3451: *CLAWS*	0.000	2.401	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.401
3456: *Full Spectrum Undersea Warfare*	0.000	38.412	42.570	42.049	-	42.049	32.955	29.487	21.073	15.472	Continuing	Continuing
3461: *MASS*	0.000	4.801	7.920	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12.721
3462: *DEALRS*	0.000	6.722	10.890	6.930	-	6.930	0.000	0.000	0.000	0.000	0.000	24.542
3463: *MATes*	0.000	6.242	9.900	9.900	-	9.900	4.950	4.804	0.000	0.000	0.000	35.796
3506: *Compact Agile Interceptors*	0.000	0.000	1.500	2.000	-	2.000	0.000	0.000	0.000	0.000	0.000	3.500
3507: *Chimera*	0.000	0.000	15.537	34.915	-	34.915	38.809	25.606	7.757	7.920	Continuing	Continuing
3508: *Curious Orion*	0.000	0.000	1.800	1.800	-	1.800	0.000	0.000	0.000	0.000	0.000	3.600
5891: *INP Operational Analysis, Support and Experimentation Activity*	0.000	4.327	2.000	2.000	-	2.000	2.000	1.903	1.948	1.989	Continuing	Continuing
5892: *Full Spectrum Information Warfare*	0.000	3.880	7.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.880
5893: *Decision Superiority*	0.000	1.649	1.200	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.849
5894: *Direct-X*	0.000	2.425	0.000	2.000	-	2.000	0.000	0.000	0.000	0.000	0.000	4.425
5895: *DMO through IAS*	0.000	2.861	4.500	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.361
5896: *Echidna*	0.000	1.724	0.750	8.729	-	8.729	0.000	0.000	0.000	0.000	0.000	11.203
5897: *Hypersonic Technologies*	0.000	7.760	6.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.760
5899: *Precision Fire Control*	0.000	22.833	22.261	14.040	-	14.040	4.880	0.932	0.000	0.000	0.000	64.946
5901: *STARDANCAR-M*	0.000	0.000	0.000	1.000	-	1.000	1.500	0.000	0.000	0.000	0.000	2.500

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy													Date: March 2024
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602792N *I Innovative Naval Prototypes (INP) Applied Res*								
5902: *TALISMAN*	0.000	0.000	0.000	2.000	-	2.000	0.000	0.000	0.000	0.000	0.000	0.000	2.000

A. Mission Description and Budget Item Justification

The Office of Naval Research (ONR) portfolio includes efforts that solve problems, respond to mission requirements, and perform exploratory research for new and breakthrough capabilities, which will define the future of U.S. Naval forces. Larger in scope, scale, and risk Innovative Naval Prototypes (INP) are selected for their high-payoff and potential to revolutionize operational concepts. Due to high technical risk, INPs typically have long durations with no more than three years between decision points. They mature technologies from a Technology Readiness Level (TRL) of 2 or 3 to a TRL of 6. As such, INPs require both the Applied Research, detailed in this PE; and Advanced Technology Development (ATD) funding, detailed in PE 0603801N. Developing INPs requires a systematic expansion and application of knowledge to develop useful materials, devices, and systems oriented toward the design and development of prototypes applicable to specific mission area requirements. The efforts funded within this PE translate promising basic research into solutions for broadly defined military needs. These efforts include developing breadboard hardware and algorithms that establish the initial feasibility and practicality of proposed solutions to technological challenges, such as concept exploration efforts, studies, investigations, and non-system specific technology efforts. Applied Research INPs do not develop hardware for service use; rather they provide feeder technology that can be demonstrated in prototypes in the ATD portion of the INP program.

Information security concerns preclude full disclosure of project efforts, research activities, and technology development plans within this exhibit. Detailed information will be provided to the Congressional oversight committees.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	145.637	133.828	134.128	-	134.128
Current President's Budget	141.151	133.828	127.363	-	127.363
Total Adjustments	-4.486	0.000	-6.765	-	-6.765
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.486	0.000			
• Program Adjustments	0.000	0.000	-6.765	-	-6.765
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Change Summary Explanation

Funding: FY 2025 decrease is due to a reduction in S&T Applied research primarily due to the completion of 4 INP Seedlings and 1 INP.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy	Date: March 2024
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602792N *I Innovative Naval Prototypes (INP) Applied Res*

Technical: No significant change

Schedule: No significant change

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 0000 / *Innovative Naval Prototypes (INP) Applied Res*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
0000: *Innovative Naval Prototypes (INP) Applied Res*	0.000	2.910	0.000	0.000	-	0.000	41.308	68.967	114.034	108.585	Continuing	Continuing

A. Mission Description and Budget Item Justification

The efforts described in this Project address the Applied Research associated with the Innovative Naval Prototypes (INP) Program. These investments represent game-changing technologies with the potential to revolutionize operational concepts. They are disruptive in nature, as they would dramatically change the way naval forces fight. Due to high technical risk, INPs typically have long duration but have no more than three years between decision points. They mature technologies from a Technology Readiness Level (TRL) of 2 or 3 to a TRL of 6. As such, INPs require both Budget Activity (BA) 2 and BA3 funding. The BA3 INP funds are specified in a separate Program Element (PE), 0603801N Innovative Naval Prototypes (INP) Adv Tec Dev. INPs do not develop hardware for service use; rather they provide feeder technology that can be demonstrated in prototypes in the 6.3 portion of the INP program. Developing INPs requires a systematic expansion and application of knowledge to develop useful materials, devices, and systems oriented toward the design and development of prototypes applicable to specific mission area requirements. The efforts funded within this PE translate promising basic research into solutions for broadly defined military needs. These efforts include developing breadboard hardware and algorithms that establish the initial feasibility and practicality of proposed solutions to technological challenges, such as concept exploration efforts, studies, investigations, and non-system specific technology efforts. The Department of the Navy would have to make significant acquisition decisions to integrate the new technological capabilities into naval warfighting systems. INPs are selected by a process that involves senior leadership in the Department of the Navy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: INP Applied Research	2.910	0.000	0.000	0.000	0.000
Description: The efforts described in this Project address the Applied Research associated with the Innovative Naval Prototypes (INP) Program. These investments represent game-changing technologies with the potential to revolutionize operational concepts. They are disruptive in nature, as they would dramatically change the way naval forces fight. Due to high technical risk, INPs typically have long duration but have no more than three years between decision points. They mature technologies from a Technology Readiness Level (TRL) of 2 or 3 to a TRL of 6. As such, INPs require both Budget Activity (BA) 2 and BA3 funding. The BA3 INP funds are specified in a separate Program Element (PE), 0603801N Innovative Naval Prototypes (INP) Adv Tec Dev. INPs do not develop hardware for service use; rather they provide feeder technology that can be demonstrated in prototypes in the 6.3 portion of the INP program. Developing INPs requires a systematic expansion and application of knowledge to develop useful materials, devices, and systems oriented toward the design and development of prototypes applicable to specific mission area requirements. The efforts funded within this PE translate promising basic research into solutions for broadly defined military needs. These efforts include developing breadboard hardware and algorithms that establish the initial feasibility and practicality of proposed solutions to technological challenges, such as concept exploration efforts, studies, investigations, and non-system specific					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 0000 / *Innovative Naval Prototypes (INP) Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
technology efforts. The Department of the Navy would have to make significant acquisition decisions to integrate the new technological capabilities into naval warfighting systems. INPs are selected by a process that involves senior leadership in the Department of the Navy. ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.910	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 3423 / *LOCUST*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
3423: *LOCUST*	0.000	24.134	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	24.134

A. Mission Description and Budget Item Justification

Adversary military modernization and increasing contested domains require a shift in approach "...to strike diverse targets inside adversary air and missile defense networks to destroy mobile power-projection platforms. This will include capabilities to enhance close combat lethality in complex terrain." The Low-Cost UAV Swarming Technology (LOCUST) effort will develop and deliver autonomy, C2 architecture, and a series of modular payloads on a robust, scalable, flexible, multifunctional UAV system; employable from surface, sub-surface, airborne, and ground manned and un-manned systems to provide a dispersed, resilient, and adaptive capability to gain a competitive military advantage. LOCUST will provide ISR and precision loitering munitions capable of being launched from air, surface, ground, and sub-surface platforms to conduct both singular and swarm operations across battlespace in conjunction with Joint and manned operations. It will demonstrate multi-domain launch and strike operations, heterogeneous air platform payloads, unmanned from unmanned operations, distributed control of the strike mission, and refined cost elements for critical technologies that have supply chain assurance addressed. The Activity identified in Project Unit 3423 specifically addresses Applied Research in support of the LOCUST INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: LOCUST	24.134	0.000	0.000	0.000	0.000
Description: Adversary military modernization and increasing contested domains require a shift in approach "...to strike diverse targets inside adversary air and missile defense networks to destroy mobile power-projection platforms. This will include capabilities to enhance close combat lethality in complex terrain." The Low-Cost UAV Swarming Technology (LOCUST) effort will develop and deliver autonomy, C2 architecture, and a series of modular payloads on a robust, scalable, flexible, multifunctional UAV system; employable from surface, sub-surface, airborne, and ground manned and un-manned systems to provide a dispersed, resilient, and adaptive capability to gain a competitive military advantage. LOCUST will provide ISR and precision loitering munitions capable of being launched from air, surface, ground, and sub-surface platforms to conduct both singular and swarm operations across battlespace in conjunction with Joint and manned operations. It will demonstrate multi-domain launch and strike operations, heterogeneous air platform payloads, unmanned from unmanned operations, distributed control of the strike mission, and refined cost elements for critical technologies that have supply chain assurance addressed.					
FY 2024 Plans: N/A					
FY 2025 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3423 / *LOCUST*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
N/A ***FY 2025 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	24.134	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• RDTEN/0603801N/3423: *LOCUST*	67.300	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	91.755
• RDTEN/0603382N/3423: *LOCUST*	40.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	50.156

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 3450 / *AMOS*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
3450: *AMOS*	0.000	8.070	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.070

A. Mission Description and Budget Item Justification

The Arctic Mobile Observing System (AMOS) effort will develop a prototype mobile sensing system that can be deployed anywhere in the Arctic via the development of a sea ice-based buoy node that will enable the critical infrastructure (power, communication, environmental intelligence) to provide the Navy with a persistent Arctic presence at lower cost than manned platforms. AMOS is a mobile observing system of systems node that enables 2-way communications, under-ice vehicle navigation, and extended-duration autonomy in the complex Arctic environment. AMOS will provide a persistent, mobile, autonomous capability to monitor the operational environment and maritime operations of potential adversaries in the Arctic Ocean. The Activity identified in Project Unit 3450 specifically addresses Applied Research in support of the AMOS INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: AMOS	8.070	0.000	0.000	0.000	0.000
Description: The Arctic Mobile Observing System (AMOS) effort will develop a prototype mobile sensing system that can be deployed anywhere in the Arctic via the development of a sea ice-based buoy node that will enable the critical infrastructure (power, communication, environmental intelligence) to provide the Navy with a persistent Arctic presence at lower cost than manned platforms. AMOS is a mobile observing system of systems node that enables 2-way communications, under-ice vehicle navigation, and extended-duration autonomy in the complex Arctic environment. AMOS will provide a persistent, mobile, autonomous capability to monitor the operational environment and maritime operations of potential adversaries in the Arctic Ocean. ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	8.070	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3450 / *AMOS*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• RDTEN/0603801N/3450: *AMOS*	4.478	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12.010

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 3451 / *CLAWS*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
3451: *CLAWS*	0.000	2.401	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.401

A. Mission Description and Budget Item Justification

The CLAWS INP effort will develop an autonomous unmanned undersea weapon system capable of providing offensive effects to the Combatant Commanders beyond Phase 0 inside the first island chain. It will clandestinely extend the reach of large UUVs and increase the mission areas into kinetic effects. CLAWS will deliver algorithms to enable all families of UUVs to operate in complex, dynamic and degraded environments. CLAWS will demonstrate autonomous missions in denied waters, develop and demonstrate autonomous technologies for survivability of large UUVs, and develop autonomy and launch capabilities for special mission payloads. CLAWS will be able to complete missions 1&2 against near peer adversary defenses, maintain critical communication with Navy C2/Fires and provide critical ISR information. The Activity identified in Project Unit 3451 specifically addresses Applied Research in support of the CLAWS INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: CLAWS ***Description:*** The CLAWS INP effort will develop an autonomous unmanned undersea weapon system capable of providing offensive effects to the Combatant Commanders beyond Phase 0 inside the first island chain. It will clandestinely extend the reach of large Unmanned Underwater Vehicles (UUVs) and increase the mission areas into kinetic effects. CLAWS will deliver algorithms to enable all families of UUVs to operate in complex, dynamic and degraded environments. CLAWS will demonstrate autonomous missions in denied waters, develop and demonstrate autonomous technologies for survivability of large UUVs, and develop autonomy and launch capabilities for special mission payloads. CLAWS will be able to complete missions 1&2 against near peer adversary defenses, maintain critical communication with Navy Command and Control (C2) and Fires and provide critical ISR information. ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A	2.401	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	2.401	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3451 / *CLAWS*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• RDTEN/0603801N/3451: *CLAWS*	7.810	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	35.667

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 3456 / *Full Spectrum Undersea Warfare*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
3456: *Full Spectrum Undersea Warfare*	0.000	38.412	42.570	42.049	-	42.049	32.955	29.487	21.073	15.472	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Full Spectrum Undersea Warfare (FSUSW) Project will develop new technology for offensive and defensive warfare conducted on the seabed, in the sea (i.e. subsea), and from the sea. FSUSW focuses on Theatre Undersea Warfare (TUSW), Joint Targeting and Strike, and Subsea and Seabed Warfare (SSW). There are five thrust areas of FSUSW that are key to enabling Chief of Naval Operations Guidance (CNOG), Distributed Maritime Operations (DMO), and the Commandant's Stand in Force with manned and unmanned warfighting capability. These thrust areas were specifically chosen in direct collaboration with STRATCOM, INDO-PACOM, Fleet and Undersea Warfare Commanders and validated with regular Flag officer engagements. These applied research efforts will enable future undersea weapon systems (e.g., Maritime Strike Tomahawk and ADCAP variants), COCOM campaigns, and operational plans. FSUSW thrust areas include 1) Undersea effectors, 2) Integrated expeditionary subsea system of systems, 3) Multi-Vehicle Torpedo Tube Development System (MVTTDS), 4) Undersea UAV for Over-The-Horizon (OTH) effects and 5) Undersea Launched Devices to enable Commanding Officers and Regional Combatant Commander effects. The five thrust areas are technically and operationally interconnected.

The efforts described in this Project address the Applied Research associated with the Innovative Naval Prototypes (INP) Program. These investments represent game changing technologies with the potential to revolutionize operational concepts. They are disruptive in nature, as they would dramatically change the way naval forces fight. Due to high technical risk, INPs typically have long duration but have no more than three years between decision points. They mature technologies from a Technology Readiness Level (TRL) of 2 or 3 to a
TRL of 6. As such, INPs require both Budget Activity (BA) 2 and BA3 funding. The BA3 INP funds are specified in a separate Program Element (PE), 0603801N Innovative Naval Prototypes (INP) Adv Tec Dev in the Undersea Warfare Efforts, Project 3458.

Information security concerns preclude fully detailed descriptions of project efforts, research activities, and technology development plans. Specific information on each project and activity will be provided separately to the Congressional oversight committees.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Title: Undersea Warfare Efforts	38.412	42.570	42.049	0.000	42.049
Description: The FSUSW Project will develop new technology for offensive and defensive warfare conducted on the seabed, in the sea (i.e. subsea), and from the sea. FSUSW will address three thrusts identified in the Undersea Warfare Development Command's document, "Full Spectrum Undersea Warfare Concept of Operations (CONOPS)". These thrusts are: advanced offensive missions for submarines, subsea and seabed warfare, and distributed undersea warfare. Distributed undersea warfare technology will enable full participation					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3456 / *Full Spectrum Undersea Warfare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
of all undersea warfare assets in the Navy's Distributed Maritime Operations concept. FSUSW missions this Project addresses include Anti-Submarine Warfare (ASW), Anti Surface Warfare, Strike, Intelligence, Surveillance, and Reconnaissance, Mine Warfare, and Subsea and Seabed Warfare (SSW). The FSUSW Project includes the Affordable Mobile ASW Surveillance System (AMASS) research and will leverage technology developed in the separate PE 06022792N, Project Unit 3450, AMOS. ***FY 2024 Plans:*** Continue: - Train and evaluate autonomy and automatic target recognition for joint undersea surveillance and targeting UUV and Submarine Launched UAV. - Train acoustic unmanned detection algorithms for specific joint undersea surveillance and targeting UUV tasks. - Independently and autonomously conduct specific undersea tasks. - Conduct scaled experimentation and full scale interoperability in support of manned platform task execution, - Conduct live, virtual, constructive experimentation. - Continue applied research development for larger undersea launched devices. - Continue development of navigation and power alternatives that could have a notable mission performance. - Design and initial prototype of undersea UAV and countermeasures with advanced autonomy, enabling warfighting task execution without humans in the loop for larger sized. Complete: - Spiral two of Submarine Launched UAV hardware and software development, incorporating autonomy functions for select missions. - 3rd generation UUV modular resilient design tool function. - Integration and testing of counter ISR&T devices spiral 1 form factor. - Automatic detection and classification spiral 1 suite for joint undersea surveillance and targeting (JUST). Initiate: - Spiral three for small diameter UAV and spiral two for decoy devices. - Train acoustic unmanned detection algorithms for specific joint undersea surveillance and targeting (JUST) UUV tasks. -Development of 6.75 inch autonomy for unmanned undersea and air vehicles. - Testing of autonomy for expeditionary undersea node. - Testing of autonomy for under the wall 2027 UUV.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3456 / *Full Spectrum Undersea Warfare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Virtual experimentation to evaluate 3rd generation UUV modular resilient design tool concepts within model based systems engineering framework.					
FY 2025 Base Plans: Continue: - Independently and autonomously conduct specific undersea tasks. - Continue development of power alternatives that could have a notable mission performance, shifting focus to expeditionary depot. - Testing of autonomy for under the wall 2027 UUV. - Testing of autonomy for expeditionary undersea node (depot). - Virtual experimentation to evaluate 3rd generation UUV modular resilient design tool concepts within model based systems engineering framework. - Spiral three for small diameter UAV and spiral two for decoy devices. - Development of 6.75 inch autonomy for unmanned undersea counter ISR&T and air vehicles. - Conduct live, virtual, constructive experimentation. - Continue applied research development for larger undersea launched devices. Complete: - Undersea munitions effects characterization phase 1. - Training acoustic unmanned detection algorithms for specific joint undersea surveillance and targeting (JUST) UUV tasks. - Train acoustic unmanned detection algorithms for specific joint undersea surveillance and targeting UUV tasks. - Pallas intelligent subsea power condition and power distribution design - Development of navigation alternatives that could have a notable mission performance. Initiate: - Undersea munitions effects characterization phase 2 - 3rd generation UUV modular resilient design tool validation - Large UUV virtual twin operability validation - Processing, planning and troubleshooting intelligence for intelligent subsea depot (node) - Validation and scaled testing for large UUV (physical and charging rate) expeditionary docking and charging (to accommodate varying UUV shapes) - Integrated design for 6.75 inch submarine launched countermeasure device					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3456 / *Full Spectrum Undersea Warfare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Integrated design for 6.75 inch submarine launched air vehicles. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no significant change from FY 2024 to FY 2025 in Proj: 3456 Full Spectrum Undersea Warfare.					
Accomplishments/Planned Programs Subtotals	38.412	42.570	42.049	0.000	42.049

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy												Date: March 2024
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 3461 / *MASS*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
3461: *MASS*	0.000	4.801	7.920	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12.721

Note

This activity is being broken out from PE 0603801N Project Unit 3459 Super Swarm to provide increased visibility and focus on this technical challenge area at the BA2 level.

A. Mission Description and Budget Item Justification

The rising use of air, surface, and sub-surface unmanned and autonomous systems requires a paradigm shift in the development, production, and life-cycle management of these systems in order to gain a competitive advantage against adversarial capabilities as well as allow for fielding of significant numbers (1000's to 10,000's) in an increasingly budget-constrained acquisition environment. The growth in rapid prototyping and additive manufacturing technologies presents an opportunity to capitalize on these advances though applied research efforts focused on scale-up both in terms of rapid production of relevant quantities as well as greatly increasing the physical size of platforms produced far beyond what is currently achievable. Manufacturing of Autonomous Systems at Scale (MASS) efforts will utilize wide range of advanced manufacturing methods combined with adaptive digital design processes with "Design for Low-Cost Platform Attriteability" as a major attribute to avoid the platform cost growths normally associated with exquisite systems development. This also represents the ability to rapidly modify platform attributes based on evolving operational needs and quickly insert into build process without costly retooling. Secondary goals focus on increasing commonality of critical components across platforms and design of these in modular fashion in order to manage supply chain vulnerability. Lastly, the project will look at ability to place manufacturing capability as far forward/afloat as possible to reduce the logistics tail and speed delivery of capability at-scale into the fleet. The activity identified in Project Unit 3461 MASS specifically addresses Applied Research in support of the MASS effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Manufacture of Autonomous Systems at Scale (MASS)	4.801	7.920	0.000	0.000	0.000
Description: The rising use of air, surface, and sub-surface unmanned and autonomous systems requires a paradigm shift in the development, production, and life-cycle management of these systems in order to gain a competitive advantage against adversarial capabilities as well as allow for fielding of significant numbers (1000's to 10,000's) in an increasingly budget-constrained acquisition environment. The growth in rapid prototyping and additive manufacturing technologies presents an opportunity to capitalize on these advances though applied research efforts focused on scale-up both in terms of rapid production of relevant quantities as well as greatly increasing the physical size of platforms produced far beyond what is currently achievable. Manufacturing of Autonomous Systems at Scale (MASS) efforts will utilize wide range of advanced manufacturing methods combined with adaptive digital design processes with "Design for Low-Cost Platform Attriteability" as a major attribute to avoid the platform cost growths normally associated with exquisite systems development. This also represents the ability to rapidly modify platform attributes based on evolving operational needs and					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3461 / *MASS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
quickly insert into build process without costly retooling. Secondary goals focus on increasing commonality of critical components across platforms and design of these in modular fashion in order to manage supply chain vulnerability. Lastly, the project will look at ability to place manufacturing capability as far forward/afloat as possible to reduce the logistics tail and speed delivery of capability at-scale into the fleet. The activity identified in Project Unit 3461 MASS specifically addresses Applied Research in support of the MASS effort. ***FY 2024 Plans:*** - Continue Manufacturing of Autonomous Systems at Scale (MASS) efforts to utilize wide range of advanced manufacturing methods for based on design for attainability. - Continue/Complete modeling and simulation for composite and metallic large structural alternatives for attainable Super Swarm (Project 3459) agents and Deployment and Employment of Autonomous Long Range Systems (DEALRS) (Project 3462) swarm delivery marsupial host platforms. - Continue/Complete analysis of supply chain assurance and component manufacturing methodologies for platforms of interest. - Continue/Complete ruggedization of equipment for forward manufacturing incorporating supply chain considerations. - Complete digital design efforts to couple rapid adaptive processes focused on large scale (both size and quantity) platforms of interest. ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in funding from FY 2024 to FY 2025 in Proj 3461 MASS is due to the planned completion of Applied Research efforts.					
Accomplishments/Planned Programs Subtotals	4.801	7.920	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• RDTEN/0603801N/3461: *mASS*	3.957	4.950	4.950	-	4.950	0.000	0.000	0.000	0.000	0.000	14.740

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3461 / *MASS*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy										Date: March 2024		
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 3462 / *DEALRS*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
3462: *DEALRS*	0.000	6.722	10.890	6.930	-	6.930	0.000	0.000	0.000	0.000	0.000	24.542

Note

This activity is being broken out from PE 0603801N Project Unit 3459 Super Swarm to provide increased visibility and focus on this technical challenge area at the BA2 level.

A. Mission Description and Budget Item Justification

Adversary Anti-Access and Area Denial (A2/AD) capabilities continue to improve but remain focused on targeting specific US and joint force capabilities. The Deployment and Employment of Autonomous Long Range Systems (DEALRS) project will develop technologies that sidestep, operate below the threshold, or deplete adversary A2/AD capabilities. DEALRS will specifically develop technologies to enable low-cost unmanned systems that can maneuver across theater-level ranges to penetrate, operate within, and launch strikes from within adversary A2/AD system coverage. This project will develop technologies to increase the range and endurance of autonomous systems while maintaining tactically relevant speeds, loiter times, and signatures with low cost. It will also address technologies that enable the marsupial launch of terminal engagement autonomous unmanned systems across all domains from larger and/or longer-range host systems that bring them to the launch area and the associated technologies needed to ensure roboticized and autonomous startup and launch of the marsupial systems without human intervention. The Activity identified in Project Unit 3462 DEALRS specifically addresses Applied Research in support of the INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: DEALRS	6.722	10.890	6.930	0.000	6.930
FY 2024 Plans: Continue: - Efforts to explore concepts for the DEALRS across all domains. Efforts will focus on swarm agent range/ endurance enhancements as well as marsupial host / children swarm delivery concepts to allow extremely large numbers of systems to traverse long distances with minimal human intervention to bring them into the operations area. - Continue concept exploration of alternative launcher methodologies to increase numbers of swarm platforms can be transported and deployed. Effort will be informed by FY22 / early FY23 Super Swarm (Project 3459) and Manufacture of Autonomous Systems at Scale (MASS) (Project 3461) activities. - Continue to demonstrate concepts for DEALRS across all domains. Efforts will focus on scaling up promising concepts to demonstrate trans-Oceanic deployment and employment of large numbers of unmanned systems to deliver desired effects in the areas of operation.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3462 / *DEALRS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Continue efforts for scale-up of promising full-system designs and components for objective Deployment and Employment of Autonomous Long Range Systems (DEALRS) swarm delivery marsupial host platform. Design will be informed by FY22 and early FY23 activities. Initiate: - Construction of test-bed sections of marsupial platforms for use in evaluating sub-components such as those needed for needed for trans-oceanic operations as well as payload integration methodologies. ***FY 2025 Base Plans:*** Complete applied research efforts that are focused on: - Swarm agent range/endurance enhancements as well as marsupial host / children swarm delivery concepts; - Alternative launcher methodologies to increase numbers of swarm platforms; - Scaling up promising concepts to demonstrate trans-Oceanic deployment; - Swarm delivery marsupial host platforms; - Evaluating sub-components using platform test-bed section. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in funding from FY 2024 to FY 2025 in Proj 3462 DEALRS is due to planned end of BA2 activities in FY25 and ramp-up of BA3 activities in FY26.					
Accomplishments/Planned Programs Subtotals	6.722	10.890	6.930	0.000	6.930

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• RDTEN/0603801N/3462: *DEALRS*	4.948	5.940	5.940	-	5.940	7.920	7.686	0.000	0.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 3463 / *MATes*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
3463: *MATes*	0.000	6.242	9.900	9.900	-	9.900	4.950	4.804	0.000	0.000	0.000	35.796

Note

This activity is being broken out from PE 0603801N Project Unit 3459 Super Swarm to provide increased visibility and focus on this technical challenge area at the BA2 level.

A. Mission Description and Budget Item Justification

Traditionally, the utilization of autonomous systems is either operationally segregated from manned operations or requires a significant amount of human oversight when operating in conjunction with manned assets, which mitigates some of the advantage from using them. The goal of the Manned and Autonomous Teams (MATes) project is to develop autonomic robotic technology and collaborative autonomous behaviors that seamlessly operate across all domains in conjunction with manned units, allowing for real-time adaptation and optimization in a manner that streamlines the element of human interaction needed to share mission goals. This technology will monitor human or manned system teammate state, behavior, mission, and adversary threat status to anticipate and act in a tactically appropriate manner that is predictable, communicable, and trusted by the human/manned teammates and which enables autonomous system optimization in coordination with the human/manned teammate and mission objectives. Intuitive human/autonomous system interfaces will be developed to allow focus on higher-order decision-making tasks by the operators allowing for large numbers of autonomous systems (100's or 1000's) to be managed in support of manned operations. The activity identified in Project Unit 3463 MATes specifically addresses Applied Research in support of the MATes effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Manned and Autonomous Teams	6.242	9.900	9.900	0.000	9.900
Description: Traditionally, the utilization of autonomous systems is either operationally segregated from manned operations or requires a significant amount of human oversight when operating in conjunction with manned assets, which mitigates some of the advantage from using them. The goal of the Manned and Autonomous Teams (MATes) project is to develop autonomic robotic technology and collaborative autonomous behaviors that seamlessly operate across all domains in conjunction with manned units, allowing for real-time adaptation and optimization in a manner that streamlines the element of human interaction needed to share mission goals. This technology will monitor human or manned system teammate state, behavior, mission, and adversary threat status to anticipate and act in a tactically appropriate manner that is predictable, communicable, and trusted by the human/manned teammates and which enables autonomous system optimization in coordination with the human/manned teammate and mission objectives. Intuitive human/autonomous system interfaces will be developed to allow focus on higher-order decision-making tasks by the operators allowing for large numbers of autonomous systems (100's or 1000's) to be managed in support of manned operations. The					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3463 / *MATes*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
activity identified in Project Unit 3463 MATes specifically addresses Applied Research in support of the MATes effort. ***FY 2024 Plans:*** Continue: - Efforts to explore autonomy, perception, and command and control (C2) concepts for Manned and Autonomous Teams (MATES) conducting complex multi-domain operations in proximity to each other along a spectrum of missions. Autonomous systems will be swarm agents developed through Super Swarm (Project 3459) and Deployment and Employment of Autonomous Long Range Systems (DEALRS) (Project 3462). Autonomy, perception, and agent/ vehicle control schemes will be informed by Manufacture of Autonomous Systems at Scale (MASS) (Project 3461). Missions range from fully autonomous to highly supervised requiring an agile optimization as real-world factors change. - Activities researching an artificial theory of mind for Super Swarm (Project 3459) agents, allowing them to perceive current manned blue teammate behavior states and derive and act on anticipated future states and potential reactions to state changes. Complete efforts to explore autonomy, perception, and command and control (C2) concepts for MATES conducting complex multi-domain operations in proximity to each other along a spectrum of missions. Initiate: - Artificial theory of mind regarding other blue, red, and white manned and unmanned agents, allowing for the projection/anticipation of intent and future states of those agents. ***FY 2025 Base Plans:*** Continue all activities from FY24 to include: - Efforts to explore autonomy, perception, and command and control (C2) concepts for Manned and Autonomous Teams (MATES) conducting complex multi-domain operations in proximity to each other along a spectrum of missions. Autonomous systems will be swarm agents developed through Super Swarm (Project 3459) and Deployment and Employment of Autonomous Long Range Systems (DEALRS) (Project 3462). Autonomy, perception, and agent/ vehicle control schemes will be informed by Manufacture of Autonomous Systems at Scale (MASS) (Project 3461). Missions range from fully autonomous to highly supervised requiring an agile optimization as real-world factors change.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3463 / *MATes*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Activities researching an artificial theory of mind for Super Swarm (Project 3459) agents, allowing them to perceive current manned blue teammate behavior states and derive and act on anticipated future states and potential reactions to state changes. - Artificial theory of mind regarding other blue, red, and white manned and unmanned agents, allowing for the projection/anticipation of intent and future states of those agents. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no change in funding from FY 2024 to FY 2025 in Proj: 3463 MATes					
Accomplishments/Planned Programs Subtotals	6.242	9.900	9.900	0.000	9.900

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• RDTEN/0603801N/3463: *MATes*	3.958	4.950	4.950	-	4.950	13.860	13.451	0.000	0.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 3506 / *Compact Agile Interceptors*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
3506: *Compact Agile Interceptors*	0.000	0.000	1.500	2.000	-	2.000	0.000	0.000	0.000	0.000	0.000	3.500

A. Mission Description and Budget Item Justification

The US Navy lacks both in capability and capacity interceptors that have the ability to defeat complex raids of hypersonic missiles, cruise missiles and surface vessels. The Compact Agile Interceptor INP will use small diameter missiles to achieve a higher packing efficiency. Disruptive seeker technology, which weighs mere ounces will replace wasted pounds of payload weight and allow for higher speed missile interceptors. The seedling will evaluate multiple propulsion technologies including solid fuel ramjets, highly loaded grain propellants, and active throttling of solid rockets. The missiles airframe may be staged to enable the interceptor(s) the greatest agility to overmatch the threat. Multiple warhead technologies will be evaluated including reactive materials, kinetic warheads, and tailorable fragment warheads. The Activity identified in Project Unit 3506 specifically addresses Applied Research in support of the Compact Agile Interceptors INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Title: Compact Agile Interceptors	0.000	1.500	2.000	0.000	2.000
Description: The US Navy lacks both in capability and capacity interceptors that have the ability to defeat complex raids of hypersonic missiles, cruise missiles and surface vessels. The Compact Agile Interceptor INP will use small diameter missiles to achieve a higher packing efficiency. Disruptive seeker technology, which weighs mere ounces will replace wasted pounds of payload weight and allow for higher speed missile interceptors. The seedling will evaluate multiple propulsion technologies including solid fuel ramjets, highly loaded grain propellants, and active throttling of solid rockets. The missiles airframe may be staged to enable the interceptor(s) the greatest agility to overmatch the threat. Multiple warhead technologies will be evaluated including reactive materials, kinetic warheads, and tailorable fragment warheads. The Activity identified in Project Unit 3506 specifically addresses Applied Research in support of the Compact Agile Interceptors INP effort.					
FY 2024 Plans: Initiate: - Initial Mission Analysis to establish Capability & Limitations of Engagement Envelope - Propulsion/Payload Study to establish Missile Architecture and Technology Design Objectives					
FY 2025 Base Plans: Initiate - Independent Cost Estimate for the proposed INP program					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3506 / *Compact Agile Interceptors*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Procurement of 2-3 flight test units with selected propulsion concept - Live fire proof of concept flight demonstration of propulsion concept Complete - Mission Analysis to establish Capability & Limitations of Engagement Envelope - Propulsion/Payload Study to establish Missile Architecture and Technology Design Objectives ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in funding from FY 2024 to FY 2025 in Proj: 3506 Compact Agile Interceptors is due to procurement of test articles to conduct live fire demonstration of propulsion concept.					
Accomplishments/Planned Programs Subtotals	0.000	1.500	2.000	0.000	2.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 3507 / *Chimera*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
3507: *Chimera*	0.000	0.000	15.537	34.915	-	34.915	38.809	25.606	7.757	7.920	Continuing	Continuing

A. Mission Description and Budget Item Justification

Details at a higher classification

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Chimera	0.000	15.537	34.915	0.000	34.915
FY 2024 Plans: Details at a higher classification					
FY 2025 Base Plans: Continue: - Development of Information Warfare applied research efforts. Details at a higher classification					
FY 2025 OCO Plans: N/A					
FY 2024 to FY 2025 Increase/Decrease Statement: The increase in funding from FY 2024 to FY 2025 in Proj 3507 Chimera is to continue development of software capabilities while simultaneously beginning development of hardware. Additional details can be provided at a higher classification.					
Accomplishments/Planned Programs Subtotals	0.000	15.537	34.915	0.000	34.915

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 3508 / *Curious Orion*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
3508: *Curious Orion*	0.000	0.000	1.800	1.800	-	1.800	0.000	0.000	0.000	0.000	0.000	3.600

A. Mission Description and Budget Item Justification

The USN lacks a breadth of tools to find fix and finish high end maritime threats across specific environments and conditions. Curious Orion will develop a unique capability to exploit specific phenomenology produced by submerged bodies in operationally relevant areas that are of specific interest to the U.S. Navy. The Activity identified in Project Unit 3508 specifically addresses Applied Research in support of the Curious Orion INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Curious Orion	0.000	1.800	1.800	0.000	1.800
Description: The USN lacks a breadth of tools to find fix and finish high end maritime threats across specific environments and conditions. Curious Orion will develop a unique capability to exploit specific phenomenology produced by submerged bodies in operationally relevant areas that are of specific interest to the U.S. Navy. The Activity identified in Project Unit 3508 specifically addresses Applied Research in support of the Curious Orion INP effort. ***FY 2024 Plans:*** FY 2024: -Initiate updated detection algorithms and clutter reduction techniques -Commence data collections to validate detection models and start development of military utility analysis. -Initiate sensor design based upon potential platforms ***FY 2025 Base Plans:*** -Continue detection algorithms and clutter reduction techniques -Expand data collections to additional relevant operational areas. Data will be used to validate detection models and start development of military utility analysis. -Continue sensor design based upon potential platforms ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no funding change from FY 2024 to FY 2025 in Proj: 3508 Curious Orion.					
Accomplishments/Planned Programs Subtotals	0.000	1.800	1.800	0.000	1.800

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3508 / *Curious Orion*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 5891 / *INP Operational Analysis, Support and Experimentation Activity*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
5891: *INP Operational Analysis, Support and Experimentation Activity*	0.000	4.327	2.000	2.000	-	2.000	2.000	1.903	1.948	1.989	Continuing	Continuing

A. Mission Description and Budget Item Justification

Effective in FY23, efforts in the Directed Energy/Electric Weapons Activity within Proj: 3400 INP Applied Research in PE 0602792N are broken out into this stand-alone Proj: 5891 Operational Analysis, Support and Experimentation Activity to broaden the spectrum of promising applied research efforts investigated within this Project and to provide additional acquisition oversight, fiscal clarity, and adherence to financial management practices at the Project level.

The efforts described in this Project address the Applied Research associated with Innovative Naval Prototype (INP) Operational Analysis, Support and Experimentation Activity efforts that are used to further explore the development of future INP topics and proposals. These efforts evaluate, study/analyze and/or perform any basic applied research-focused investigative experimentation activities which will support the identification of potential INP topics for future investment consideration. The use of Operational Analysis, Support and Experimentation Activity funds can help accelerate and/or create a flexible response to emerging requirements or threats by identifying a potential INP topic for consideration in a more time-efficient and/or effective manner.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Title: INP Operational Analysis, Support and Experimentation	4.327	2.000	2.000	0.000	2.000
Description: Effective in FY23, efforts in the Directed Energy/Electric Weapons Activity within Proj: 3400 INP Applied Research in PE 0602792N are broken out into this stand-alone Proj: 5891 Operational Analysis, Support and Experimentation to broaden the spectrum of promising applied research efforts investigated within this Project and to provide additional acquisition oversight, fiscal clarity, and adherence to financial management practices at the Project level. The efforts described in this Project address the Applied Research associated with Innovative Naval Prototype (INP) Operational Analysis, Support and Experimentation efforts that are used to further explore the development of future INP topics and proposals. These efforts evaluate, study/analyze and/or perform any basic applied research-focused investigative experimentation activities which will support the identification of potential INP topics for future investment consideration. The use of Operational Analysis, Support and Experimentation funds can help accelerate and/or create a flexible response to emerging requirements or threats by identifying a potential INP topic for consideration in a more time-efficient and/or effective manner.					
FY 2024 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5891 / *INP Operational Analysis, Support and Experimentation Activity*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Continue program support and applied research activities associated with exploring the development of future INP topics and proposals. - Evaluate, study/analyze and/or perform any basic applied research-focused investigative experimentation activities to inform and identify potential future INP investment areas. ***FY 2025 Base Plans:*** - Continue program support and applied research activities associated with exploring the development of future INP topics and proposals. - Evaluate, study/analyze and/or perform any basic applied research-focused investigative experimentation activities to inform and identify potential future INP investment areas. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** There is no change in funding from FY 2024 to FY 2025 in Proj: 5891 INP Operational Analysis, Support and Experimentation					
Accomplishments/Planned Programs Subtotals	4.327	2.000	2.000	0.000	2.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5892 / *Full Spectrum Information Warfare*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
5892: *Full Spectrum Information Warfare*	0.000	3.880	7.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.880

A. Mission Description and Budget Item Justification

The Full Spectrum Information Warfare (FSIW) effort will develop integrated holistic Counter-C5ISRT capability, techniques and CONOPS to defeat adversarial capacity growth to include the effects of the maritime environment on tactics and effectiveness in order to provide the proliferation of C-C5ISRT payloads on small to large platforms and software to calculate EM propagation and take into account environmental conditions from "DC to Daylight" e.g. from VLF/HF through optical frequencies to optimize both passive and active C-C5ISRT technology use.

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the FSIW INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Full Spectrum Information Warfare	3.880	7.000	0.000	0.000	0.000
Description: The Full Spectrum Information Warfare (FSIW) effort will develop integrated holistic Counter-C5ISRT capability, techniques and CONOPS to defeat adversarial capacity growth to include the effects of the maritime environment on tactics and effectiveness in order to provide the proliferation of C-C5ISRT payloads on small to large platforms and software to calculate EM propagation and take into account environmental conditions from "DC to Daylight" e.g. from VLF/HF through optical frequencies to optimize both passive and active C-C5ISRT technology use. The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5892 / *Full Spectrum Information Warfare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations. The Activity identified in this Project Unit specifically addresses Applied Research in support of the FSIW INP effort. ***FY 2024 Plans:*** Complete applied research in support of the development of Full Spectrum Information Warfare (FSIW). Specific efforts include the following: - Develop a test scenario under real world conditions based on one of the EW Field Demos (for example in the LSE or Rough Series). Identify cases of observed changes in range, clutter, and detectability and compare sensor performance to that predicted under those conditions. - Analyze emerging material science for countermeasure applications. - Investigate cyber vulnerabilities in imagers and AI/ML algorithms. - Investigate a high-level architecture for MUM-T employment. - Extend current ISR planning aids to include both fixed and mobile surface and airborne systems. ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in funding from FY 2024 to FY 2025 in Proj: 5892 Full Spectrum Information Warfare is due to program completion.					
Accomplishments/Planned Programs Subtotals	3.880	7.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5892 / *Full Spectrum Information Warfare*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 5893 / *Decision Superiority*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
5893: *Decision Superiority*	0.000	1.649	1.200	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.849

A. Mission Description and Budget Item Justification

The Decision Superiority (DS) effort will improve the speed and quality of decisions when conducting undersea warfare activities at the tactical edge that does not require persistent communication reach back. This will be achieved through the development of Decision Aids (DAs) using a holistic Human-Machine-Teaming (HMT) and training approaches and processes to optimize warfighter decisions (e.g. sonar operations, maintenance repair, personnel rotations).

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the Decision Superiority INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Title: Decision Superiority	1.649	1.200	0.000	0.000	0.000
Description: The Decision Superiority (DS) effort will improve the speed and quality of decisions when conducting undersea warfare activities at the tactical edge that does not require persistent communication reach back. This will be achieved through the development of Decision Aids (DAs) using a holistic Human-Machine-Teaming (HMT) and training approaches and processes to optimize warfighter decisions (e.g. sonar operations, maintenance repair, personnel rotations). The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5893 / *Decision Superiority*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
The Activity identified in this Project Unit specifically addresses Applied Research in support of the Decision Superiority INP effort. ***FY 2024 Plans:*** Complete applied research in support of the development of Decision Superiority. Specific efforts include the following: - Studies and operational characterization of problems, tasks, data, decisions, and metrics related to undersea warfare on submarines to support decision superiority research efforts. - Modeling and simulation architecture development to inform iterative development, training, and evaluation in a realistic mission environment that will be used to support human machine teaming design and evaluation analysis. This analysis will support decision making in the submarine control room. - Develop adaptive training processes informed by identified warfighter decisions and human machine teaming designs to improve decision making on submarines and impact operational metrics. - Develop and conduct initial research studies related to mental endurance and decision making performance to inform technologies for personnel scheduling. ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in funding from FY 2024 to FY 2025 in Proj: 5893 Decision Superiority is due to program completion.					
Accomplishments/Planned Programs Subtotals	1.649	1.200	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5894 / *Direct-X*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
5894: *Direct-X*	0.000	2.425	0.000	2.000	-	2.000	0.000	0.000	0.000	0.000	0.000	4.425

A. Mission Description and Budget Item Justification

The Direct-X effort will develop space based ISRT with direct downlink into kill chains supporting all domain effects in a Distributed Maritime Operations construct. The focus is on advances in the following lines of effort:
P1 - Orchestration, tasking and resilient C3
P2 - Threat prioritized low cost on orbit payloads
P3 - On orbit processing and analyitic AI/ML
P4 - Direct-to-shooter kill chains
P5 - On orbit effects

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the Direct-X INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Direct-X	2.425	0.000	2.000	0.000	2.000
Description: The Direct-X effort will develop space based ISRT with direct downlink into kill chains supporting all domain effects in a Distributed Maritime Operations construct. The focus is on advances in the following lines of effort: P1 - Orchestration, tasking and resilient C3 P2 - Threat prioritized low cost on orbit payloads P3 - On orbit processing and analyitic AI/ML P4 - Direct-to-shooter kill chains P5 - On orbit effects The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5894 / *Direct-X*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations. The Activity identified in this Project Unit specifically addresses Applied Research in support of the Direct-X INP effort. ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** Complete: - Award contracts to Industry vendors for FY26 program start. - Higher fidelity M&S analysis of the INP Architecture for Scenario/Use Case performance. Continue: - Developing the Naval digital C5ISRT INP environment (model) for incorporating higher fidelity M&S tools and capabilities for supporting integrated "end-to-end" Title 10 Military Utility Assessments. - Evaluating the INP heterogeneous System-of-Systems Architecture by incorporating refined digital models of Industry proposed solutions, and assess Naval Scenarios/Use Case performance. Initiate: - Receive formal proposals from designated Industry vendors, and begin contracting actions (e.g. completing Technical Evaluations, and starting Award process). ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in funding from FY 2024 to FY 2025 in Proj 5894 Direct-X is due to the completion of the Seedling in FY 2025 after a funding gap year in FY 2024.					
Accomplishments/Planned Programs Subtotals	2.425	0.000	2.000	0.000	2.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5894 / *Direct-X*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5895 / *DMO through IAS*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
5895: *DMO through IAS*	0.000	2.861	4.500	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.361

A. Mission Description and Budget Item Justification

The Distributed Maritime Operations though Intelligent Autonomous Systems (DMO-IAS) effort will demonstrate IAS teams that can maneuver and close sea denial detect through engage/ assess kill-chains over tactically relevant ranges and extended mission durations, that maintain survivability through avoidance of detection, and that do not rely on vulnerable command and control systems. It will explore novel sensing, autonomy, and communications approaches that can be applied to other Navy IAS programs that enable robust, resilient IAS kill-chains.

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the DMO through IAS INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: DMO through IAS	2.861	4.500	0.000	0.000	0.000
Description: The Distributed Maritime Operations though Intelligent Autonomous Systems (DMO-IAS) effort will demonstrate IAS teams that can maneuver and close sea denial detect through engage/ assess kill-chains over tactically relevant ranges and extended mission durations, that maintain survivability through avoidance of detection, and that do not rely on vulnerable command and control systems. It will explore novel sensing, autonomy, and communications approaches that can be applied to other Navy IAS programs that enable robust, resilient IAS kill-chains. The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5895 / *DMO through IAS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations. The Activity identified in this Project Unit specifically addresses Applied Research in support of the DMO through IAS INP effort. ***FY 2024 Plans:*** - Complete applied research efforts in support of the development of DMO through IAS. Specific efforts include the following: - Conduct operationally oriented study and simulation experiment to refine the potential of AI enabled IAS platforms - conducting collaborative DMO. - Integrate autonomy, onboard AI processing, and comms modalities onto surrogate UxS (draw from existing INP efforts). - Conduct live, force-on-force experiment against fleet assets to determine and validate kill-chain vulnerabilities and opportunities. - Lessons learned will inform efficacy and impact of a potential follow-on effort along with defined technical objectives and proposed paths for autonomy, sensing, AI, platform performance, and C2. ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in funding from FY 2024 to FY 2025 in Proj: 5895 DMO through IAS is due to program completion.					
Accomplishments/Planned Programs Subtotals	2.861	4.500	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5895 / *DMO through IAS*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy										Date: March 2024		
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 5896 / *Echidna*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
5896: *Echidna*	0.000	1.724	0.750	8.729	-	8.729	0.000	0.000	0.000	0.000	0.000	11.203

A. Mission Description and Budget Item Justification

The Echidna effort will develop additive capability and additive capacity which is classified. It will explore new mine development, to include improved sensing for a highly complex environment and target, improved lethality, endurance and power technologies, cost-effective additive manufacturing subcomponent technologies, and flexible, platform-agnostic engineering design (to include safe & arming device) to allow for novel and adaptable concepts of employment (CONEMP)

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the Echidna INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Echidna	1.724	0.750	8.729	0.000	8.729
Description: The Echidna effort will develop additive capability and additive capacity which is classified. It will explore new mine development, to include improved sensing for a highly complex environment and target, improved lethality, endurance and power technologies, cost-effective additive manufacturing subcomponent technologies, and flexible, platform-agnostic engineering design (to include safe & arming device) to allow for novel and adaptable concepts of employment (CONEMP) The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5896 / *Echidna*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
The Activity identified in this Project Unit specifically addresses Applied Research in support of the Echidna INP effort. ***FY 2024 Plans:*** Complete Phase 1 applied research studies to support the development of the Echidna INP, including the following: - Thrust 1: Lethality study, to include M&S for housing, and comparative analysis with legacy warhead and new explosive formulation - Thrust 2: Analysis of Alternatives (AoA) for dynamic sensing environment, target analysis - Thrust 3: Updated ONR Subsea & Seabed Power (SSP) Roadmap to address Mining gaps with established T/O endurance parameters, environmental considerations, approach for deployment. - Thrust 4: Additive manufacturing study for subcomponent technologies, to include prototype application - Notional integration schedule for subcomponent design (Thrust 1-3) - Notional parallel subcomponent design and comparative analysis of test articles in representative environment (Thrust 4) ***FY 2025 Base Plans:*** Initiate full design, development, and fabrication for Echidna system subcomponents, to include: - Mechanical design and development of housing, anchor and mooring subsystem(s) - Electrical design and development of subcomponent assembly, to include design for subcomponent power budget - Energetic warhead design and initial development ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in funding from FY 2024 to FY 2025 in Project 5896 Echidna is due to the expansion of applied research studies to include initiation of full design, development, and fabrication for mechanical, electrical, and energetic system subcomponents.					
Accomplishments/Planned Programs Subtotals	1.724	0.750	8.729	0.000	8.729

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5896 / *Echidna*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 5897 / *Hypersonic Technologies*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
5897: *Hypersonic Technologies*	0.000	7.760	6.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.760

A. Mission Description and Budget Item Justification

The Hypersonic Technologies effort will develop technologies that support the unique operational and environment aspects of hypersonic weapon systems. Efforts include: advanced materials; propulsion; stability and control; seekers and sensors; guidance, navigation, and control; and payloads and energetics.

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the Hypersonic Technologies INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Title: Hypersonic Technologies	7.760	6.000	0.000	0.000	0.000
Description: The Hypersonic Technologies effort will develop technologies that support the unique operational and environment aspects of hypersonic weapon systems. Efforts include: advanced materials; propulsion; stability and control; seekers and sensors; guidance, navigation, and control; and payloads and energetics. The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations. The Activity identified in this Project Unit specifically addresses Applied Research in support of the Hypersonic Technologies INP effort.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5897 / *Hypersonic Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
FY 2024 Plans: Complete applied research in support of the development of Hypersonic Technologies for risk reduction for a potential future INP. Specific efforts include the following: - Award Option One contract(s) for key component technology element(s) that shall culminate in an S&T tailored Critical Design Review(s). - Initiate award of additional contracting option(s), leveraging critical design(s), in key component technology element(s). ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in funding from FY 2024 to FY 2025 in Proj: 5897 Hypersonic Technologies is due to program completion.					
Accomplishments/Planned Programs Subtotals	7.760	6.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5899 / *Precision Fire Control*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
5899: *Precision Fire Control*	0.000	22.833	22.261	14.040	-	14.040	4.880	0.932	0.000	0.000	0.000	64.946

A. Mission Description and Budget Item Justification

The Precision Fire Control (PFC) effort will develop a fire control architecture that delivers high precision, high update rate guidance solutions to enable cruise missile defense with small, low-cost interceptors and dramatically increase number of interceptors per ship or Expeditionary Advanced Base. It will develop fire control capability for multiple interceptors (missiles and gun projectiles) that contribute to layered defense of surface combatants, expeditionary forces, and homeland protection. Develop PFC-enabled low-cost missile (LCM) based on existing 2.75" rocket components.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the PFC INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Precision Fire Control	22.833	22.261	14.040	0.000	14.040
Description: The Precision Fire Control (PFC) effort will develop a fire control architecture that delivers high precision, high update rate guidance solutions to enable cruise missile defense with small, low-cost interceptors and dramatically increase number of interceptors per ship or Expeditionary Advanced Base. It will develop fire control capability for multiple interceptors (missiles and gun projectiles) that contribute to layered defense of surface combatants, expeditionary forces, and homeland protection. Develop PFC-enabled low-cost missile (LCM) based on existing 2.75" rocket components. The Activity identified in this Project Unit specifically addresses Applied Research in support of the PFC INP effort.					
FY 2024 Plans: FY24 Plan: - Continue applied research of a fire control architecture that delivers high precision and update rate guidance solution to enable cruise missile defense with multiple low-cost interceptors (missiles and gun projectiles). - Complete requirements for Precision Fire-Control (PFC) technologies and interceptors [Hyper Velocity Projectile (HVP) and Low Cost Terminal Defense Missile (LCTDM)]. - Continue prototyping of PFC fire control elements and HVP flight test units. - Conduct preliminary design studies for PFC technologies and LCTDM.					
FY 2025 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5899 / *Precision Fire Control*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Continue - Applied research of a fire control architecture that delivers high precision and update rate guidance solution to enable cruise missile defense with multiple low-cost interceptors (missiles and gun projectiles). - Prototyping of PFC fire control elements and HVP flight test units. Complete - Design studies for PFC technologies and LCTDM. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in funding from FY 2024 to FY 2025 in Proj 5899 Precision Fire Control is due to completion of PFC and LCTDM design activities.					
Accomplishments/Planned Programs Subtotals	22.833	22.261	14.040	0.000	14.040

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• RDTEN/0603801N/5899: *Precision Fire Control*	0.527	8.673	10.352	-	10.352	19.520	14.394	0.000	0.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5901 / *STARDANCAR-M*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
5901: *STARDANCAR-M*	0.000	0.000	0.000	1.000	-	1.000	1.500	0.000	0.000	0.000	0.000	2.500

Note

Project 5901 was created in FY 2025 for the Small Turbofan Augmenter with Rotating Detonation for Autonomous Collaborative Aircraft and Missiles (STARDANCAR-M) INP program. This project is a continuation of technology previously developed in the Air, Ground and Sea Vehicles Activity of PE 0601153N Project 0000 involving propulsion, power and thermal management; power density, fuel efficiency, speed, range and operating reliability of future large, medium and small engines; and studies with rotating detonation engines and integration into platforms. It is also a continuation of technology previously developed in the Advanced Energetics Activity of PE 0602123N Project 0000 involving the development, scale up, and evaluation of novel explosive, propellant, and reactive composite ingredients and energetic formulations; and the development and application of modeling, simulation, and computation to predict the dynamic response and effects of energetic processes such as ignition, combustion/deflagration, shock, fragmentation, and detonation. This is not a new start.

A. Mission Description and Budget Item Justification

The Small Turbofan Augmentor with Rotating Detonation for Autonomous Collaborative Aircraft and Missiles (STARDANCAR-M) effort will add a Rotating Detonation Augmentor (RDA) to small engines, decreasing the burning length:
- Autonomous Collaborative Aircraft (ACA) with RDA will keep up with tactical vehicles
- Missiles with RDA will achieve higher speeds
- Subsonic missiles will have increased evasion capabilities and terminal velocity

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the STARDANCAR-M INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: STARDANCAR-M	0.000	0.000	1.000	0.000	1.000
Description: The Small Turbofan Augmentor with Rotating Detonation for Autonomous Collaborative Aircraft and Missiles (STARDANCAR-M) effort will add a Rotating Detonation Augmentor (RDA) to small engines, decreasing the burning length: - Autonomous Collaborative Aircraft (ACA) with RDA will keep up with tactical vehicles					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5901 / *STARDANCAR-M*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Missiles with RDA will achieve higher speeds - Subsonic missiles will have increased evasion capabilities and terminal velocity ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** Initiate - Military utility study - Program Plan & budget for FY27 INP - Numerical Propulsion System Simulation (NPSS) cycle deck model ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in funding from FY 2024 to FY 2025 in Proj: 5901 is due to technology maturation for continuation of Small Turbofan Augmenter with Rotating Detonation for Autonomous Collaborative Aircraft and Missiles (STARDANCAR-M) efforts.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	1.000	0.000	1.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy												Date: March 2024
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 5902 / *TALISMAN*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
5902: *TALISMAN*	0.000	0.000	0.000	2.000	-	2.000	0.000	0.000	0.000	0.000	0.000	2.000

Note

Project 5902 is for Tactical Autonomous Layered Infrastructure for Spectrum Maneuvers and Networking (TALISMAN) in the INP program. This project is a continuation of technology previously developed in the Aircraft Technology Activity of PE 0602123N Project 0000, including but not limited to, autonomous air vehicle command and control, multibody control systems, air vehicle flying qualities and control, high lift aerodynamics and control, Vertical/Short Take-off and Landing (V/STOL) technology, automated launch and recovery technology, advanced dynamics and topology of coupled human/machine systems, control effectors and vehicle configurations to enable platforms with VTOL utility and fixed-wing efficiency, and hybrid propulsion system component technologies for small to mid-size VTOL capable UAS. This is not a new start.

A. Mission Description and Budget Item Justification

The Tactical Autonomous Layered Infrastructure for Spectrum Maneuvers And Networking (TALISMAN) effort distributes sensors across a network of many small, low-cost, high-endurance platforms that provide resilience in a contested environment and use autonomy to enable agile adaptability to threats and changing mission objectives. Innovative airframe designs and controls enable small deck ships to organically deploy TALISMAN sensing & EW networks and engage long-range fires with weapons quality tracks out to 450 NM from the ship. TALISMAN's size allows the ship to carry enough platforms to maintain 24hr coverage.

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the TALISMAN INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Title: TALISMAN	0.000	0.000	2.000	0.000	2.000
Description: The Tactical Autonomous Layered Infrastructure for Spectrum Maneuvers And Networking (TALISMAN) effort distributes sensors across a network of many small, low-cost, high-endurance platforms that provide resilience in a contested environment and use autonomy to enable agile adaptability to threats and changing mission objectives. Innovative airframe designs and controls enable small deck ships to organically					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5902 / *TALISMAN*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
deploy TALISMAN sensing & EW networks and engage long-range fires with weapons quality tracks out to 450 NM from the ship. TALISMAN's size allows the ship to carry enough platforms to maintain 24hr coverage. ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** Initiate - Military utility study of TALISMAN architecture/system - Modeling and simulation study of baseline architecture and mission payload packages to meet TALISMAN objectives ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase in funding from FY 2024 to FY 2025 in Proj 5902 Talisman is due to technology maturation for continuation of The Tactical Autonomous Layered Infrastructure for Spectrum Maneuvers And Networking (TALISMAN) efforts.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	2.000	0.000	2.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A