Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy	Date: February 2016
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603925N *I Directed Energy and Electric Weapon System*

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	4.349	54.154	41.730	32.700	-	32.700	33.828	34.200	34.868	35.575	Continuing	Continuing
3370: *Railgun*	0.000	45.699	32.266	23.776	-	23.776	24.375	24.838	25.309	25.815	Continuing	Continuing
9823: *Lasers for Navy applicat*	4.349	8.455	9.464	8.924	-	8.924	9.453	9.362	9.559	9.760	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element will transition Directed Energy and Electric Weapon Systems (DE&EWS) technology from Science and Technology (S&T) research through Technology Development into System Development and Demonstration, leading to acquisition initiation for the Surface/Subsurface Navy.

DE&EWS consist of multiple breakthrough technologies including: laser weapons that provide for speed-of-light engagements at tactically significant ranges resulting in savings realized by minimizing the use of defensive missiles and projectiles; electromagnetic launch of projectiles that will significantly increase firing ranges imposing greater cost to adversaries of ballistic and air defense missile engagements; enhance the land attack mission; and fielding of high power radio frequency systems for non-kinetic electronic attack and active denial technology, allowing for non-lethal determination of threat intent beyond small arms fire ranges.

Development of DE&EWS includes: Weapons Grade High Energy Lasers, Electromagnetic Railgun (EMRG) Weapon Systems, High Power Radio Frequency Weapon/ Sensor Systems, and other systems/capabilities.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	55.696	67.360	66.865	-	66.865
Current President's Budget	54.154	41.730	32.700	-	32.700
Total Adjustments	-1.542	-25.630	-34.165	-	-34.165
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-25.630			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.230	0.000			
• SBIR/STTR Transfer	-1.312	0.000			
• Program Adjustments	0.000	0.000	-27.000	-	-27.000
• Rate/Misc Adjustments	0.000	0.000	-7.165	-	-7.165

Change Summary Explanation

The FY 2017 request was reduced by -$1.6 million as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy	Date: February 2016
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603925N *I Directed Energy and Electric Weapon System*

The FY 2017 request was reduced by -$27 million due to the cancellation of the railgun demonstration aboard the Joint High Speed Vessel (JHSV) in FY19.

Funding for Hypervelocity Projectile (HVP) ($5.4 million) was realigned to PE 0603795N Land Attack Technology.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603925N / *Directed Energy and Electric Weapon System*	Project (Number/Name) 3370 / *Railgun*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
3370: *Railgun*	0.000	45.699	32.266	23.776	-	23.776	24.375	24.838	25.309	25.815	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Electromagnetic Railgun (EMRG): Provides ship-based program/technical development to produce a standard railgun/mount for use onboard Navy warships.

Railgun provides increased capability for the following mission sets: Naval Surface Fire Support (NSFS), Integrated Air and Missile Defense (IAMD), Fast Attack Craft and Fast Inshore Attack Craft (FAC/FIAC), and future potential for Anti-Surface Warfare (ASuW).

The EMRG will launch the Hyper Velocity Projectile (HVP), currently in development as a Future Naval Capability (FNC). The EMRG development will remain in alignment with the time-phased transition of the HVP.

EMRG uses electromagnetic energy, vice traditional chemical propellant (i.e. gun powder), to launch projectiles providing: greatly increased range (110nm vice 13nm for current chemical propellant [gunpowder] guns); increased ammunition storage capacity; increased ship safety; increased layered point defense; and decreased costs when compared to current weapons. The net effect is an increased capacity against multiple simultaneous threats at a lower operational cost to offset a potential adversary's asymmetric missile strategy.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Electromagnetic Railgun	45.699	32.266	23.776	0.000	23.776
Articles:	-	-	-	-	-
Description: Funding supports railgun management and engineering development, integration, and testing, as well as transition development of the Hypervelocity Projectile. The funding for Hypervelocity Projectile (HVP) development was realigned to PE 0603795N Land Attack Technology in FY 2017. ***FY 2015 Accomplishments:*** - Engineered/managed commonality with the OSD Experimental Campaign for mount, power, projectile, weapon, and combat interface/control. - Conducted sensor/shooter engineering trade studies. - Defined interface and control requirements.					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 3370 / *Railgun*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
- Developed hardware/software for eventual shipboard gun mount, prime and pulsed power components/ subsystems. - Developed battery and charging components/subsystems. - Defined and designed projectile critical components. - Developed/conducted flight simulations. - Initiated transition development of the Hypervelocity Projectile (HVP). - Conducted lethality analyses and airframe simulations and analyses defined/developed projectile electronics components/subsystems ***FY 2016 Plans:*** - Develop and test components of an operational EMRG system. - Continue railgun management, engineering development, integration and testing. - Conduct railgun integration activities. ***FY 2017 Base Plans:*** - Continue railgun management, engineering development, integration, and testing. - Continue railgun critical design efforts at the system level. - Initiate development of a shipboard installation package. - Coordinate efforts to establish other Doctrine, Organization, Training, Material, Leadership and Education, Personnel, and Facilities (DOTMLPF) requirements. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	45.699	32.266	23.776	0.000	23.776

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Tech maturation and system development efforts will be competitive in nature and are currently focused on establishing the technical requirements for the next round of competition prior to entering the Engineering & Manufacturing Development (E&MD) phase. The focus of the current efforts under cognizance of this PE are to ensure there are a sufficient quantity of qualified vendors at the critical component and system level to ensure a robust competitive environment at Milestone B. This effort is outside the scope of ONR efforts, which are focused on the development of component technologies and government "Smart Buyer" knowledge.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 3370 / *Railgun*

E. Performance Metrics

Quarterly Reviews, Monthly Reports, Periodic Design Reviews, Test Events and Test Artifacts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603925N / *Directed Energy and Electric Weapon System*	Project (Number/Name) 3370 / *Railgun*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware - Gun Mount/ Platform Requirements/ Development	C/CPFF	BAE via ARDEC : Washington, D.C.	0.000	6.464	Jan 2015	9.000	Feb 2016	4.988	Feb 2017	-		4.988	Continuing	Continuing	Continuing
Hardware - Gun Mount/ Platform Requirements/ Development	C/CPFF	GRYPHON, GSA : Washington,D.C., Dahlgren, VA	0.000	1.600	Jan 2015	1.100	Jan 2016	1.300	Jan 2017	-		1.300	Continuing	Continuing	Continuing
Hardware - Gun Mount/ Platform Requirements Development	WR	NSWC DD; NSWC Corona : Dahlgren, VA, Corona, CA	0.000	3.745	Mar 2015	2.250	Mar 2016	1.197	Nov 2016	-		1.197	Continuing	Continuing	Continuing
Hardware - Power Conversion	C/CPFF	NAVSEA PMS 320 Contract,ROLLS ROYCE : Washington, D.C.	0.000	0.085	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Hardware - Power Conversion	WR	NAVSSESS : Philadelphia, PA	0.000	0.000	Feb 2015	0.435	Feb 2016	1.000	Nov 2016	-		1.000	Continuing	Continuing	Continuing
Hardware - Pulsed Power Development	WR	NSWC DD; : Dahlgren, VA	0.000	0.000		1.620	Jan 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Hardware - Pulsed Power Development	C/CPFF	NAVSEA, PMS 320, BAE, RAYTHEON : Washington, D.C.	0.000	6.514	Mar 2015	1.065	Feb 2016	5.000	Feb 2017	-		5.000	Continuing	Continuing	Continuing
Hardware - Battery and Charging Supply Development/Certification	C/CPFF	NAVSEA PMS 320 Various : Washington, D.C.	0.000	4.406	Mar 2015	1.643	Mar 2016	1.250	Mar 2017	-		1.250	Continuing	Continuing	Continuing
Hardware - Battery & Charging Supply Dev/Cert	WR	NAVSSES : Philadelphia, PA	0.000	2.100	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Hardware - Projectile Development	C/CPFF	Contractor via AFRL, BAE : Rome, NY, Minneapolis, MN	0.000	0.188	Jan 2015	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Hardware - Projectile Development	WR	NSWC/DD : Dahlgren, VA	0.000	2.500	Jan 2015	5.000	Jan 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Software - Combat System & Fire Control Engineering	C/CPFF	MDA : Redstone Arsenal, AL	0.000	0.000		1.000	Mar 2016	0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 3370 / *Railgun*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Weapon System	WR	NSWC/DD : Dahlgren, VA	0.000	0.000		0.000		0.750	Nov 2016	-		0.750	Continuing	Continuing	Continuing
Software Weapon System	C/CPFF	MDA : Redstone Arsenal, AL	0.000	0.700	Mar 2015	0.000		1.010	Mar 2017	-		1.010	Continuing	Continuing	Continuing
Software Fire Control System	WR	NSWC/DD, NSWC Corona : Dahlgren, VA, Corona, CA	0.000	3.610	Mar 2015	0.000		0.750	Nov 2016	-		0.750	Continuing	Continuing	Continuing
		Subtotal	0.000	31.912		23.113		17.245		-		17.245	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering/ Management	WR	NSWC/DD : Dahlgren, VA	0.000	4.085	Feb 2015	2.933	Feb 2016	0.750	Nov 2016	-		0.750	Continuing	Continuing	Continuing
System Engineering/ Management	C/CPFF	PSU EOC, BIW, AGS : Washington, D.C.	0.000	1.236	Mar 2015	2.750	Mar 2016	2.996	Mar 2017	-		2.996	Continuing	Continuing	Continuing
		Subtotal	0.000	5.321		5.683		3.746		-		3.746	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Airframe Analysis	WR	NSWC DD, Eglin AFB, Robins AFB : Dahlgren, VA, Robins AFB GA, Eglin AFB	0.000	1.540	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
High G Electronics Engineering	WR	NSWC DD : Dahlgren, VA	0.000	1.000	Mar 2015	0.300	Mar 2016	0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 3370 / *Railgun*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Landbased/Seabased Plan/Install/Conduct	WR	NSWC/DD : Dahlgren, VA, Corona, CA	0.000	1.000	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Power and Energy Test Bed Development	WR	NAVSSESS; AFRL; Eglin : Philadelphia, PA; Washington, D.C.	0.000	2.785	Feb 2015	0.000		1.000	Nov 2016	-		1.000	Continuing	Continuing	Continuing
		Subtotal	0.000	6.325		0.300		1.000		-		1.000	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Engineering/ Management	C/CPFF	SOSSEC; KRATOS : Atkinson, NH; Washington, D.C.	0.000	1.241	Mar 2015	1.170	Mar 2016	1.050	Mar 2017	-		1.050	Continuing	Continuing	Continuing
Project Engineering/ Management	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.900	Mar 2015	2.000	Mar 2016	0.735	Nov 2016	-		0.735	Continuing	Continuing	Continuing
		Subtotal	0.000	2.141		3.170		1.785		-		1.785	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	45.699		32.266		23.776		-		23.776	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 3370 / *Railgun*

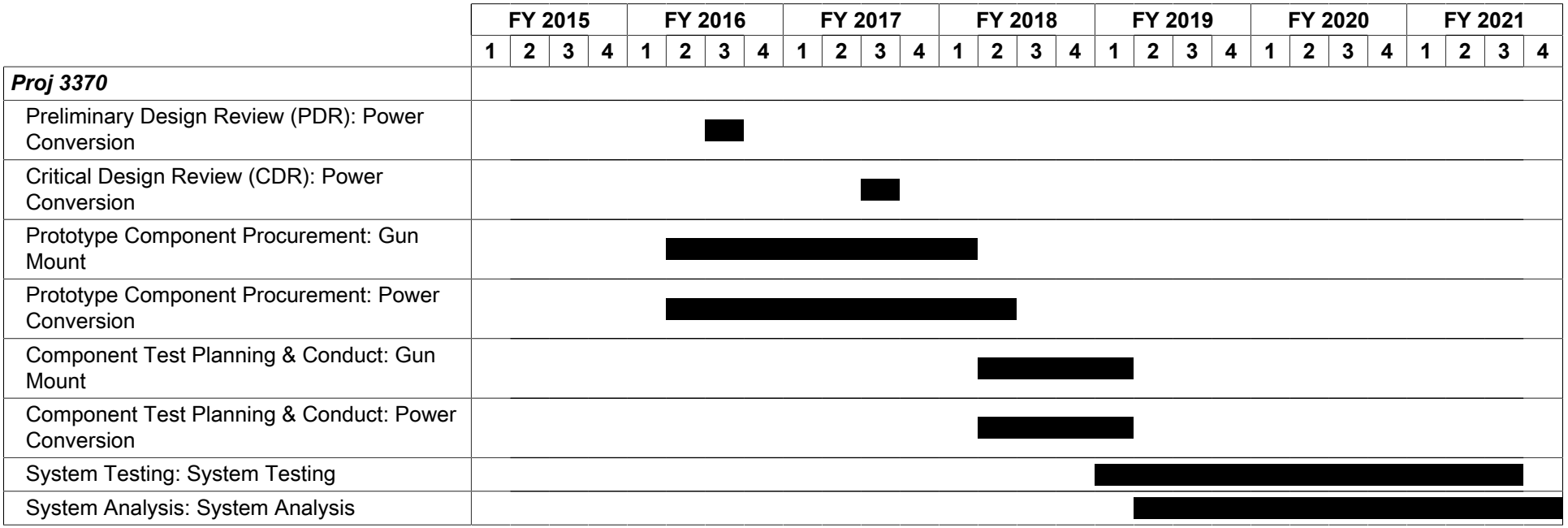

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 3370 / *Railgun*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3370				
Preliminary Design Review (PDR): Power Conversion	3	2016	3	2016
Critical Design Review (CDR): Power Conversion	3	2017	3	2017
Prototype Component Procurement: Gun Mount	2	2016	1	2018
Prototype Component Procurement: Power Conversion	2	2016	2	2018
Component Test Planning & Conduct: Gun Mount	2	2018	1	2019
Component Test Planning & Conduct: Power Conversion	2	2018	1	2019
System Testing: System Testing	1	2019	3	2021
System Analysis: System Analysis	2	2019	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603925N / *Directed Energy and Electric Weapon System*	Project (Number/Name) 9823 / *Lasers for Navy applicat*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
9823: *Lasers for Navy applicat*	4.349	8.455	9.464	8.924	-	8.924	9.453	9.362	9.559	9.760	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Lasers for Navy Applications, Solid State Laser (SSL) Low Power Module (LPM) Development: The SSL provides a capability to support existing Gaps (JROC EW ICD 177-09; MAMDJF ICD; IAMD JCD; USPACOM FY 10-15 IPL - Gap 6; SAG V SAG Roadmap; 3rd Fleet IPCLs; 7th Fleet IPCLs; JUONS: Counter-Boat Swarm///UAV) with the ability to dazzle Unmanned Aerial Systems (UASs). SSL LPM leverages the Office of Naval Research (ONR) efforts on the SSL Quick Reaction Capability (QRC) and SSL Technology Maturation (TM) efforts. SSL LPM will transition this capability from Science and Technology (S&T) development to a Program of Record (PoR).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Solid State Laser (SSL) Low Power Module (LPM) Development	8.455	9.464	8.924	0.000	8.924
Articles:	-	-	-	-	-

Description: Lasers for Navy Applications, Solid State Laser (SSL) Low Power Module (LPM) Development provides the ability to dazzle Unmanned Aerial Systems (UASs).

The funding increase from FY15 to FY16 supports the compilation/assembly of components into a prototype LPM for testing, as well as, additional testing in representative atmospheric conditions. The funding decrease from FY16 to FY17 reflects a decrease in the Product Development engineering.

FY 2015 Accomplishments:
- Procured the modeling and simulation software to be run to determine the operational capabilities for LPM.
- Managed/system engineered product development of the Low Power Module (LPM) Counter-Electro Optic Infra-Red (EO/IR) and MWIR hardware/software/firmware module.
- Developed associated test and control equipment to interface with the Laser Weapon System(s).
- Completed indoor and outdoor sensor effects testing required to characterize laser specific capabilities.

FY 2016 Plans:
- Continue Low Power Module management, engineering, design, development.
- Conduct more rigorous outdoor testing to validate software models.
- Initiate procurement of test bed components.
- Conduct subsystem testing of components.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 9823 / *Lasers for Navy applicat*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
- Accomplish test planning for preparation/conduct of the LPM prototype. - Plan for integrated testing in FY 17. - Initiate Test & Evaluation Master Plan (TEMP). ***FY 2017 Base Plans:*** - Finalize TEMP. - Continue Low Power Module management, engineering, design, development, procurement and integration of test bed components. - Conduct final integration check out of the LPM. - Initiate land based test of the LPM system at the land based site. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	8.455	9.464	8.924	0.000	8.924

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The LPM is a primarily government developed system. Competition will be utilized for appropriate efforts. The acquisition strategy will transition the developed LPM capabilities along with ONR and PMS 405 funded efforts using BA-4 Technology Development, which will lead to Engineering & Manufacturing Development and production/fielding in the early 2020's.

E. Performance Metrics

Quarterly Reviews, Monthly Progress/Status Reports, Scheduled Design/Program Reviews.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 9823 / *Lasers for Navy applicat*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Low Power Module	WR	NSWC DD : DAHLGREN, VA	0.636	2.066	Feb 2015	1.704	Feb 2016	1.500	Feb 2017	-		1.500	Continuing	Continuing	Continuing
Low Power Module	WR	SSC PAC : SAN DIEGO, CA	0.475	0.583	Feb 2015	0.500	Feb 2016	0.500	Feb 2017	-		0.500	Continuing	Continuing	Continuing
Low Power Module	WR	NSWC CRANE : CRANE, IN	0.380	0.600	Feb 2015	0.644	Feb 2016	0.450	Feb 2017	-		0.450	Continuing	Continuing	Continuing
Low Power Module	WR	NRL : WASHINGTON, D.C.	0.045	0.150	Feb 2015	0.150	Feb 2016	0.175	Feb 2017	-		0.175	Continuing	Continuing	Continuing
Low Power Module	C/CPFF	BOEING : SAN DIEGO, CA	1.349	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MSM Testbed	WR	NSWC DD : DAHLGREN, VA	0.000	1.227	Feb 2015	1.000	Feb 2016	0.850	Feb 2017	-		0.850	Continuing	Continuing	Continuing
MSM Testbed	C/CPFF	PSU EOC : FREEPORT, PA	0.000	0.500	Mar 2015	0.500	Mar 2016	0.350	Mar 2017	-		0.350	Continuing	Continuing	Continuing
Platform Integration	WR	NSWC DD : DAHLGREN, VA	0.000	0.222	Feb 2015	0.297	Feb 2016	0.400	Feb 2017	-		0.400	Continuing	Continuing	Continuing
Platform Integration	WR	SSC PAC : SAN DIEGO, CA	0.000	0.000		0.150	Feb 2016	0.175	Feb 2017	-		0.175	Continuing	Continuing	Continuing
Platform Integration	WR	NSWC CRANE : CRANE, IN	0.000	0.000		0.000		0.150	Feb 2017	-		0.150	Continuing	Continuing	Continuing
Platform Integration	WR	NSWC CARDEROCK : BETHESDA, MD	0.000	0.240	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	2.885	5.588		4.945		4.550		-		4.550	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems/Mgmt Engineering	C/CPFF	SOSSEC : ATKINSON, NH	0.640	0.182	Mar 2015	1.100	Mar 2016	1.100	Mar 2017	-		1.100	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 9823 / *Lasers for Navy applicat*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems/Mgmt Engineering	WR	NSWC DD : DAHLGREN, VA	0.000	0.100	Jan 2015	0.150	Jan 2016	0.250	Jan 2017	-		0.250	Continuing	Continuing	Continuing
Systems/Mgmt Engineering	C/CPFF	PSU EOC : FREEPORT, PA	0.485	0.422	Mar 2015	0.350	Mar 2016	0.350	Mar 2017	-		0.350	Continuing	Continuing	Continuing
Modeling & Simulation	WR	NSWC DD : DAHLGREN, VA	0.000	0.249	Feb 2015	0.150	Mar 2016	0.150	Mar 2017	-		0.150	Continuing	Continuing	Continuing
		Subtotal	1.125	0.953		1.750		1.850		-		1.850	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Planning & Execution	C/CPFF	NSWC DAHGREN : DAHLGREN, VA	0.000	0.000		0.200	Mar 2016	0.250	Mar 2017	-		0.250	Continuing	Continuing	Continuing
Test Planning & Execution	WR	PHD NSWC : PORT HUENEME, CA	0.150	0.030	Feb 2015	0.500	Feb 2016	0.633	Feb 2017	-		0.633	Continuing	Continuing	Continuing
Test Planning & Execution	WR	NSWC DD : DAHLGREN, VA	0.000	0.250	Feb 2015	0.500	Feb 2016	0.633	Feb 2017	-		0.633	Continuing	Continuing	Continuing
Test Planning & Execution	WR	NSWC CRANE : CRANE, IN	0.000	0.214	Feb 2015	0.250	Feb 2016	0.262	Feb 2017	-		0.262	Continuing	Continuing	Continuing
		Subtotal	0.150	0.494		1.450		1.778		-		1.778	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Safety, Product Support, Security, Operations	WR	NSWC DD : DAHLGREN, VA	0.189	1.000	Feb 2015	0.819	Feb 2016	0.446	Feb 2017	-		0.446	Continuing	Continuing	Continuing
Safety, Product Support, Security, Operations	C/CPFF	NSWC DD : DAHGREN, VA	0.000	0.420	Mar 2015	0.500	Mar 2016	0.300	Mar 2017	-		0.300	Continuing	Continuing	Continuing
		Subtotal	0.189	1.420		1.319		0.746		-		0.746	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603925N / *Directed Energy and Electric Weapon System*	Project (Number/Name) 9823 / *Lasers for Navy applicat*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.349	8.455		9.464		8.924		-		8.924	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 9823 / *Lasers for Navy applicat*

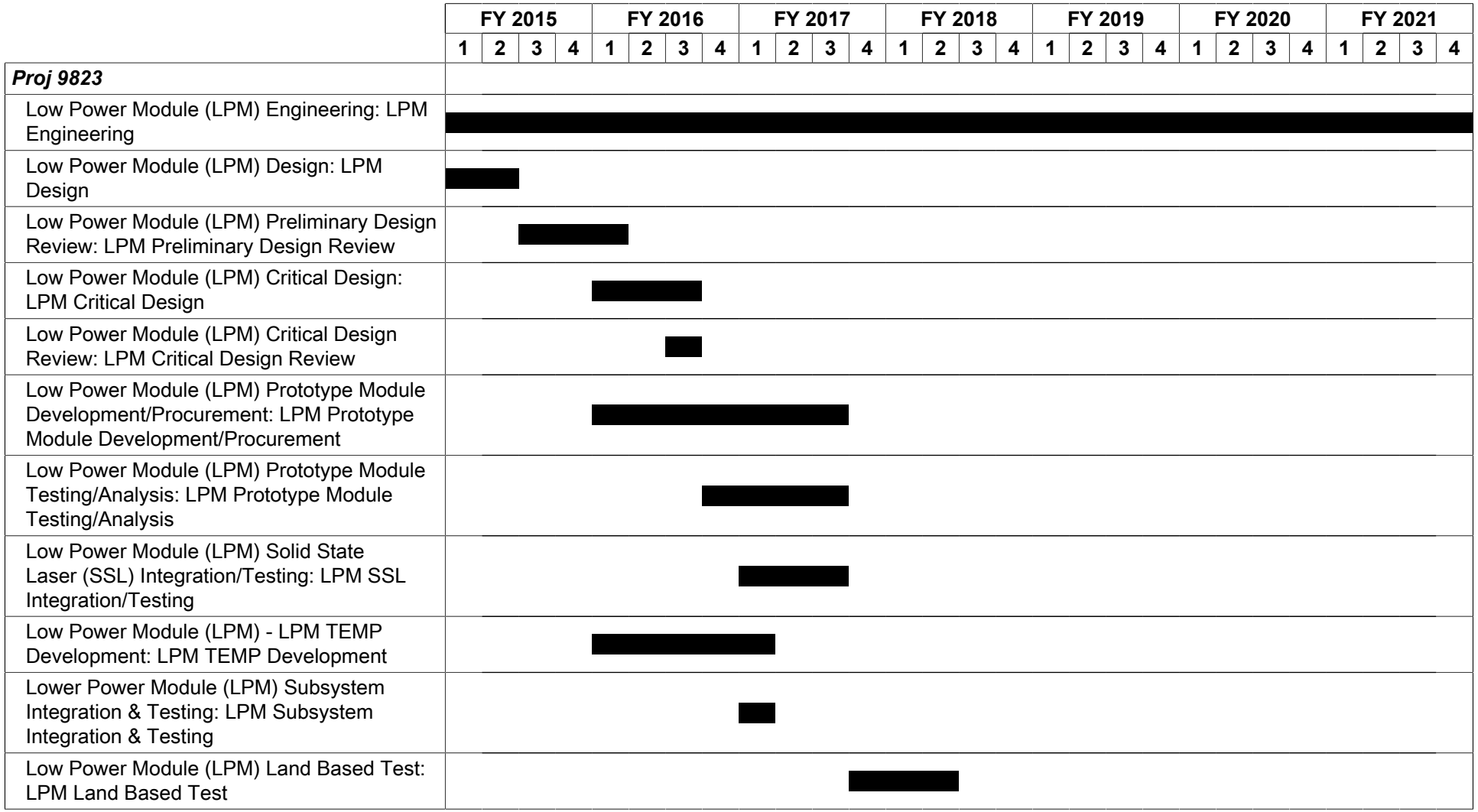

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 9823 / *Lasers for Navy applicat*

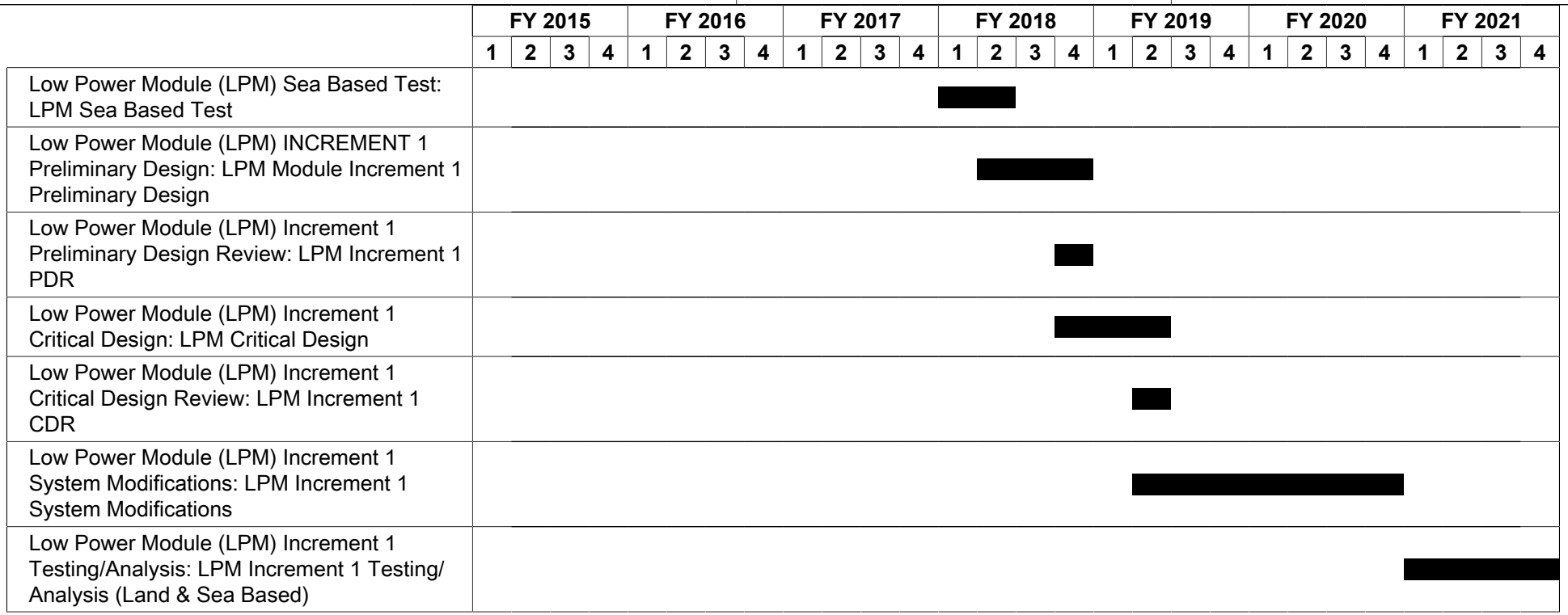

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 9823 / *Lasers for Navy applicat*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9823				
Low Power Module (LPM) Engineering: LPM Engineering	1	2015	4	2021
Low Power Module (LPM) Design: LPM Design	1	2015	2	2015
Low Power Module (LPM) Preliminary Design Review: LPM Preliminary Design Review	3	2015	1	2016
Low Power Module (LPM) Critical Design: LPM Critical Design	1	2016	3	2016
Low Power Module (LPM) Critical Design Review: LPM Critical Design Review	3	2016	3	2016
Low Power Module (LPM) Prototype Module Development/Procurement: LPM Prototype Module Development/Procurement	1	2016	3	2017
Low Power Module (LPM) Prototype Module Testing/Analysis: LPM Prototype Module Testing/Analysis	4	2016	3	2017
Low Power Module (LPM) Solid State Laser (SSL) Integration/Testing: LPM SSL Integration/Testing	1	2017	3	2017
Low Power Module (LPM) - LPM TEMP Development: LPM TEMP Development	1	2016	1	2017
Lower Power Module (LPM) Subsystem Integration & Testing: LPM Subsystem Integration & Testing	1	2017	1	2017
Low Power Module (LPM) Land Based Test: LPM Land Based Test	4	2017	2	2018
Low Power Module (LPM) Sea Based Test: LPM Sea Based Test	1	2018	2	2018
Low Power Module (LPM) INCREMENT 1 Preliminary Design: LPM Module Increment 1 Preliminary Design	2	2018	4	2018
Low Power Module (LPM) Increment 1 Preliminary Design Review: LPM Increment 1 PDR	4	2018	4	2018
Low Power Module (LPM) Increment 1 Critical Design: LPM Critical Design	4	2018	2	2019
Low Power Module (LPM) Increment 1 Critical Design Review: LPM Increment 1 CDR	2	2019	2	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603925N / *Directed Energy and Electric Weapon System*	**Project (Number/Name)** 9823 / *Lasers for Navy applicat*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Low Power Module (LPM) Increment 1 System Modifications: LPM Increment 1 System Modifications	2	2019	4	2020
Low Power Module (LPM) Increment 1 Testing/Analysis: LPM Increment 1 Testing/ Analysis (Land & Sea Based)	1	2021	4	2021

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