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

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	111.442	621.250	79.417	96.763	-	96.763	-	-	-	-	-	-
3334: <i>Conventional Prompt Strike (CPS)</i>	0.000	502.435	0.000	0.000	-	0.000	-	-	-	-	-	-
3378: <i>Next Generation Strike Weapons</i>	18.075	17.563	7.493	2.877	-	2.877	-	-	-	-	-	-
3407: <i>Air Launched Decoy Development</i>	93.367	101.252	71.124	82.155	-	82.155	-	-	-	-	-	-
3409: <i>Advanced Aerial Refueling Store</i>	0.000	0.000	0.000	5.736	-	5.736	-	-	-	-	-	-
3411: <i>CAD/PAD Digital Twin Modeling</i>	0.000	0.000	0.800	0.761	-	0.761	-	-	-	-	-	-
3467: <i>Sea Launched Cruise Missile Nuclear</i>	0.000	0.000	0.000	5.234	-	5.234	-	-	-	-	-	-

**Program MDAP/MAIS Code:**  
**Project MDAP/MAIS Code(s):** 570

**Note**

Project 3409 Advanced Aerial Refueling Store is a new start in FY 2022.

Project 3467 Sea Launched Cruise Missile - Nuclear is a new start in FY 2022.

**A. Mission Description and Budget Item Justification**

Initial and continuing development of strike weapons consisting of armament, munitions, and weapon subsystems to allow for horizontal integration among current and future weapon system capabilities to provide enhanced anti-surface and land strike capabilities in a demanding Anti-Access Area-Denial environment. This program provides for the development of weapon and weapon system technologies to address future requirements for enhanced and alternative weapon system capability requirements that include selectable output weapons, low collateral damage weapons, precision lethality weapons, area weapons, alternative warhead technology, Insensitive Munitions (IM), scaled munitions, Department of Defense (DoD) fuzing systems, sensors, extended range weapons, precision guided training rounds, aerial refueling, fuel containment, and technologies associated with cartridge actuated devices/propellant actuated devices.

PROJ 3334: Conventional Prompt Strike (CPS) warfighting capability will enable precise and timely strike capabilities in contested environments across multiple platforms. In coordination with the Army, the Navy CPS Program is designing a missile comprised of a common hypersonic glide body (C-HGB) and a 34.5" two-stage

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booster. Independently, the Navy CPS Program is also performing design efforts relating to Navy-unique functions such as launch, weapon control, and Navy platform modifications. Development efforts under this program element lead to a weapon system capability that:(1) is non-ballistic over the majority of the flight path; (2) controls stage drop; (3) provides positive control and precision accuracy from launch to impact; (4) provides adequate cross-range/maneuverability to avoid over-flight issues; (5) provides prompt lethal effects on targets; and (6) is man-safe and deployable for surface and submerged platforms. This project was transferred to line item 0605518N Conventional Prompt Strike beginning in FY21.

PROJ 3378: Next Generation Strike Weapon (NGSW) Family of Systems (FoS) based on the NGLAW Analysis of Alternatives (AoA) completed with results briefed out to OSD. NGSW FoS more accurately reflects the surface/submarine capabilities for land-attack and maritime strike that the AoA results identified for the most capable and economic solutions fielding incrementally between 2020 and 2032. NGSW FoS Increments I and II will leverage mature as well as emerging technologies vice developing a single weapon. NGSW funding will maintain the security environment (enclave), facility, and study team to enable continuing analysis efforts across the FoS. The NGSW enclave ensures the Navy is able to maintain the most up to date modeled threats and validate the effectiveness of current US weapons, offensive and defensive, as well as future systems and concepts developed by industry and other DoD organizations. Maintaining this capability allows expedited analysis of systems and fully informed investment decisions.

PROJ 3407: Air-launched electronic warfare (EW) systems capability; through the integration of a Navy variant of the Miniature Air Launched Decoy (MALD). EW is an integral war-fighting effect supporting combatant commander integrated priorities, as well as Joint or Coalition operations. EW systems influence, deceive, disrupt, degrade, deny and destroy threats throughout the electromagnetic spectrum to airborne and air-launched systems and their operations. EW includes air-launched electronic attack (EA) as well as elements of electronic support (ES) and electronic protection (EP). EA provides self-protection capabilities to other weapon systems through active and passive measures that deceive threats to airborne and air-launched systems and their operations by using kinetic and non-kinetic means to defeat threats that rely on the electromagnetic spectrum, Radio Frequency (RF), Electro-Optical (EO), Infrared (IR). The ES capabilities support the collection, analysis, and dissemination of information related to the detection, geo-location, characterization, and identification of threats to airborne and air-launched systems and their operations. An air-launched EW system with stand-in capability increases the range and duration of EW systems while providing flexibility to commanders for employment. MALD is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. The development and acquisition of MALD has been structured to be fielded at a pace relevant to maintain overmatch against long-term strategic competition. Specifically MALD directly contributes to building a more lethal force and is a critical enabler for joint lethality in contested environments; deterring adversaries from aggression and evolves innovative operational concepts.

PROJ 3409: Development and fielding of the Advanced Aerial Refueling Store (AARS). The AARS effort is the result of an Operation Navy (OPNAV) Future Readiness Initiative (FRI) award. The AARS will package new technologies into this next generation Aerial Refueling Store (ARS) to support both manned and unmanned (automated) aerial refueling from platforms such as F/A-18 and MQ-25. In doing so, the AARS will facilitate tanking operations to both manned and unmanned receivers and improve safety of flight by stabilizing the aerial refueling drogue and incorporating better health and diagnostics. These improvements will be accomplished by providing updated store health message content and additional health monitoring Built-In Tests (BITS) that will be sent over the 1553 data-bus. The AARS will also add receiver and drogue position data for situational awareness and support autonomous receiver engagements of unmanned systems. This in turn will increase reliability and decrease aerial refueling mishaps, providing a significant safety and readiness improvement when compared with the current ARS.

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PROJ 3411: Cartridge Actuated Device / Propellant Actuated Device (CAD/PAD) Digital Twin Modeling to develop and validate models and algorithms for the Department of the Navy (DoN). The development effort is specific to Navy Air Crew Common Ejection Seats (NACES). These models will also be used to support initial service life decisions, service life extension decisions, and address obsolescence.

PROJ 3467: This project will design, develop, produce and deploy a Nuclear-Armed Sea-Launched Cruise Missile (SLCM-N). SLCM-N is scoped to deliver an integrated flight system and to continue to advance SLCM-N capabilities to fully address requirements identified in the 2018 Nuclear Posture Review, SLCM-N Initial Capabilities Document, and examined in the Analysis of Alternatives to mitigate a lack of a sea based tactical nuclear based system.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
Previous President's Budget	637.254	1,102.387	1,419.425	-	1,419.425
Current President's Budget	621.250	79.417	96.763	-	96.763
Total Adjustments	-16.004	-1,022.970	-1,322.662	-	-1,322.662
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1,022.970			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.400	0.000			
• SBIR/STTR Transfer	-14.604	0.000			
• Program Adjustments	0.000	0.000	-1,311.458	-	-1,311.458
• Rate/Misc Adjustments	0.000	0.000	-11.204	-	-11.204

**Change Summary Explanation**

FY 2020 funding change due to funds transfer to SBIR/STTR efforts (-\$14.604M) and a programmatic reduction to support Force Level Integration Tool (-\$1.4M).

FY 2021 adjustment due to Project 3334 moving to PE 0605518N Conventional Prompt Strike beginning in FY21.

FY 2022 funding request decreased by \$1,322.662M due to the following:

Decrease of \$1,305.701M with the transition of Project 3334 to a new PE; decrease of \$53.665M for PU 3378 as NGLAW efforts have been limited to maintenance of the enclave for future excursions; increase of \$35.0M for Project 3407 to address fuselage redesign and correction of deficiencies identified during test while continuing software and payload development; an increase of \$5.234M for PU 3467 SLCM-N efforts to commence; and a decrease of \$2.730M for rate changes and other miscellaneous adjustments.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy										<b>Date:</b> May 2021		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>				<b>Project (Number/Name)</b> 3334 / <i>Conventional Prompt Strike (CPS)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
3334: <i>Conventional Prompt Strike (CPS)</i>	0.000	502.435	0.000	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This project was transferred to line item 0605518N Conventional Prompt Strike beginning in FY21.

The Conventional Prompt Strike (CPS) Weapon System will deliver a hypersonic conventional offensive strike capability through a depressed boost-glide trajectory to prosecute deep- inland, time-critical, soft and medium-hardened targets in contested environments. The Navy CPS Weapon System will enhance U.S. conventional power projection through longer range, shorter time of flight, and higher survivability against enemy defenses compared to current capabilities. The Navy CPS weapon system or major elements of the weapon system will be deployed onboard multiple launch platforms. The CPS program is a joint effort between services including design and data sharing. Specifically, the Navy and Army are collaborating to design and produce a common AUR in accordance with an inter-service Memorandum of Agreement. The Navy is responsible for design and development of the full AUR, the build of the 34.5" booster, and missile integration for both services. The Army is responsible for the follow-on procurement of the Navy-designed C-HGB. To enable weapon system integration to Navy mission requirements, near-term design, development, and experimentation will also be required for boosters, thermal protection systems, navigation, guidance and control systems, enhancements, payload modules, weapon control systems and interface to existing fire control systems, support equipment, and launcher systems. Component & subsystem technology maturity and risk reduction will be demonstrated through ground-based testing, in-air and underwater launch testing, and flight tests.

Furthermore, with each platform deployment, risk continues to be reduced for weapon subsystems and components until prototyping efforts culminate in an initial operational Virginia- Class submarine weapon system capability. The program will capitalize on commonality between platform implementations, enabling other Service operational capabilities.

CPS supports the National Defense Strategy by supporting modernization initiatives for hypersonic technologies and enabling a more lethal force by: (1) Providing rapid delivery of capability through multiple acquisition increments and configurations; and (2) Providing flexibility to allow for additional capability phases as the weapon system and warfighter requirements evolve.

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

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<b>Title:</b> Weapon System Integration	325.172	0.000	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2021 Plans:</b>					

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<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / Precision Strike Weapons Development Program	<b>Project (Number/Name)</b> 3334 / Conventional Prompt Strike (CPS)

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
N/A <b>FY 2022 Base Plans:</b> N/A <b>FY 2022 OCO Plans:</b> N/A					
<b>Title:</b> Flight Subsystem  <b>Articles:</b>	91.398 -	0.000 -	0.000 -	0.000 -	0.000 -
<b>FY 2021 Plans:</b> N/A <b>FY 2022 Base Plans:</b> N/A <b>FY 2022 OCO Plans:</b> N/A					
<b>Title:</b> Platform Integration  <b>Articles:</b>	73.863 -	0.000 -	0.000 -	0.000 -	0.000 -
<b>FY 2021 Plans:</b> N/A <b>FY 2022 Base Plans:</b> N/A <b>FY 2022 OCO Plans:</b> N/A					
<b>Title:</b> Testing & Evaluation  <b>Articles:</b>	12.002 -	0.000 -	0.000 -	0.000 -	0.000 -
<b>FY 2021 Plans:</b> N/A <b>FY 2022 Base Plans:</b>					

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
N/A					
<b>FY 2022 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	502.435	0.000	0.000	0.000	0.000

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**

The CPS program is utilizing a phased Middle Tier Acquisition (MTA) approach, as authorized by Section 804 of the Fiscal Year (FY) 2016 National Defense Authorization Act (NDAA) and amended in FY 2017 NDAA (codified at 10 U.S.C. sub sec 2302 note). The CPS acquisition will consist of a Phase 1: Rapid Prototyping and a Phase 2: Rapid Fielding. The rapid prototyping path of Middle Tier Acquisition provides for the use of innovative technologies to rapidly develop fieldable prototypes to demonstrate new capabilities and meet emerging military needs. Following this guidance, the CPS Rapid Prototyping Phase will demonstrate a hypersonic cold gas launched missile prototype capability. In FY 2021, as part of the Rapid Prototyping Phase, the CPS program will mature the initial prototype missile and launch system. In FY 2022, the CPS program will continue development and testing of the launch missile capability to support FY 2023 Army prototype deployment and continue progressing towards a Rapid Fielding Phase and Navy surface ship capability.

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

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / Precision Strike Weapons Development Program	<b>Project (Number/Name)</b> 3334 / Conventional Prompt Strike (CPS)
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<b>Product Development (\$ in Millions)</b>				<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Weapon System Integration	SS/CPFF	Lockheed Martin Corporation : Sunnyvale, CA	0.000	273.883	Oct 2019	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	SS/CPFF	Draper : Boston, MA	0.000	5.214	Feb 2020	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	WR	NSWC - Crane : Crane, IN	0.000	15.023	Nov 2019	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	MIPR	Lawrence Livermore National Laboratory : Livermore, CA	0.000	4.704	Dec 2019	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	C/CPFF	JHU/APL : Laurel, MD	0.000	6.271	Feb 2020	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	C/CPFF	General Atomics : San Diego, CA	0.000	0.000	Oct 2019	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	C/CPFF	Honeywell : Phoenix, AZ	0.000	0.000	Oct 2019	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	WR	NSWC - Dahlgren : Dahlgren, VA	0.000	0.472	Oct 2019	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	WR	NSWC - Indian Head : Indian Head, MD	0.000	0.651	Oct 2019	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	WR	NUWC - Newport : Newport, RI	0.000	0.000	Oct 2019	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	MIPR	Sandia National Laboratory : Albuquerque, NM	0.000	11.423	Oct 2019	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	Various	TBD : TBD	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Weapon System Integration	MIPR	United States Air Force : Various	0.000	1.050	Oct 2019	0.000		0.000		-		0.000	-	-	-
Weapon System Integration	MIPR	United States Army : Various	0.000	1.054	Oct 2019	0.000		0.000		-		0.000	-	-	-

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<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / Precision Strike Weapons Development Program	<b>Project (Number/Name)</b> 3334 / Conventional Prompt Strike (CPS)
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<b>Product Development (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Weapon System Integration	Various	Various : Various	0.000	5.427	Oct 2019	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	C/CPFF	JHU/APL : Laurel, MD	0.000	2.000	Feb 2020	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	SS/CPFF	Draper : Boston, MA	0.000	11.487	Feb 2020	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	C/CPFF	Dynetics : Huntsville, AL	0.000	0.000	Oct 2019	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	C/CPFF	General Atomics : San Diego, CA	0.000	0.000	Oct 2019	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	MIPR	Lawrence Livermore National Laboratory : Livermore, CA	0.000	3.700	Oct 2019	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	WR	NSWC - Crane : Crane, IN	0.000	4.304	Oct 2019	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	WR	NSWC - Dahlgren : Dahlgren, VA	0.000	0.606	Oct 2019	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	MIPR	Sandia National Laboratory : Albuquerque, NM	0.000	37.254	Oct 2019	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	C/CPFF	Southern Research : Birmingham, AL	0.000	0.000	Oct 2019	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	MIPR	United States Army : Various	0.000	31.239	Oct 2019	0.000		0.000		-		0.000	-	-	-
Flight Subsystem	Various	Various : Various	0.000	0.809	Oct 2019	0.000		0.000		-		0.000	-	-	-
Platform Integration	C/CPFF	JHU/APL : Laurel, MD	0.000	1.800	Feb 2020	0.000		0.000		-		0.000	-	-	-
Platform Integration	WR	NAVFAC : Crane, IN	0.000	5.000	Oct 2019	0.000		0.000		-		0.000	-	-	-
Platform Integration	WR	NAVSEA : Various	0.000	10.839	Oct 2019	0.000		0.000		-		0.000	-	-	-
Platform Integration	WR	NAWCWD - China Lake : China Lake, CA	0.000	33.474	Oct 2019	0.000		0.000		-		0.000	-	-	-

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Appropriation/Budget Activity 1319 / 4				R-1 Program Element (Number/Name) PE 0604659N / Precision Strike Weapons Development Program				Project (Number/Name) 3334 / Conventional Prompt Strike (CPS)							
Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Platform Integration	WR	NSWC - Crane : Crane, IN	0.000	5.396	Oct 2019	0.000		0.000		-		0.000	-	-	-
Platform Integration	WR	NSWC - Dahlgren : Dahlgren, VA	0.000	0.940	Oct 2019	0.000		0.000		-		0.000	-	-	-
Platform Integration	WR	NSWC - Indian Head : Indian Head, MD	0.000	4.258	Oct 2019	0.000		0.000		-		0.000	-	-	-
Platform Integration	WR	NUWC - Newport : Newport, RI	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Platform Integration	Various	Various : Various	0.000	0.436	Oct 2019	0.000		0.000		-		0.000	-	-	-
Platform Integration	C/CPFF	General Dynamics : Groton, CT	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Platform Integration	WR	NAVAIR : Various	0.000	0.000	Oct 2019	0.000		0.000		-		0.000	-	-	-
Platform Integration	SS/IDIQ	Jacobs : Dallas, TX	0.000	11.719	Oct 2019	0.000		0.000		-		0.000	-	-	-
Testing & Evaluation	C/CPFF	JHU/APL : Laurel, MD	0.000	4.278	Feb 2020	0.000		0.000		-		0.000	-	-	-
Testing & Evaluation	MIPR	Lawrence Livermore National Laboratory : Livermore, CA	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Testing & Evaluation	MIPR	NASA : Wallops Island, VA	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Testing & Evaluation	WR	NAWCWD - China Lake : China Lake, CA	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Testing & Evaluation	WR	NSWC - Crane : Crane, IN	0.000	3.493	Oct 2019	0.000		0.000		-		0.000	-	-	-
Testing & Evaluation	WR	NSWC - Dahlgren : Dahlgren, VA	0.000	2.491	Oct 2019	0.000		0.000		-		0.000	-	-	-
Testing & Evaluation	WR	Pacific Missile Range Facility : Hawaii	0.000	0.000		0.000		0.000		-		0.000	-	-	-



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Navy</b>		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3334 / <i>Conventional Prompt Strike (CPS)</i>



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<b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2022 Navy</b>		<b>Date: May 2021</b>
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3334 / <i>Conventional Prompt Strike (CPS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3334</b>				
FE-2	2	2020	2	2020
Missile Body Development/AUR I&T	1	2020	4	2020
Industry Produced C-HGB	1	2020	4	2020
Launcher Development & Test	3	2020	4	2020

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy										<b>Date:</b> May 2021		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>				<b>Project (Number/Name)</b> 3378 / <i>Next Generation Strike Weapons</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
3378: <i>Next Generation Strike Weapons</i>	18.075	17.563	7.493	2.877	-	2.877	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
<b>Project MDAP/MAIS Code:</b> 570												

**Note**  
Starting with the FY 2022 Budget Cycle, the description for Project Unit 3378 was changed from Next Generation Land Attack Weapon (NGLAW) to Next Generation Strike Weapon (NGSW)

**A. Mission Description and Budget Item Justification**

Funding is provided for the Next Generation Strike Weapon (NGSW) Family of Systems (FoS) based on the NGLAW Analysis of Alternatives (AoA) completed with results briefed out to OSD. NGSW FoS more accurately reflects the surface/submarine capabilities for land-attack and maritime strike that the AoA results identified for the most capable and economic solutions fielding incrementally between 2020 and 2032. NGSW FoS Increments I and II will leverage mature as well as emerging technologies vice developing a single weapon. NGSW funding will maintain the security environment (enclave), facility, and study team to enable continuing analysis efforts across the FoS. The NGSW enclave ensures the Navy is able to maintain the most up to date modeled threats and validate the effectiveness of current US weapons, offensive and defensive, as well as future systems and concepts developed by industry and other DoD organizations. Maintaining this capability allows expedited analysis of systems and fully informed investment decisions. Further funding supports investment for technologies which enable Increment II capabilities (additional details are held at a higher classification).

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

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<b>Title:</b> Next Generation Strike Weapon (NGSW)	17.563	7.493	2.877	0.000	2.877
<b>Articles:</b>	-	-	-	-	-
<b>FY 2021 Plans:</b> Continue annual enclave security and IT updates, annual DSS updates for latest threat data and ownership defense, multidomain assessment, expanding the US capabilities database, mission integration, and lifecycle cost estimate updates as applicable. In support of NGSW FoS and continued Offensive Anti-Surface Warfare (OASUW) analysis, continue to modify Tactical Situations (TACSITs) and threat postures for air, surface and subsurface launched weapons, identify new launch points and concepts for employment, mission integration and cost estimate updates as applicable. Conduct Threat Updates and Threat modeling to include threat systems against US offensive and defensive systems to ensure the enclave remains fully informed to assist senior					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3378 / <i>Next Generation Strike Weapons</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<p>leadership in investment decisions. Complete Analysis of Alternatives study in support of Nuclear Missile Sea-Launched Cruise Missile (SLCM-N).</p> <p>To support Increment II development, continued funding will be allocated for technologies to enable capabilities identified in the NGLAW AoA for integration in future systems. Additional details are held at a higher classification.</p> <p><b><i>FY 2022 Base Plans:</i></b> Continue annual enclave security and IT updates, annual DSS updates for latest threat data and ownership defense, multidomain assessment, expanding the US capabilities database, mission integration, and lifecycle cost estimate updates as applicable. In support of NGSW FoS and continued Offensive Anti-Surface Warfare (OASUW) analysis, continue to modify TACSITs and threat postures for air, surface and subsurface launched weapons, identify new launch points and concepts for employment, mission integration and cost estimate updates as applicable. Conduct Threat Updates and Threat modeling to include threat systems against US offensive and defensive systems to ensure the enclave remains fully informed to assist senior leadership in investment decisions. Initiate update to previous NGLAW AoA and generate draft report.</p> <p><b><i>FY 2022 OCO Plans:</i></b> N/A</p> <p><b><i>FY 2021 to FY 2022 Increase/Decrease Statement:</i></b> FY 2021 to FY 2022 decrease of \$4.616M due to completion of SLCM-N AoA and support of Technology Investment Enablers for Inc I and Inc II development.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	17.563	7.493	2.877	0.000	2.877

<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A
<b>Remarks</b>
<b>D. Acquisition Strategy</b> NGSW FoS more accurately reflects the multi-domain capabilities for land-attack and maritime strike that the NGLAW AoA results identified for the most capable and economic solutions fielding incrementally between 2020 and 2032. NGSW FoS Increments I and II will leverage mature as well as emerging technologies vice developing a single weapon. NGSW funding will maintain the security environment (enclave), facility, and study team to enable continuing analysis efforts across the FoS. The NGSW enclave ensures the Navy is able to maintain the most up to date modeled threats and validate the effectiveness of current US weapons, offensive and

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3378 / <i>Next Generation Strike Weapons</i>
<p>defensive, as well as future systems and concepts developed by industry and other DoD organizations. Maintaining the enclave allows expedited analysis of systems and fully informed investment decisions.</p> <p>The SLCM-N AOA study is projected to complete in Q3FY21.</p> <p>NGSW FoS funding will support Increment II development of technologies to enable capabilities identified in the NGLAW AoA for integration in future systems. Additional details are held at a higher classification.</p>		

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

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3378 / <i>Next Generation Strike Weapons</i>
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<b>Product Development (\$ in Millions)</b>				<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
INC II Technologies	C/CPFF	TBD : TBD	0.000	0.000		1.994	Jul 2021	0.000		-		0.000	-	-	-
FMB withhold	TBD	TBD : TBD	0.000	10.900	Aug 2020	0.000		0.000		-		0.000	-	-	-
<b>Subtotal</b>			0.000	10.900		1.994		0.000		-		0.000	-	-	N/A

**Remarks**  
Development of technologies/components to support NGSW Increment II capabilities for integration in future systems. Additional details are held at a higher classification.

<b>Support (\$ in Millions)</b>				<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Development Support	WR	NAWC-WD : China Lake, CA	2.475	0.000		0.000		0.000		-		0.000	-	-	-
Development Support- AIR 4.0M	WR	NAWC-AD : Patuxent River, MD	3.114	0.000		0.450	Jan 2021	0.381	Jan 2022	-		0.381	-	-	-
Development Support	SS/CPFF	JHU/APL : Laurel, MD	5.554	0.750	Jun 2020	3.475	Feb 2021	2.016	Feb 2022	-		2.016	-	-	-
Weapons Control System	WR	NSWC-DD : Dahlgren, VA	0.050	0.000		0.000		0.000		-		0.000	-	-	-
Development Support	WR	NSMA : JBAB, DC	6.263	4.979	Feb 2020	1.379	Feb 2021	0.350	Feb 2022	-		0.350	-	-	-
Development Support	MIPR	NRO : Chantilly, VA	0.569	0.000		0.000		0.000		-		0.000	-	-	-
Development Support	WR	NSWC-NPT : Newport, RI	0.050	0.000		0.000		0.000		-		0.000	-	-	-
Development Support	C/CPFF	SSP : WNY, DC	0.000	0.700	Sep 2020	0.000		0.000		-		0.000	-	-	-
<b>Subtotal</b>			18.075	6.429		5.304		2.747		-		2.747	-	-	N/A

**Remarks**  
Annual enclave updates, annual DSS updates, multi-domain assessment, mission integration, support OASUW analysis, conduct SLCM-N AoA study and initiate update to previous NGLAW AoA.



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

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / Precision Strike Weapons Development Program	<b>Project (Number/Name)</b> 3378 / Next Generation Strike Weapons
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Fiscal Year	FY 2020				FY 2021				FY 2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
SLCM-N	▲ SLCM-N: CONEMP Threats (Part of SLCM-N AoA Study) ▲ SLCM-N: Tech Assess Cost Preps (Part of SLCM-N AoA Study) ▲ SLCM-N: Trade Space Analysis (Part of SLCM-N AoA Study) SLCM-N Analysis of Alternatives								<div style="border: 1px solid black; padding: 5px;"> <b>Legend</b>                      Completed Event ▲                      Scheduled Event <span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px; background-color: #f4a460;"></span> </div>			
OASuW	▲ OASuW: Mission Modeling				▲ OASuW Study							
OASuW Integration	▲ OASuW: Mission Integration											
NGSW New Concepts	▲ NGSW: New Concepts: Mission Modeling/Int											
NGSW Threat Update	FY20 Threat Update ▲				FY21 Threat Update				FY22 Threat Update			
	Mission Modeling											
	Modeling Updates											
NGSW Multi-Domain	▲ FY19 Mission Modeling				▲ FY20 CONEMP Tech Assess							
					▲ FY20 Model Prep							
					▲ FY20 Mission Modeling							
NGSW Integration	▲ Modeling Preps				▲ FY19 Mission Integration							
					▲ FY20 Mission Integration							
					▲ FY20 Miss Integ Inc II							
NGSW Increment I / II	Technology Investment Enablers for Inc I and Inc II											
	Study Opportunity											
Additional Studies	Offensive Weapons Study - OSD CAPE ▲				Weps/Platform Tradespace Analysis				NGSW Update			
Facility	▲ Security and HW Update				▲ Security and HW Update				Security and HW Update			
	▲ Info Update				Info Update				Info Update			

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<b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2022 Navy</b>		<b>Date: May 2021</b>
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3378 / <i>Next Generation Strike Weapons</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Next Generation Strike Weapon</b>				
SLCM-N: SLCM-N CNA CONEMP Threats (Part of SLCM-N AoA Study)	1	2020	1	2020
SLCM-N: SLCM-N CNA Tech Assess Cost Preps (Part of SLCM-N AoA Study)	1	2020	1	2020
SLCM-N: SLCM-N Trade Space Analysis (Part of SLCM-N AoA Study)	2	2020	2	2020
SLCM-N: SLCM-N Analysis of Alternatives	1	2020	3	2021
OASuW: OASuW Mission Modeling	1	2020	1	2020
OASuW: OASuW Study	2	2020	4	2020
OASuW: OASuW Integration: OASuW Integration Mission Integration	1	2020	1	2020
NGSW New Concepts: NGSW New Concepts Mission Modeling Mission Int	1	2020	1	2020
NGSW Threat Updates: NGSW FY20 Threat Update	4	2020	4	2020
NGSW Threat Updates: NGSW FY21 Threat Update	1	2021	4	2021
NGSW Threat Updates: NGSW FY22 Threat Update	1	2022	4	2022
NGSW Threat Updates: NGSW Threat Updates Mission Modeling	1	2020	4	2022
NGSW Threat Updates: NGSW Threat Updates Modeling Updates	1	2020	4	2022
NGSW Multi-Domain: NGSW Multi-Domain FY19 Mission Modeling	1	2020	1	2020
NGSW Multi-Domain: NGSW Multi-Domain FY20 Threats CONEMP Tech Assessment	3	2020	3	2020
NGSW Multi-Domain: NGSW Multi-Domain FY20 Modeling Preparations	4	2020	4	2020
NGSW Multi-Domain: NGSW Multi-Domain FY20 Mission Modeling	1	2020	1	2021
NGSW Integration: NGSW Integration Modeling Preparations	1	2020	1	2020
NGSW Integration: NGSW Integration FY19 Mission Integration	2	2020	2	2020
NGSW Integration: NGSW Integration FY20 Mission Integration	3	2020	3	2020
NGSW Integration: NGSW Integration FY20 Mission Integration Increment 2	1	2021	1	2021

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

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3378 / <i>Next Generation Strike Weapons</i>
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<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
NGSW Increment I/II: Technology Investment Enablers for INC I / INC II Capabilities	1	2020	4	2021
Additional Studies: Study Opportunity	1	2020	4	2022
Additional Studies: Offensive Weapons Study - OSD CAPE	4	2020	4	2020
Additional Studies: Weapon/Platform Tradespace Analysis	1	2021	4	2021
Additional Studies: NGLAW AoA Update	1	2022	4	2022
Facility: FY 20 Security and HW Update	2	2020	2	2020
Facility: FY 20 Info Update	3	2020	3	2020
Facility: FY 21 Security and HW Update	2	2021	2	2021
Facility: FY 21 Info Update	3	2021	4	2021
Facility: FY 22 Security and HW Update	2	2022	3	2022
Facility: FY 22 Info Update	3	2022	4	2022

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy										<b>Date:</b> May 2021		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604659N / Precision Strike Weapons Development Program				<b>Project (Number/Name)</b> 3407 / Air Launched Decoy Development			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
3407: Air Launched Decoy Development	93.367	101.252	71.124	82.155	-	82.155	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This project develops a Navy variant of the Miniature Air Launched Decoy (MALD). The variant will address current and future advanced Integrated Air Defense System (IADS) threats by bringing an air-launched, stand-in EW capability to Department of the Navy (DON) suppression of enemy air defenses/destruction of enemy air defenses (SEAD/DEAD) and standoff conventional land strike. A Navy variant of MALD with stand-in capability increases the range and duration of EW systems while providing flexibility to commanders for employment. To the maximum extent possible, the Navy will utilize existing technology from the current MALD-J production line and other common components (e.g. navigation, communication, guidance and control, payload) to reduce cost, shorten development timelines and promote interoperability. OPNAV approved requirements in a Capability Development Document (CDD) 2Q2018.

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

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<b>Title:</b> Miniature Air Launched Decoy (MALD)	101.252	71.124	82.155	0.000	82.155
<b>Articles:</b>	-	-	-	-	-
<b>FY 2021 Plans:</b> FY 2021 builds upon the FY 2020 Engineering and Manufacturing Development (EMD) effort. FY 2021 will complete component maturation through Production Readiness Review and Test Readiness Review in support of free flight test event. FY 2021 will continue software integration and ramp up Integrated Test and Evaluation (IT&E) efforts.					
<b>FY 2022 Base Plans:</b> FY 2022 builds upon the FY 2021 EMD. FY 2022 will support powered launch, payload software development and fuselage redesign. FY 2022 will complete EMD through Test Readiness Review in support of Free Flight test events and fuselage redesign through Design Verification Test (DVT AF).					
<b>FY 2022 OCO Plans:</b> N/A					
<b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> The FY 2021 to FY 2022 increase of \$11.031 million is due to increased software development, addressing fuselage redesign and planned ramp up in test.					
<b>Accomplishments/Planned Programs Subtotals</b>	101.252	71.124	82.155	0.000	82.155

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3407 / <i>Air Launched Decoy Development</i>

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

<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>			<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• WPN/2285: <i>Drones and Decoys</i>	0.000	19.956	30.321	-	30.321	-	-	-	-	-	-

**Remarks**

**D. Acquisition Strategy**

The MALD-N Acquisition Category (ACAT) II program is an evolution from the previous United States Air Force (USAF) MALD-J program and is managed by Program Executive Office, Unmanned Aviation & Strike Weapons (PEO(U&W)), PMA-201 Precision Strike Weapons Program Office. PEO(U&W) has been delegated Milestone Decision Authority (MDA) and chairs quarterly Executive Steering Boards which ensure timely communications. MALD-N is being implemented as a Model 4 acquisition program. The MALD-N program will use event-driven "Knowledge Points" (KP) at key program strategic inflection points to brief progress to stakeholders throughout the program life-cycle. The program met the statutory requirements associated with Milestone B at Knowledge Point 2 (1Q FY2019). With the removal of FY 2020 production funding, a Quick Reaction Assessment (QRA) to support an FY 2021 Early Operational Capability (EOC) will not be conducted. The MALD-N program will continue to progress towards Initial Operational Capabilities (IOC) which will be achieved through integrated test in FY2022 and FY2023, followed by Initial Operational Test and Evaluation (IOT&E) in FY2023/FY2024, with asset delivery in FY2024. MALD-N will use a capabilities-based acquisition approach to characterize performance and evolve an IOC system for Fleet integration.

MALD is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. The development and acquisition of MALD has been structured to be fielded at a pace relevant to maintain overmatch against long-term strategic competition. Specifically MALD supports greater performance of the acquisition system and is demonstrating the delivery of performance at the speed of relevance; organizational structure that supports innovation with a rapid approach that dramatically decreases the timeline from development to fielding.

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

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / Precision Strike Weapons Development Program	<b>Project (Number/Name)</b> 3407 / Air Launched Decoy Development
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<b>Product Development (\$ in Millions)</b>				<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Product Development	SS/CPIF	Raytheon Missile Systems : Tucson, AZ	58.968	71.370	Nov 2019	42.600	Jan 2021	49.000	Jan 2022	-		49.000	-	-	-
<b>Subtotal</b>			58.968	71.370		42.600		49.000		-		49.000	-	-	N/A

**Remarks**  
FY2022 prime contract increases to support additional effort to redesign fuselage following discovery during test.

<b>Support (\$ in Millions)</b>				<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Government Support	WR	NAWC AD : Patuxent River, MD	7.250	6.983	Nov 2019	7.200	Nov 2020	7.800	Nov 2021	-		7.800	-	-	-
Government Support	WR	NAWC WD : China Lake, CA	14.108	5.750	Nov 2019	5.600	Nov 2020	4.834	Nov 2021	-		4.834	-	-	-
Government Support	WR	NAWC WD : Point Mugu, CA	3.785	4.184	Nov 2019	1.500	Nov 2020	1.589	Nov 2021	-		1.589	-	-	-
<b>Subtotal</b>			25.143	16.917		14.300		14.223		-		14.223	-	-	N/A

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Government Support	WR	NAWC AD : Patuxent River, MD	4.954	7.639	Nov 2019	5.501	Nov 2020	6.483	Nov 2021	-		6.483	-	-	-
Government Support	WR	NAWC WD : China Lake, CA	2.500	4.200	Nov 2019	7.225	Nov 2020	10.900	Nov 2021	-		10.900	-	-	-
<b>Subtotal</b>			7.454	11.839		12.726		17.383		-		17.383	-	-	N/A

**Remarks**  
Test costs increase in FY2022 to support ramp up in test events including free flight and an operational assessment.



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

Date: May 2021

Appropriation/Budget Activity  
1319 / 4

R-1 Program Element (Number/Name)  
PE 0604659N / Precision Strike Weapons Development Program

Project (Number/Name)  
3407 / Air Launched Decoy Development

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# PB22 PROGRAM SCHEDULE



Fiscal Year	2020				2021				2022				2023				2024				2025				2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Knowledge Points</b>												◆ KP4 LRIPI																
<b>Contracts</b>																												
<b>Development</b>																												
Payload/ Fuselage																												
Computer																												
Comms																												
Mission Planning																												
Follow-on Development/ Pace the Threat																												
<b>Testing</b>																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3407 / <i>Air Launched Decoy Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Miniature Air Launched Decoy</i></b>				
Milestones: KP4 LRIP 1 Decision	3	2022	3	2022
Product Development: Contract Award: EMD Contract Award	1	2020	1	2020
Product Development: Contract Award: LRIP 1 Contract Award	3	2022	3	2022
Product Development: Product Development: Engineering and Manufacturing Development	1	2020	4	2022
Test and Evaluation: Modeling and Simulation	1	2020	4	2022
Test and Evaluation: Ground / Qual Test	2	2020	1	2022
Test and Evaluation: Operational Assessment	3	2022	3	2022

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy										<b>Date:</b> May 2021		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>				<b>Project (Number/Name)</b> 3409 / <i>Advanced Aerial Refueling Store</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
3409: <i>Advanced Aerial Refueling Store</i>	0.000	0.000	0.000	5.736	-	5.736	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

Project 3409 Advanced Aerial Refueling Store is a new start in FY 2022.

**A. Mission Description and Budget Item Justification**

The Advanced Aerial Refueling Store (AARS) is a collection of modifications to individual Aerial Refueling Store (ARS) components that will improve performance and readiness. The ARS updates will package new technologies into the existing store that will support both manned and unmanned (automated) aerial refueling from platforms such as the F/A-18 and MQ-25. These technologies include drogue stabilization, drogue positioning sensors, advanced health and diagnostic capability and real time receiver situational awareness for the unmanned mission operator. These updates will increase safety of flight, facilitate unmanned tanking operations to both manned and unmanned receivers and improve overall ARS reliability.

The Digital Controller Upgrade (DCU) with Optical Reference System (ORS) is a hardware and software update to existing components which will provide increased flight safety through monitoring/diagnostic capabilities and enhanced situational awareness to reduce mission aborts. Drogue Stabilization incorporates hardware and software updates to improve the Aerial Refueling Stores ability to hold the drogue in position for refueling actions, and also improve the ability for the receiving platform to maneuver into position for refueling which decreases the risk of refueling mishaps, reduces mission aborts which improves operational efficiency and safety. Hydraulic System Improvements will update hardware to increase hydraulic efficiency by eliminating high failure rate components, improving fuel offload and reducing power demands on the Ram Air Turbine (RAT).

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

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<b>Title:</b> Advanced Aerial Refueling Store	0.000	0.000	5.736	0.000	5.736
<b>Articles:</b>	-	-	-	-	-
<b>FY 2021 Plans:</b> N/A					
<b>FY 2022 Base Plans:</b> FY 2022 funding will begin modifications to improve the existing Aerial Refueling Stores. Funding provided for the development and testing includes the development of drawings and specifications for prototypes. Efforts					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3409 / <i>Advanced Aerial Refueling Store</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
include Hydraulic Systems improvements, the Digital Controller Upgrade (DCU) with Optical Reference System (ORS) and Drogue Stabilization.  <b>FY 2022 OCO Plans:</b> N/A  <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> As an FY 2022 New Start, the program will develop the Digital Controller Upgrade (DCU) with Optical Reference System (ORS), Drogue Stabilization and Hydraulic System Improvements. Each component is a combination of hardware and software updates that provide increased safety, readiness, maintainability and performance to the aerial refueling mission.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	5.736	0.000	5.736

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APN/0720: <i>War Consumables</i>	32.086	40.633	42.496	-	42.496	-	-	-	-	-	-

**Remarks**

**D. Acquisition Strategy**  
The Advanced Aerial Refueling Store (AARS) development program will mature and integrate modifications to improve the existing Aerial Refueling Store (ARS). The Advanced Aerial Refueling Store (AARS) program will develop, prototype and test the next generation Aerial Refueling Store (ARS) utilizing a hybrid program structure to capitalize on existing technologies that can be incorporated into the existing ARS to improve reliability and readiness while also increasing safety during refueling. The AARS technologies will be fielded as a series of individual modifications to the ARS.

The ARS improvement program will center on the Digital Controller Upgrade (DCU). The DCU utilizes government owned software and hardware to command and control the refueling store. The remainder of the AARS upgrades will be built around this government owned DCU. Based on current technology assessments, the program anticipates incorporating an Optical Reference System into the DCU to improve performance and reduce risk during refueling. Additional technologies that will be evaluated include drogue stabilization sensors, positioning, improved health and diagnostics and real time receiver situational awareness for unmanned mission operators.

The program will use regular technical interchanges to coordinate with F/A-18 and MQ-25 platforms to maximize effectiveness of the technology upgrades across both manned and unmanned environments.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3409 / <i>Advanced Aerial Refueling Store</i>

FY 2022 New Start.

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

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3409 / <i>Advanced Aerial Refueling Store</i>
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<b>Product Development (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Digital Controller Upgrade Dev & Int	SS/CPFF	CTSi : Lakehurst, NJ	0.000	0.000		0.000		2.000	Jan 2022	-		2.000	-	-	-
Government Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.986	Nov 2021	-		0.986	-	-	-
Hydraulic System Improvements Developmen	TBD	TBD : Patuxent River, MD	0.000	0.000		0.000		0.750	Mar 2022	-		0.750	-	-	-
Drogue Stabilization Development	SS/CPFF	AMA : Lakehurst, NJ	0.000	0.000		0.000		1.000	Jan 2022	-		1.000	-	-	-
<b>Subtotal</b>			0.000	0.000		0.000		4.736		-		4.736	-	-	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test & Evaluation Support	WR	NAWCAD Pax : Patuxent River, MD	0.000	0.000		0.000		1.000	Apr 2022	-		1.000	-	-	-
<b>Subtotal</b>			0.000	0.000		0.000		1.000		-		1.000	-	-	N/A

			Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			0.000	0.000	0.000	5.736	-	5.736	-	-	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Navy</b>																		<b>Date: May 2021</b>				
<b>Appropriation/Budget Activity</b> 1319 / 4												<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>						<b>Project (Number/Name)</b> 3409 / <i>Advanced Aerial Refueling Store</i>				

FY2021												FY2022											
Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	Jul	Aug	Sept
												Engineering / Documentation Update											
												DCU / ORS / HSU / DLU Integration											
SBIR ORS Phase II Development												SBIR ORS Phase II.5 Development											
												Power Supply Development											
												Hydraulic System Upgrade Development (HSU)											
												DCU Card 2.0 Modification / Integration											
												Outdoor Lab Validation DCUFI						DCU Flight Test Validation					

\*SBIR ORS Phase Development is funded via SBIR office

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3409 / <i>Advanced Aerial Refueling Store</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3409</b>				
AARS Development: SBIR ORS Phase Development	1	2021	4	2022
AARS Development: Engineering Documentation Update	1	2022	4	2022
AARS Development: DCU/ORS/HSU/DLU Integration	2	2022	4	2022
AARS Development: Power Supply Development	2	2022	4	2022
AARS Development: Hydraulic System Upgrade Development	3	2022	4	2022
Testing: Outdoor Lab Validation DCU/FI	2	2022	2	2022
Testing: DCU Flight Test Validation	4	2022	4	2022

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy										<b>Date:</b> May 2021		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604659N / Precision Strike Weapons Development Program				<b>Project (Number/Name)</b> 3411 / CAD/PAD Digital Twin Modeling			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
3411: CAD/PAD Digital Twin Modeling	0.000	0.000	0.800	0.761	-	0.761	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Cartridge Actuated Devices/ Propellant Actuated Devices (CAD/PAD) Digital Twin Modeling will develop and validate models and algorithms for the Department of the Navy (DoN). Digital Twin is a software model that predicts service life of a components' energetic material. This will be used to move towards a Condition Based Maintenance Model vice restrictive service life. The development will be phased over three efforts, specific to Navy AirCrew Common Ejection Seats (NACES). These models will be used as a starting point for a condition based service life for CAD/PAD. A condition based service life will result in long term cost savings for the DoN by enabling CAD/PAD to be installed for full useful service life. These models will also be used to support initial service life decisions, service life extension decisions, and address obsolescence.

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

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<b>Title:</b> CAD/PAD Digital Twin Modeling	0.000	0.800	0.761	0.000	0.761
<b>Articles:</b>	-	-	-	-	-
<b>FY 2021 Plans:</b> FY2021 commenced software development efforts that support software validation of the Digital Twin Model using NOAA data correlated with operational and static aircraft install data. Digital twin validation will continue through FY21 once test articles are obtained. Test efforts will also include execution of Data logger design and/or COTS selection and initial surveillance testing using digital twin data collected from static and operational data.					
<b>FY 2022 Base Plans:</b> Continuing to develop software and integrating digital twin model into additional Navy or tri-service aviation platforms. Additional loggers to be added and installed into aircraft for further refinement of digital twin model and support of surveillance testing efforts.					
<b>FY 2022 OCO Plans:</b> N/A					
<b>FY 2021 to FY 2022 Increase/Decrease Statement:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3411 / <i>CAD/PAD Digital Twin Modeling</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
Budget reduced by \$0.039M from FY21 to FY22 as result of Manpower savings initiatives and miscellaneous rate changes.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.800	0.761	0.000	0.761

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• PANMC/0180: CARTRIDGE ACTUATED DEVICES/ PROPELLANT ACT DEVICES	52.941	67.190	70.876	-	70.876	-	-	-	-	-	-

**Remarks**  
The software development for CAD/PAD products to support inventory objectives by transitioning to condition based maintenance. Recent investigations into life cycle cost savings, safety mitigation and reliability of products indicate that a substantial costs savings could be realized, address obsolescence, as well as improve readiness.

**D. Acquisition Strategy**  
Culmen International, LLC has a proven methodology to develop computer models (digital twin) relevant to the thermal loading CAD/PAD items are subjected to. A contract will be awarded to Culmen International, LLC to develop a digital twin using their proprietary software, Tru Navigator. The Tru Navigator software will use as its input, key areas of degradation to CAD/PAD items (temperature, humidity, shock, vibration and thermal cycling) and its output will be the cumulative degradation to the CAD/PAD item. Additional technologies and associated vendors will also be evaluated as necessary.

All other efforts; procurement of CAD/PAD test items, test and evaluation, and model validation will be sourced using competitive contracting strategies.

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

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / Precision Strike Weapons Development Program	<b>Project (Number/Name)</b> 3411 / CAD/PAD Digital Twin Modeling
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<b>Product Development (\$ in Millions)</b>				<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Product Development	SS/CPIF	Culmen International : Alexandria, VA	0.000	0.000		0.500	Aug 2021	0.661	Feb 2022	-		0.661	-	-	-
<b>Subtotal</b>			0.000	0.000		0.500		0.661		-		0.661	-	-	N/A

**Remarks**  
Phase 1 contract to validate Digital Twin Model using proprietary software.

<b>Support (\$ in Millions)</b>				<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Government Support	WR	NSWC : Indian Head	0.000	0.000		0.300	May 2021	0.100	Feb 2022	-		0.100	-	-	-
<b>Subtotal</b>			0.000	0.000		0.300		0.100		-		0.100	-	-	N/A

<b>Prior Years</b>	<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	0.000	0.000	0.800		0.761		-		0.761	-	-	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Navy</b>		<b>Date: May 2021</b>
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3411 / <i>CAD/PAD Digital Twin Modeling</i>

Fiscal Year	2020				2021				2022			
	1	2	3	4	1	2	3	4	1	2	3	4
<b>Milestones</b>												
<b>Product Test &amp; Development</b>												
Contract Awards												
Model Validation Phase I												
Prod. Test & Dev. Phase II												
Prod. Test & Dev. Phase III												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3411 / <i>CAD/PAD Digital Twin Modeling</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>CAD/PAD Digital Twin Modeling</i></b>				
Product Development: Contract Awards: FY21 Culmen International Contract Award	4	2021	4	2021
Product Development: Contract Awards: FY22 Culmen International Contract Award	2	2022	2	2022
Product Development: Model Validation Phase I: Model Validation Phase I	3	2021	4	2022
Product Development: Product Test and Development Phase II: Product Test and Development Phase II	3	2021	4	2022
Product Development: Product Test and Development Phase III: Product Test and Development Phase III	3	2021	4	2022

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy										<b>Date:</b> May 2021		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>				<b>Project (Number/Name)</b> 3467 / <i>Sea Launched Cruise Missile Nuclear</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
3467: <i>Sea Launched Cruise Missile Nuclear</i>	0.000	0.000	0.000	5.234	-	5.234	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

Project 3467 Sea Launched Cruise Missile - Nuclear is a new start in FY 2022.

**A. Mission Description and Budget Item Justification**

This project will design, develop, produce and deploy a Nuclear-Armed Sea-Launched Cruise Missile (SLCM-N). SLCM-N is scoped to deliver an integrated flight system and to continue to advance SLCM-N capabilities to fully address requirements identified in the 2018 Nuclear Posture Review, SLCM-N Initial Capabilities Document, and examined in the Analysis of Alternatives to mitigate a lack of a sea based tactical nuclear based system.

The major activities in the SLCM-N program include 1) Flight System (FS); 2) Weapon System Command and Control (WSC2); 3) Infrastructure [e.g. Launch Vessel (LV) and Launch Control Centers (LCC)]; 4) Weapon System Integration. Flight System is an integrated system which includes the following major subcomponents: propulsion, guidance, and warhead systems. WSC2 encompasses all weapon system C2 components and interfaces, associated shipboard hardware, shipboard fire control equipment and associated software directly related to the sustainment, survivability, monitoring and launch of the flight system. Infrastructure includes modernization of launch vessels, real property and structures, and associated ground mechanical systems. The SLCM-N program will include development of applicable support equipment, data, flight test hardware and infrastructure, and training material.

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

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
<b>Title:</b> SLCM-N	0.000	0.000	5.234	0.000	5.234
<b>Articles:</b>	-	-	-	-	-
<b>FY 2021 Plans:</b> N/A					
<b>FY 2022 Base Plans:</b> Continue concept refinement to include development of a functional architecture that supports the nuclear weapon surety rules, technology analyses, modeling and simulation support, engineering studies, program cost and schedule estimation, acquisition strategy development, risk reduction efforts, initial requirements definition, and associated acquisition documentation.					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3467 / <i>Sea Launched Cruise Missile Nuclear</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
Analyze, select, and assess cruise missile propulsion technologies, air frames, and associated components to support SLCM-N flight requirements. Conduct technology development and concept analysis and design efforts to identify areas for warhead integration to support SLCM-N trade space considerations.					
Identify and assess weapon system integration of SLCM-N's Command & Control (WSC2) systems, flight systems and infrastructure required to execute, operate, sustain, and secure the SLCM-N weapon system. Assess the Virginia Class launch and control facilities to determine the extent of and evaluate for future upgrades. Assess the Strategic Weapons Facilities handling and storage facilities to determine the extent of and evaluate for future upgrades or replacement.					
<b>FY 2022 OCO Plans:</b> N/A					
<b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> The increase from FY 2021 to FY 2022 is to initiate studies on Air Vehicle design, including studies of required related support equipment and operational support, to implement recommendations informed by the Analysis of Alternatives that will be completed in FY 2021.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	5.234	0.000	5.234

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
The SLCM-N program will deliver a weapon system capability that meets Navy requirements. For the pre-Milestone A and Technology Maturation/Risk Reduction (TMRR) phases of this strategy, contracts will be competitively awarded. The TMRR phase will include a System Requirements Review (SRR), a System Design Review (SDR) and will culminate in a system Preliminary Design Review (PDR). As appropriate, the contract will include risk reduction prototyping on key technologies and the requirement to bring forward multiple vendor designs for key government designated components/sub-components to PDR or beyond. After MS B approval, Engineering, Manufacturing and Development (EMD) contract will be competitively awarded.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Navy</b>		<b>Date: May 2021</b>
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / Precision Strike Weapons Development Program	<b>Project (Number/Name)</b> 3467 / Sea Launched Cruise Missile Nuclear

Proj 3467	FY 2020				FY 2021				FY 2022			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
SLCM-N Development												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Navy		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604659N / <i>Precision Strike Weapons Development Program</i>	<b>Project (Number/Name)</b> 3467 / <i>Sea Launched Cruise Missile Nuclear</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 3467</b>				
SLCM-N Development: SLCM-N Continuous Development	1	2022	4	2022