Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	6.509	0.745	0.761	0.772	-	0.772	0.794	0.804	0.820	0.836	Continuing	Continuing
1830: *RADIAC Development*	6.509	0.745	0.761	0.772	-	0.772	0.794	0.804	0.820	0.836	Continuing	Continuing

A. Mission Description and Budget Item Justification

Mission Description: The Radiation Detection, Indication and Computation (RADIAC) Program is responsible for providing radiation monitoring instruments that detect and measure ionizing radiation. These instruments are used on all Navy, Coast Guard and Military Sealift Command vessels, and at every Navy shore installation, in order to ensure the safety of personnel, continuity of operations in radiological contingencies, and protection of the environment.

Justification: Title 10 of the Code of Federal Regulations, Part 20 (10 CFR 20) requires RADIAC instruments be used to ensure the safety of personnel who work with or who are exposed to radioactive materials in their jobs. Additionally, the Navy's mission requires personnel and ships to have the ability to operate in radiological environments and the ability to identify and interdict radiological Weapons of Mass Destruction (WMD). Navy programs that require RADIAC instruments for Occupational Safety & Health (OSH) under the provisions of 10 CFR 20 include Naval Nuclear Propulsion, Nuclear Weapons, Medical, and Radiological Affairs Support. Non-OSH programs include Radiological Defense, Consequence Management, Training, Technical (RADIAC calibration, shielding evaluation, research) and Radiological Search (maritime interdiction and radiological search missions to locate or intercept WMD).

This budget item develops, tests and evaluates new, highly reliable, more easily calibrated, easy to care and maintain, light weight and modern RADIAC instruments in order to improve the effectiveness of radiation safety, to make instruments simpler to use, and to reduce life cycle costs. The ultimate goal is to replace old, bulky, costly to maintain and repair, unreliable and obsolete instrumentation with multifunction equipment that can be automatically calibrated at greatly reduced cost.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.775	0.761	0.000	-	0.000
Current President's Budget	0.745	0.761	0.772	-	0.772
Total Adjustments	-0.030	0.000	0.772	-	0.772
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.030	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	0.772	-	0.772

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
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 0603542N *I Radiological Control*

Change Summary Explanation

FY21 reduction of $30K was a general Execution Realignment SB Issue.

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy										Date: April 2022		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603542N / *Radiological Control*				Project (Number/Name) 1830 / *RADIAC Development*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
1830: *RADIAC Development*	6.509	0.745	0.761	0.772	-	0.772	0.794	0.804	0.820	0.836	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Mission: The Radiation Detection, Indication and Computation (RADIAC) Program is responsible for providing radiation monitoring instruments that detect and measure radiation in accordance with the provisions of Title 10 of the Code of Federal Regulations (10 CFR 20). These instruments are used on all vessels afloat and at every shore installation in order to ensure the safety of personnel and the environment. RADIACs are also required after an act of terrorism or war that involves nuclear material in order to enable continuation of warfighting ability.

Justification: Many RADIAC instruments and dosimetry systems are decades old and approaching the end of their useful lives. In some cases the equipment and replacement parts are no longer manufactured, making the equipment logistically unsupportable. In other cases increasing failure rates due to age make replacements an economic efficiency
improvement. In all cases a technology refresh will make both economic sense in terms of lowering the total ownership costs, and will also provide increased operational capabilities.

Naval Nuclear Propulsion Program (NNPP): Instruments are developed to support the safe operation and maintenance of nuclear powered vessels and at nuclear maintenance facilities.

Non-NNPP: Instruments are developed to support other than NNPP end users, such as Explosive Ordnance Disposal, Nuclear Weapons, Medical, Industrial Radiography, Radiological Defense and Training.

Visit, Board, Search & Seizure (VBSS): The Navy has been tasked to intercept and board vessels at sea to search for nuclear or radiological materials that could be used for terrorist attacks. These instruments would have different characteristics than those used for NNPP and non-NNPP purposes and prototypes must be developed and/or tested and evaluated.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Primary Dosimetry	0.210	0.160	0.245	0.000	0.245
Articles:	-	-	-	-	-
Description: The need for primary dosimetry is inherent due to the Navy's operation of nuclear reactors and their emission of ionizing radiation. Title 10 CFR 20.1502 states "Each licensee shall monitor exposures to radiation and radioactive material at levels sufficient to demonstrate compliance with the occupational dose limits." A primary dosimeter must pass accreditation proficiency testing, allowing the reading obtained					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total

to become a part of an individual's permanent health record. This permanent record is used to protect the individual radiation worker's health, and also the Navy from future liability. The Navy's current primary device is the DT-702/PD, a passive Thermo Luminescence Dosimeter (TLD). Existing TLDs and newer technologies, such as Optically Stimulated Luminescence (OSL), must be continually researched to determine on-going performance parameters, cost to field and cost to maintain, since the current system is approaching the end of its useful life and must be replaced by 2030.

A passive device does not provide a display of the dose being received, which can be important in certain circumstances. The dosimeter instead must be sent to a facility with a special reader to recover the dose, which is then entered in the individual's medical records. An active device displays the dose digitally in real time, providing immediate feedback in high risk scenarios. Newer passive-active systems can do both.

FY 2022 Plans:

TFS and Landauer, Inc. Cooperative Research and Development Agreement (CRADA) testing will be finalized in FY 2022 and the final report will be provided to NAVSEA 04ND. The CRADA testing for the Mirion Technologies, Inc. dosimetry system will be continued.

NSWCCD will extend the CRADAs for TFS and Landauer, Inc. for an additional two years to test the Radiological Affairs Support Program (RASP), Bureau of Medicine (BUMED), and Naval Nuclear Propulsion Program (NNPP) applications of the software and hardware. This includes but is not limited to: dosimeter connectivity, dosimetry reports, and the dosimeters' ruggedness for use by the NNPP.

FY 2023 Base Plans:

Mirion Technologies, Inc. CRADA testing will be finalized and a final report will be submitted to NAVSEA 04ND.

NSWCCD will extend the CRADA for Mirion Technologies, Inc. for an additional two years to test the NAVSEA Radiological Affairs Support Office, BUMED and NNPP applications of the software and hardware. This includes but is not limited to the following: dosimeter connectivity, dosimetry reports, and the dosimeter's ruggedness for use by the Naval Nuclear Propulsion Program (NNPP), Bureau of Medicine (BUMED), and Radiological Affairs Support Program (RASP). NSWCCD will continue the CRADA testing of the TFS and Landauer Systems.

FY 2023 OCO Plans:

N/A

FY 2022 to FY 2023 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Increased testing requirements.					
Title: Secondary Dosimetry	0.252	0.157	0.212	0.000	0.212
Articles:	-	3	-	-	-
Description: Secondary dosimetry includes the monitoring of doses to the hands, feet and eyes. In some medical and industrial applications, there is a high risk of such local high exposures due to the handling of sources, working close to a high radiation field, or using/cleaning high-energy beta emitters. Because of this, the need to accurately measure extremity dose is of significant importance to the Navy. The legacy system currently used for hands and feet dose measurements is RadStar. This is an active system (see the Primary Dosimetry Overall Description task for a discussion of passive and active dosimeters), but it is no longer supported by the vendor and must be replaced. To that end the ED3 system was procured in FY18 and has been tested and a report rendered on its suitability as a replacement. This is another active system, but shortfalls noted were that it currently measures only exposure to the hands, and it is too fragile for industrial-type use. Another active system being considered is the iMUX, which has the advantage of being wireless (the other two require wires that extend from the extremities to a pager-sized device clipped to the belt or worn on the wrist), and is capable of measuring dose at both the hands and feet. Measurement of dose at the eyes is currently extrapolated from the Navy's passive primary dosimeter, the DT-702/PD. Because eyes are subject to development of cataracts with prolonged or high dose exposure to radiation, a more precise and real time measuring device is being sought in the systems being evaluated. ***FY 2022 Plans:*** NSWCCD will complete testing and generate a report for the electronic dosimeter test samples tested at NSWCCD. NSWCCD procured two electronic dosimeters from Mirion and Thermo in order to conduct radiological and environmental destructive testing. The articles these two vendors provided at no cost in FY21 via the respective CRADAs for non-destructive testing were returned. ***FY 2023 Base Plans:*** A final report will be submitted to NAVSEA 04ND. ***FY 2023 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increased level of effort for final report.					
Title: Visit, Board, Search & Seizure	0.080	0.080	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Visit, Board, Search & Seizure (VBSS) mission of the Navy is the requirement to board ships and be able to detect and identify potential radiological or nuclear Weapons of Mass Destruction (WMD). Such a sensitive mission requires leading edge technology and capabilities to ensure success. The AN/PDX-1 RADIAC Set was fielded in response to a Joint Urgent Operational Needs Statement to meet this requirement. It contains three instruments that serve different purposes: (1) a Handheld Radiation Monitor (HRM)that searches for radiological materials; (2) a Radioisotope Identifier (RID) that identifies the type of radiological material located; and (3) a Personal Radiation Detector (PRD) that displays the radiological dose the VBSS team members may be receiving so that they can be aware if they are being exposed to dangerous levels of radioactivity during the mission. Current technology dictates that the sensitivity of the detectors is directly proportional to the size of the detector element; i.e., the larger the detector, the more sensitive and capable it is. However, in VBSS there must be a tradeoff between size/weight and capability, since it is difficult and hazardous for boarding parties to carry a backpack-sized detector, along with their weapons and other gear, up a rope ladder to board a vessel on the high seas. This will be a continuing effort to find smaller, lighter instruments with enhanced sensitivity, reach-back capability, and other enhancements to provide the Navy the best and most cost effective equipment possible for this mission. ***FY 2022 Plans:*** NSWCCD will complete the testing of the PRDs and HRMs acquired in FY 2020. The test results of the PRD and HRM will be reported to NAVSEA 04ND. ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** End of subproject.					
Title: Laboratory Test Equipment	0.203	0.069	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Articles:	2	1	-	-	-
Description: Laboratory Test Equipment are used in laboratories to test and evaluate radiation detectors and dosimetry devices. The primary end users will be NSWCCD and NDC. The beta irradiators will be used throughout the development and procurement of the Navy's new primary dosimetry system to evaluate system performance. Handheld radiation detection equipment from the Radiological Detection System (RDS) can also be evaluated using the beta irradiators. The upgraded Ortec equipment will be used to analyze the new accident dosimeter after exposure to a criticality event. ***FY 2022 Plans:*** Due to radioactive decay, the activity of the cobalt source in the GC-60 irradiator will be too low for multiple RADIAC testing. A new 64 Ci Co-60 source will be acquired and installed in the GC-60. ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** No laboratory equipment required.					
Title: AN/PDR-70 Electronics Upgrade	0.000	0.054	0.134	0.000	0.134
Articles:	-	-	3	-	3
Description: The AN/PDR-70 provides accurate dose rate measurements during neutron radiation surveys. The AN/PDR-70 is over 25 years old and as identified by the 2020 life cycle audit (LCA), has multiple obsolescence issues. Based on the LCA, a replacement for the AN/PDR-70 needs to be identified within the next six years. A possible solution is replacing the electronics package on the detector. This has been done with other legacy RADIACs and is an effective method of extending the life of the device for an additional 15-20 years. In addition to the electronics upgrade, NSWCCD will also research and test the effects of modifying the amount of moderator material used on the instrument. This will have a positive impact on the weight of the device, which has been a long-standing complaint by the end user community. ***FY 2022 Plans:*** OCO: NSWCCD will discuss the path forward with engineers at the In Service Engineering Agent and formulate a strategy for upgrading the electronics in order to improve the instrument's performance and extend its useful life.					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
In addition, less moderator material may be utilized in order to decrease the average weight of the meter without significantly impacting detection performance. ***FY 2023 Base Plans:*** The specifications for the electronics upgrade and the lighter neutron survey meter will be developed by NSWCCD/ISEA. A test plan will be developed by the NSWCCD and the In Service Engineering Agent (ISEA) in FY23. A contract will be awarded in FY23 to upgrade three (3) AN/PDR-70s with the new electronics package and a variation of moderator thickness and material. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Procurement of three test articles.					
Title: Radiological Detection System Training Device	0.000	0.148	0.055	0.000	0.055
Articles:	-	3	-	-	-
Description: The Radiological Detection System (RDS) is a survey meter with ancillary probes that is being procured by all the Services and some North Atlantic Treaty Organization (NATO) allies to replace the legacy equipment in all the respective procuring activities, and to allow joint interoperability. The Training Device will be an instrument designed to simulate the detection and measurement of alpha, beta, gamma, neutron and low energy X-rays for trainees on the RDS equipment without having to use actual radioactive sources. This makes the training safer and more cost effective to manage by avoiding the significant legal and safety issues involved when using radioactive sources. ***FY 2022 Plans:*** NSWCCD will initiate discussions with the RDS manufacturer and multiple training equipment manufacturers to determine the possible collaborations needed to develop the system. NSWCCD will award a contract for prototypes to be evaluated. ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Test articles not procured in FY23.					
Title: Surface Contamination Monitor	0.000	0.093	0.126	0.000	0.126
Articles:	-	-	-	-	-
Description: A Surface Contamination Monitor (SCM) will allow the end user to quickly survey large areas for alpha-beta contamination. These types of surveys are required by federal, state and Navy regulations prior to releasing an area for unlimited use. SCM technology configurations include proportional detectors or scintillation type detectors. In addition, the SCM automated mapping and report generating features will accelerate these types of radiological surveys. These devices would be used at shipyard facilities by the Naval Nuclear Propulsion Program. ***FY 2022 Plans:*** As the lead activity for this effort, Portsmouth Naval Shipyard (PNSY) will have an established CRADA in FY 2021. NSWCCD will participate with PNSY and review the CRADA Test Plan drafted by shipyard personnel. The CRADA prototype testing will commence in FY 2022 at the NSWCCD Radiation Range. ***FY 2023 Base Plans:*** NSWCCD will continue participating on the CRADA status calls with PNSY. The SCM Prototype testing is expected to be completed at the on FY23. NSWCCD personnel will observe the operational portion of the SCM testing at PNS. NSWCCD will receive a copy of the PNS CRADA Test Report for comments and review. The final copy of the report will be submitted by NSWCCD via a Technical Document Submission to NAVSEA 04ND for their records. In addition, a recommendation will be provided by PNS/NNPP/NSWCCD to NAVSEA 04ND, based on the results of the CRADA, to move this project to the OPN phase. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increased level of effort for testing and reporting.					
Accomplishments/Planned Programs Subtotals	0.745	0.761	0.772	0.000	0.772

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• OPN 2920: *RADIAC*	10.335	7.828	9.062	-	9.062	9.140	9.582	9.731	9.915	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Development efforts are focused on evaluation, modification (as required to meet operational requirements) and adaptation of commercial-off-the-shelf (COTS) technology in order to minimize total ownership costs. To the maximum extent possible new contracts are targeted for fixed price efforts to control development cost.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation Labor	WR	NSWCCD : West Bethesda, MD	5.589	0.660	Nov 2020	0.493	Nov 2021	0.680	Nov 2022	-		0.680	Continuing	Continuing	Continuing
Secondary Dosimetry	C/FFP	NSWCCD : West Bethesda, MD	0.688	0.000		0.059	Mar 2022	0.000		-		0.000	0.000	0.747	0.162
Laboratory Test Equipment	C/FFP	NSWCCD : West Bethesda, MD	0.232	0.085	Aug 2021	0.104	Mar 2022	0.000		-		0.000	0.000	0.421	-
RDS Training Device	C/FFP	NSWCCD : West Bethesda, MD	0.000	0.000		0.105	Feb 2022	0.000		-		0.000	0.000	0.105	-
AN/PDR-70 Electronics & Moderator Upgrade	C/FFP	NSWCCD : West Bethesda, MD	0.000	0.000		0.000		0.092	Aug 2023	-		0.092	0.000	0.092	-
		Subtotal	6.509	0.745		0.761		0.772		-		0.772	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.509	0.745		0.761		0.772		-		0.772	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

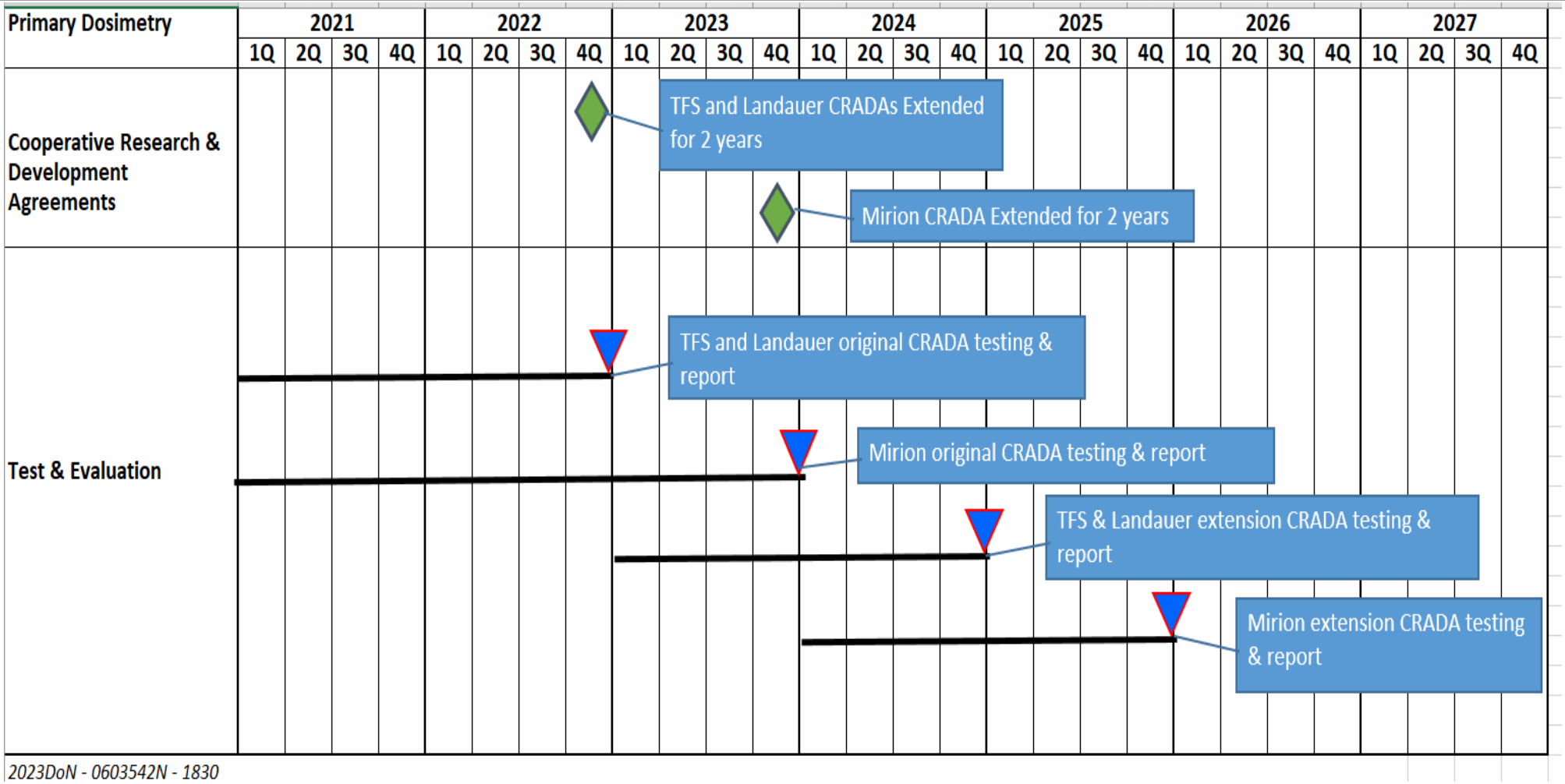

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

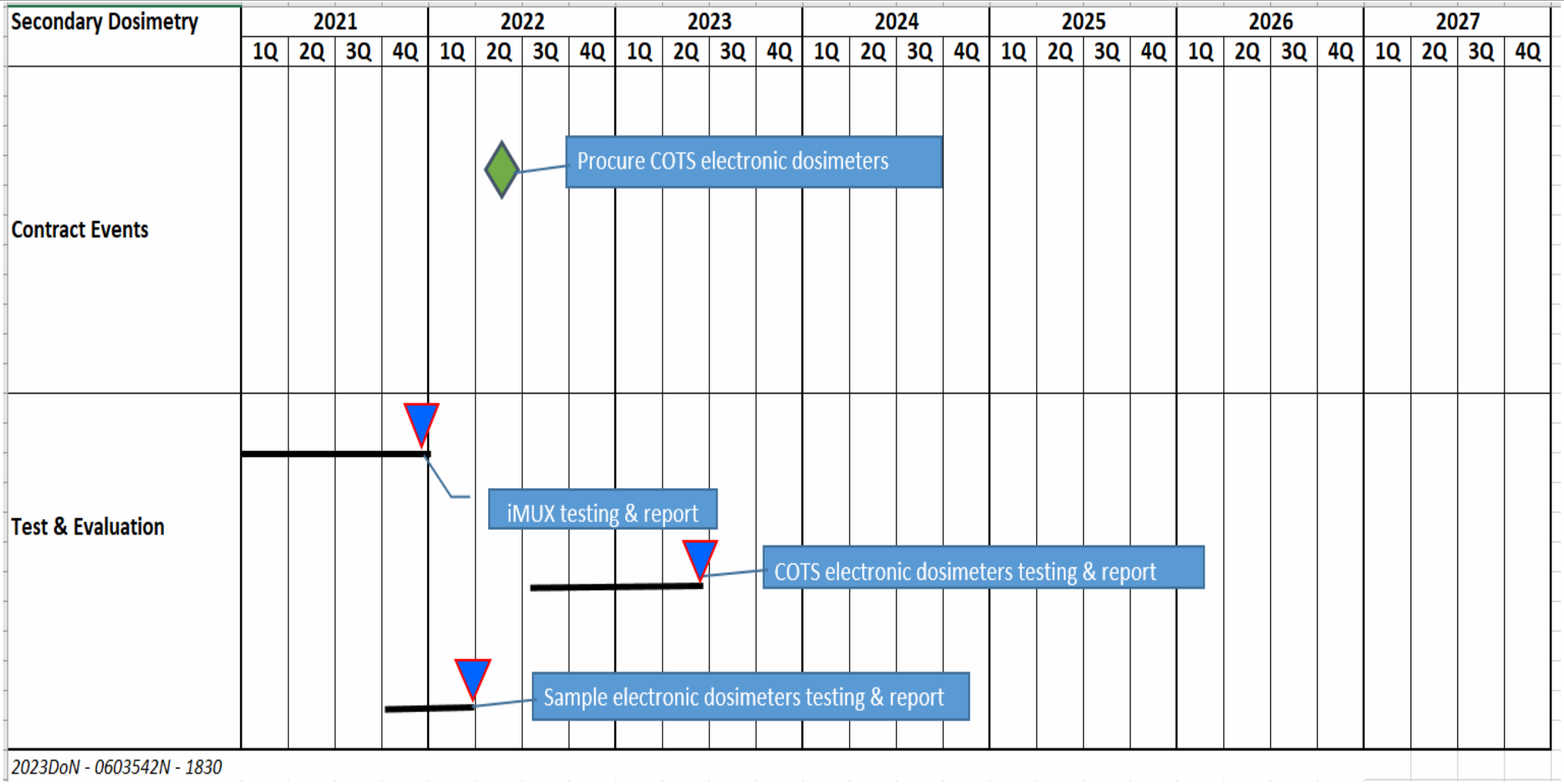

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

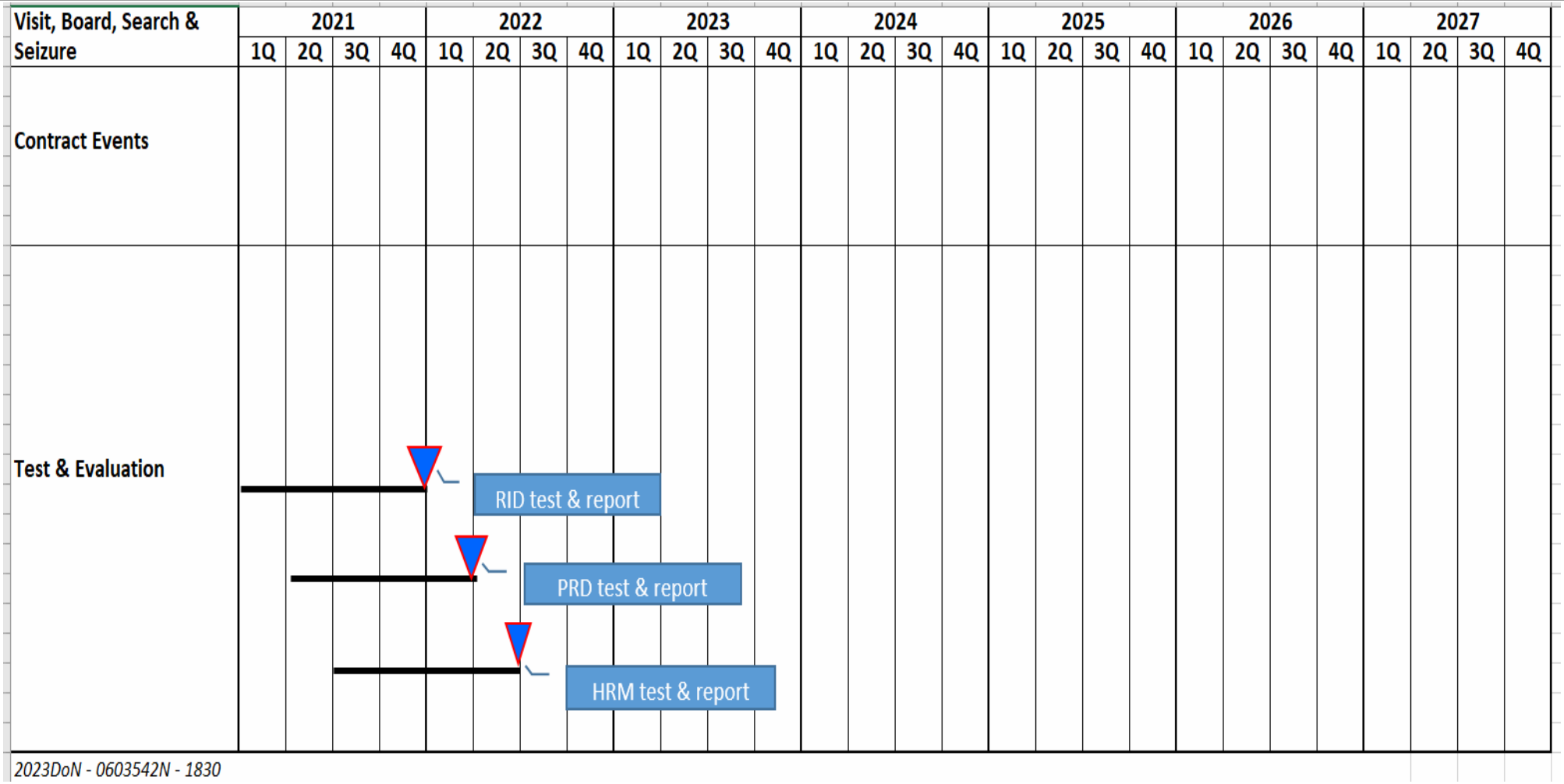

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

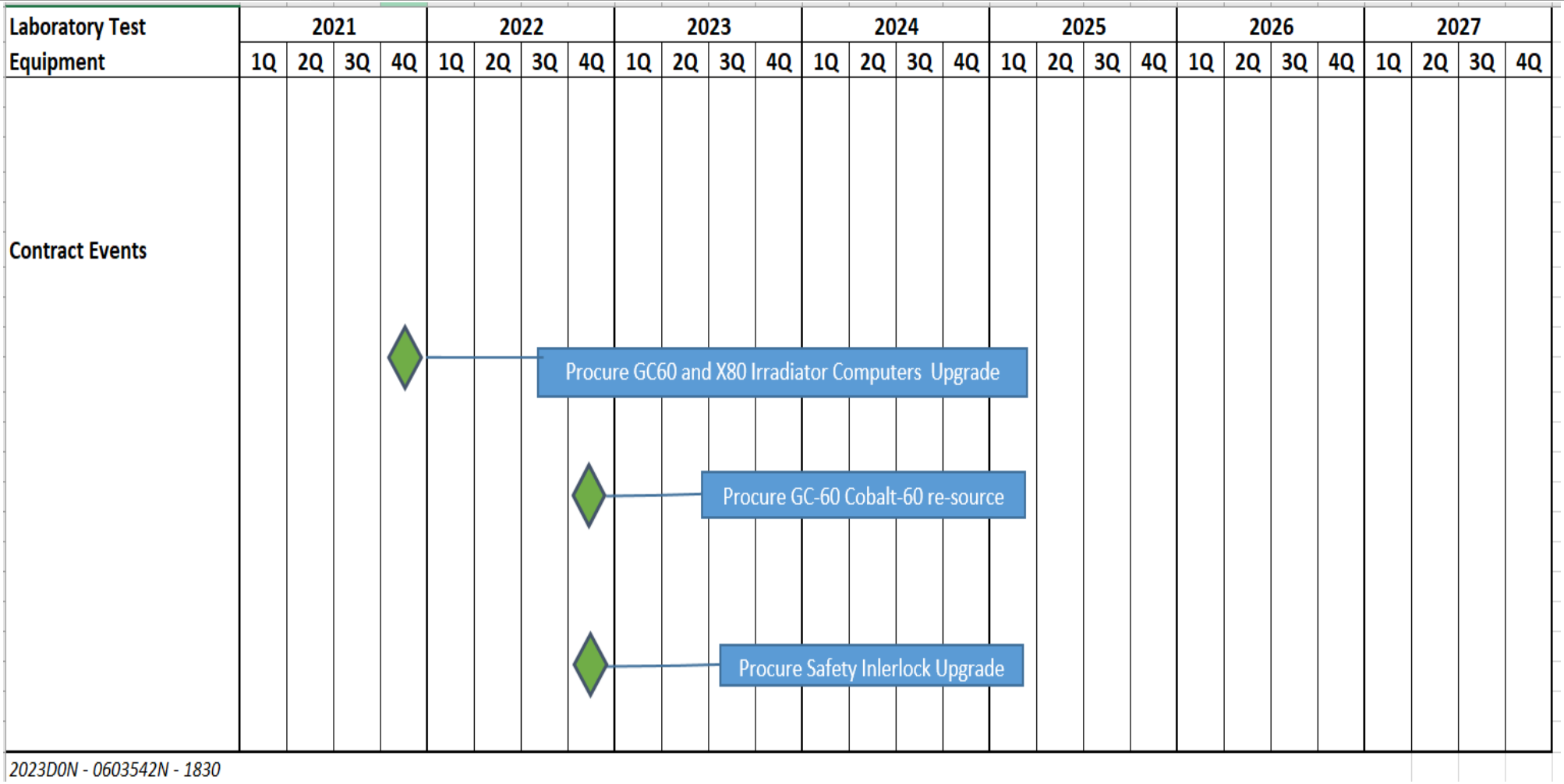

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

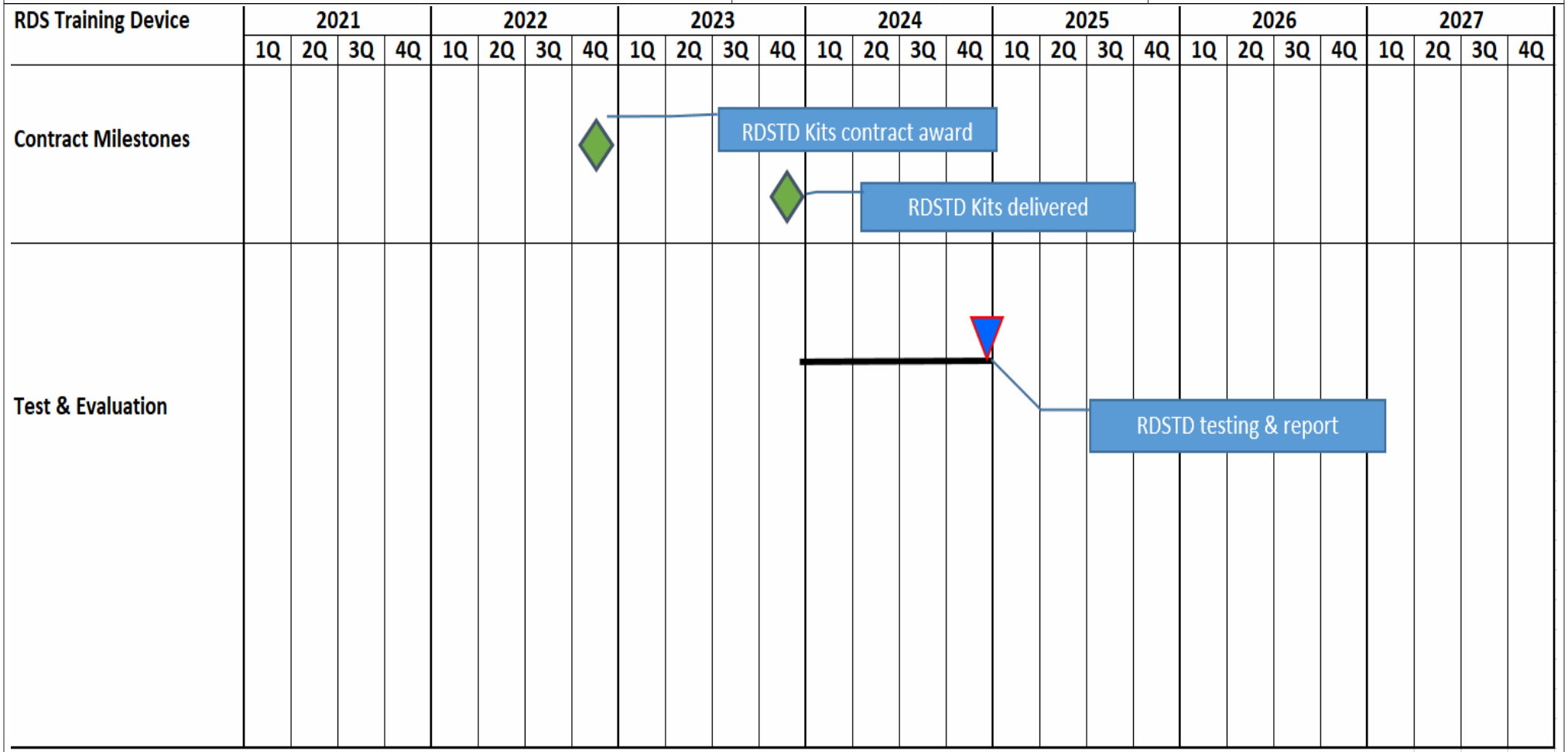

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

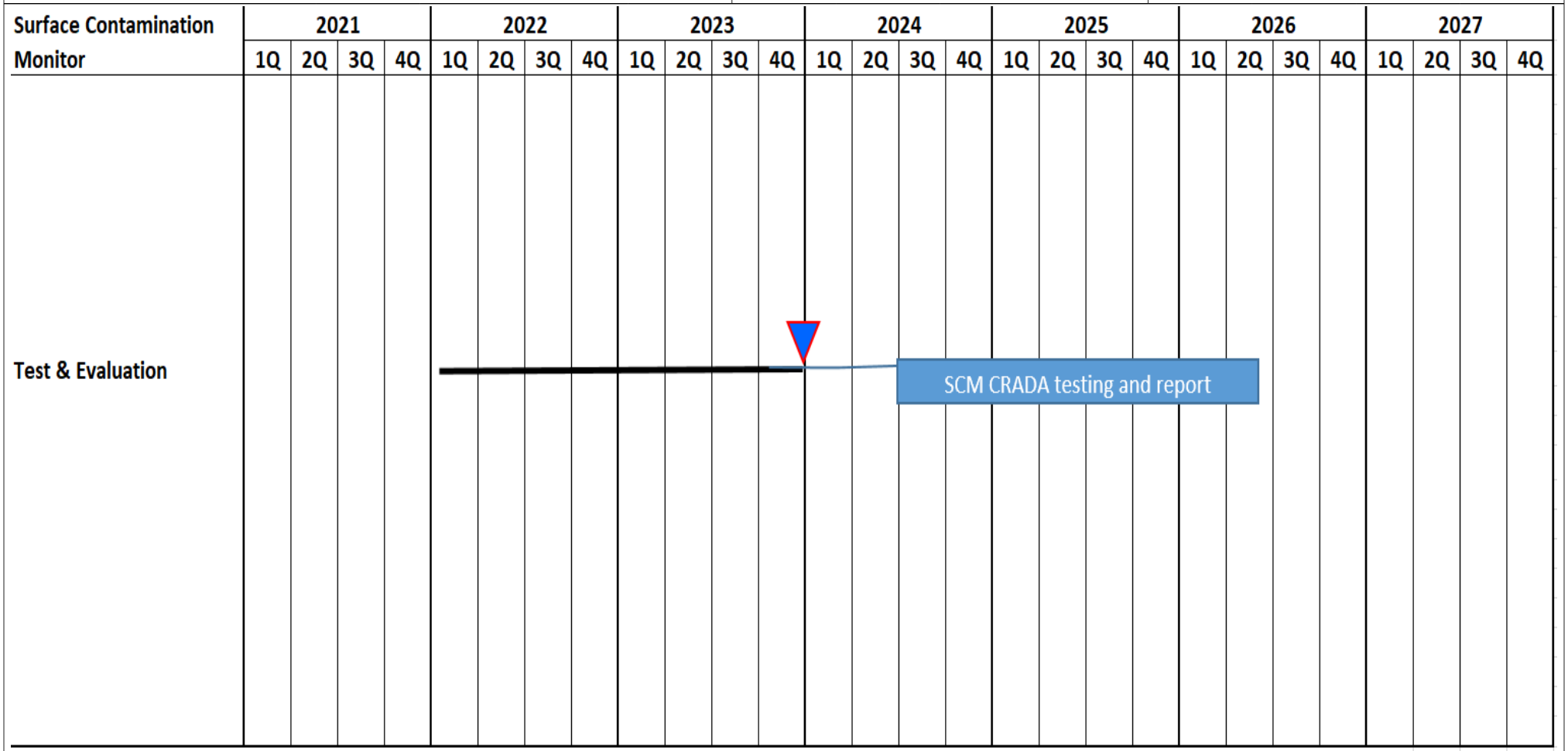

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

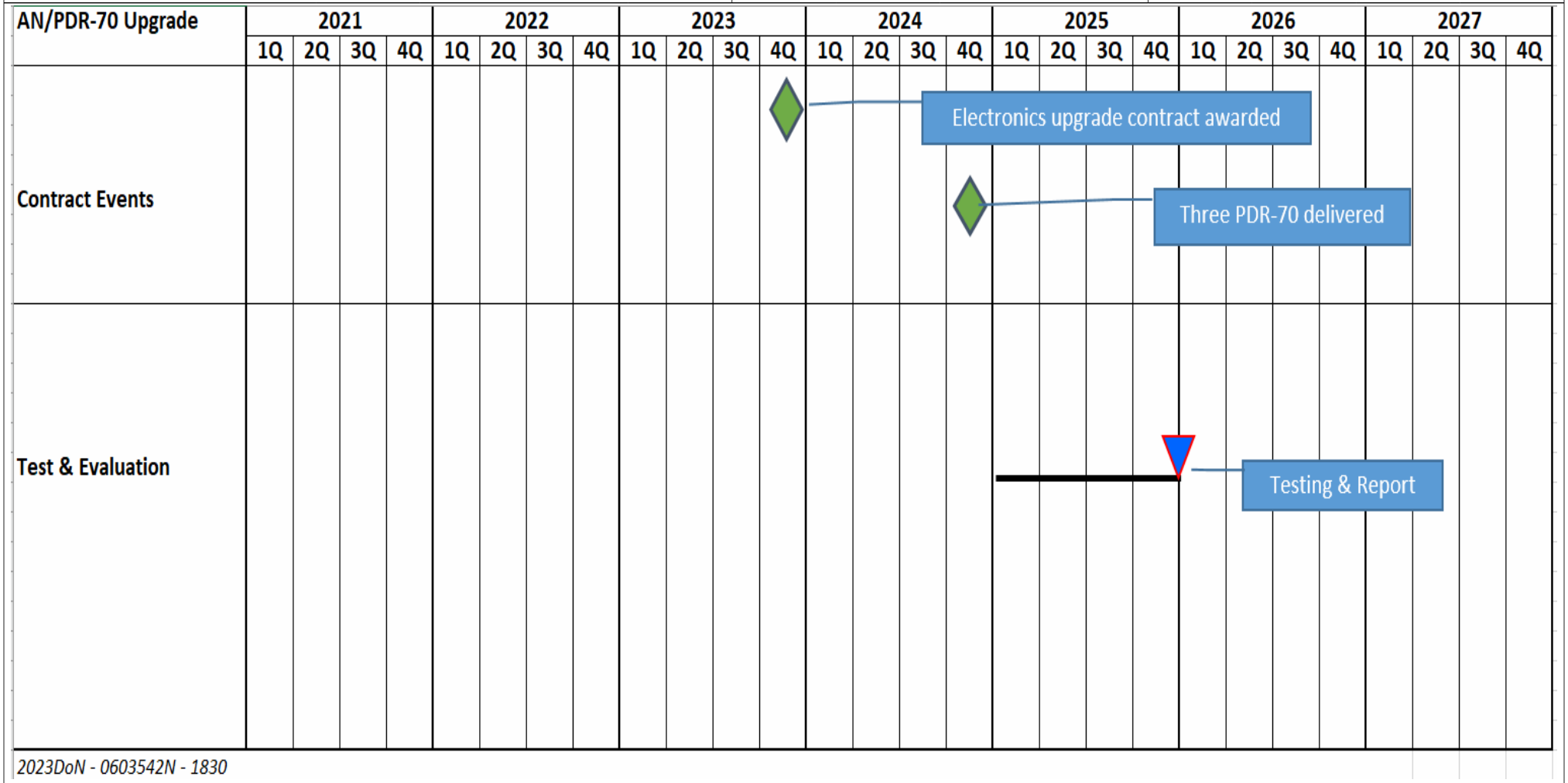

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Primary Dosimetry				
Test & Evaluation: TFS and Landauer Original CRADA Testing & Report	1	2021	4	2022
Test & Evaluation: Mirion CRADA Test & Report	1	2021	4	2023
Test & Evaluation: TFS & Landauer Extension CRADA Testing & Report	1	2023	4	2024
Test & Evaluation: Mirion Extension CRADA Testing & Report	1	2024	4	2025
Cooperative Research and Development Agreements: TFS and Landauer CRADAs Extended for Two Years	4	2022	4	2022
Cooperative Research and Development Agreements: Mirion CRADA Extended for Two Years	4	2023	4	2023
Secondary Dosimetry				
Test & Evaluation: iMUX Testing & Report	1	2021	4	2021
Test & Evaluation: Sample Electronic Dosimeters Testing & Report	4	2021	2	2022
Test & Evaluation: COTS Electronic Dosimeters Testing & Report	3	2022	3	2023
Contract Events: Procure Electronic Dosimeters for Extremity Applications	2	2022	2	2022
Visit, Board, Search & Seizure				
Test & Evaluation: Test & Report on RID Batch 2	1	2021	4	2021
Test & Evaluation: Test & Report on PRD Batch 2	2	2021	1	2022
Test & Evaluation: Test & Report on HRM Batch 2	3	2021	2	2022
Laboratory Test Equipment				
Contract Events: Procure GC60 and X80 Irradiator Computer Upgrades	4	2021	4	2021
Contract Events: Procure GC-60 Cobalt-60 Source	4	2022	4	2022
Contract Events: Procure Safety Inlerlock Upgrade	4	2022	4	2022
Radiological Detection System Training Devicce				

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603542N / *Radiological Control*	**Project (Number/Name)** 1830 / *RADIAC Development*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Contract Events: Kits Contract Award	4	2022	4	2022
Test & Evaluation: Test & Report	1	2024	4	2024
Surface Contamination Monitor				
Test & Evaluation: CRADA Test & Report	1	2022	4	2024
AN/PDR-70 Upgrade				
Contract Events: Electronics Upgrade	3	2023	3	2023
Test & Evaluation: Test & Report	1	2025	4	2025