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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605898N / <i>Management HQ - R&D</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	0.000	40.165	39.673	41.094	-	41.094	41.559	41.619	42.495	43.373	Continuing	Continuing
0223: <i>Sub Combat System Improvement (ADV)</i>	0.000	0.143	0.141	0.129	-	0.129	0.134	0.137	0.140	0.143	Continuing	Continuing
0824: <i>Science & Technology Management</i>	0.000	0.000	0.000	24.439	-	24.439	25.175	25.414	25.948	26.466	Continuing	Continuing
1447: <i>Surf Combatant Combat System Imp</i>	0.000	0.167	0.178	0.111	-	0.111	0.225	0.216	0.192	0.196	Continuing	Continuing
3159: <i>Naval Integrated Fire Control-Counter Air SE&I</i>	0.000	0.166	0.177	0.110	-	0.110	0.224	0.215	0.191	0.195	Continuing	Continuing
3186: <i>Air and Missile Defense Radar</i>	0.000	0.494	0.524	0.534	-	0.534	0.546	0.557	0.568	0.579	Continuing	Continuing
3216: <i>Tactical Support Center-Integration</i>	0.000	0.026	0.025	0.015	-	0.015	0.034	0.032	0.029	0.030	Continuing	Continuing
3345: <i>ONR Management Headquarters</i>	0.000	39.169	38.628	15.756	-	15.756	15.221	15.048	15.427	15.764	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): P384

A. Mission Description and Budget Item Justification

The Management HQ - R&D program funds management headquarter civilian personnel salaries at the Office of Naval Research (ONR). These personnel support the management of the Naval Science and Technology (S&T) programs. This program also funds management headquarter contractor support for the Integrated Warfare Systems (IWS) Program Executive Office.

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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	41.765	39.673	41.064	-	41.064
Current President's Budget	40.165	39.673	41.094	-	41.094
Total Adjustments	-1.600	0.000	0.030	-	0.030
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.324	0.000			
• SBIR/STTR Transfer	-0.276	0.000			
• Program Adjustments	0.000	0.000	0.051	-	0.051
• Rate/Misc Adjustments	0.000	0.000	-0.021	-	-0.021

Change Summary Explanation

Funding: The FY 2021 funding increase is associated with the CIVPERS Pay Raise.

Technical: no significant change

Schedule: no significant change

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / Management HQ - R&D	Project (Number/Name) 0223 / Sub Combat System Improvement (ADV)
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
0223: Sub Combat System Improvement (ADV)	0.000	0.143	0.141	0.129	-	0.129	0.134	0.137	0.140	0.143	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides management headquarters contractor support to the Integrated Warfare Systems (IWS) Program Executive Office (PEO). This work supports Navy Acoustic Superiority and Technology Insertion Initiatives through the application of advanced development and testing of sensors and sensor processing systems supporting tactical control systems improvements. This addresses technology challenges to improve tactical control in littoral and open ocean environments for a variety of operational missions.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Management Headquarters Personnel	0.143	0.141	0.129	0.000	0.129
Articles:	-	-	-	-	-
FY 2020 Plans: - Continue Advanced Processing Build (APB) development, integration, land-based testing, at-sea testing, and establishment of tactical scenarios.					
FY 2021 Base Plans: - Continue APB development, integration, land-based testing, at-sea testing, and establishment of tactical scenarios.					
FY 2021 OCO Plans: N/A					
FY 2020 to FY 2021 Increase/Decrease Statement: FY 2020 to FY 2021 decrease (\$-0.012M) reflects the incorporation of a DON directed contract services reform reduction in FY 2021.					
Accomplishments/Planned Programs Subtotals	0.143	0.141	0.129	0.000	0.129

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

N/A

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / <i>Management HQ - R&D</i>	Project (Number/Name) 0223 / <i>Sub Combat System Improvement (ADV)</i>

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy										Date: February 2020		
Appropriation/Budget Activity 1319 / 6					R-1 Program Element (Number/Name) PE 0605898N / Management HQ - R&D				Project (Number/Name) 0824 / Science & Technology Management			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
0824: Science & Technology Management	0.000	0.000	0.000	24.439	-	24.439	25.175	25.414	25.948	26.466	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

This project was created for a standalone non-labor project which was realigned out of project 3345. This is not a new start.

A. Mission Description and Budget Item Justification

This project funds all basic costs of Office of Naval Research Management Headquarters Activity (MHA) non-labor in support of the entire Navy Science & Technology (S&T) program. Through this support, the S&T enterprise pursues the technological advances that enable the Fleet's ability to operate from a position of technological superiority.

Specifically, funding facilitates the execution of the Navy's basic research, applied research, and advanced technology development programs at the nation's universities/colleges, Navy laboratories, Warfare Centers, and private industry.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Science and Technology Management	0.000	0.000	24.439	0.000	24.439
Articles:	-	-	-	-	-
FY 2020 Plans: N/A					
FY 2021 Base Plans: Provides corporate MHA Non-Labor support in facilitating the purchase of the S&T programs for the Navy to ensure consistent external reporting. All Non-Operational HQ is now Major Headquarters Activity (MHA).					
FY 2021 OCO Plans: N/A					
FY 2020 to FY 2021 Increase/Decrease Statement: The increase to this project reflects the breakout of non-labor costs into a standalone project within this Program Element.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	24.439	0.000	24.439

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy Date: February 2020

Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / <i>Management HQ - R&D</i>	Project (Number/Name) 0824 / <i>Science & Technology Managment</i>
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C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / Management HQ - R&D	Project (Number/Name) 1447 / Surf Combatant Combat System Imp
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
1447: Surf Combatant Combat System Imp	0.000	0.167	0.178	0.111	-	0.111	0.225	0.216	0.192	0.196	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides management headquarters contractor support to the Integrated Warfare System (IWS) Program Executive Office (PEO). This work supports Cruiser and Destroyer AEGIS Combat System (ACS) upgrades and integrates new equipment and systems to pace the threat and capture advances in technology.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Management Headquarter Personnel	0.167	0.178	0.111	0.000	0.111
Articles:	-	-	-	-	-
FY 2020 Plans: -Support Cruiser and Destroyer AEGIS Combat System (ACS) upgrades and integrate new equipment and systems to pace the threat and capture advances in technology.					
FY 2021 Base Plans: Continue to support Cruiser and Destroyer AEGIS Combat System (ACS) upgrades and integrate new equipment and systems to pace the threat and capture advances in technology.					
FY 2021 OCO Plans: N/A					
FY 2020 to FY 2021 Increase/Decrease Statement: FY 2020 to FY 2021 decrease (\$-0.067M) accounts for the availability of prior year execution balances.					
Accomplishments/Planned Programs Subtotals	0.167	0.178	0.111	0.000	0.111

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / Management HQ - R&D	Project (Number/Name) 3159 / Naval Integrated Fire Control-Counter Air SE&I
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3159: Naval Integrated Fire Control-Counter Air SE&I	0.000	0.166	0.177	0.110	-	0.110	0.224	0.215	0.191	0.195	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides management headquarters contractor support to the Integrated Warfare System (IWS) Program Executive Office (PEO). This work supports Naval Integrated Fire Control - Counter Air (NIFC-CA) project. Through this support technological advances are being developed enabling PEO IWS to extend the Naval Theater Air and Missile Defense battlespace out to the maximum kinematic range of our weapons.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Management Headquarter Personnel	0.166	0.177	0.110	0.000	0.110
Articles:	-	-	-	-	-
FY 2020 Plans: Support the Navy's research and development efforts for NIFC-CA's System Engineering, Integration and Test (SEI&T) project. -Provide system engineering to upgrade the White Sands Missile Range (WSMR) Desert Ship complex to an AEGIS Advanced Capability Build (ACB).					
FY 2021 Base Plans: Continue to support the Navy's research and development efforts for NIFC-CA's System Engineering, Integration and Test (SEI&T) project.					
FY 2021 OCO Plans: N/A					
FY 2020 to FY 2021 Increase/Decrease Statement: FY 2020 to FY 2021 decrease (\$-0.067M) accounts for the availability of prior year execution balances.					
Accomplishments/Planned Programs Subtotals	0.166	0.177	0.110	0.000	0.110

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

N/A

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / <i>Management HQ - R&D</i>	Project (Number/Name) 3159 / <i>Naval Integrated Fire Control-Counter Air SE&I</i>

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / Management HQ - R&D	Project (Number/Name) 3186 / Air and Missile Defense Radar
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3186: Air and Missile Defense Radar	0.000	0.494	0.524	0.534	-	0.534	0.546	0.557	0.568	0.579	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: P384

A. Mission Description and Budget Item Justification

This project provides management headquarters contractor support to the Integrated Warfare System (IWS) Program Executive Office (PEO). Through this support, technological advances are being developed, enabling PEO IWS to deliver "Enterprise" solutions for Naval Warfare Systems that operate seamlessly and effectively within the Fleet and Joint Forces.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Management Headquarter Personnel	0.494	0.524	0.534	0.000	0.534
Articles:	-	-	-	-	-
FY 2020 Plans: - Continue risk reduction testing at ARDEL, including refinement of radar operation functions (calibration, fault detection/fault isolation, environmental adaptation), improving electronic protection capabilities, and continue data collection on ballistic missile defense targets of opportunity.					
FY 2021 Base Plans: Continue risk reduction testing at ARDEL, including refinement of radar operation functions (calibration, fault detection/fault isolation, environmental adaptation), improving electronic protection capabilities, and continue data collection on ballistic missile defense targets of opportunity.					
FY 2021 OCO Plans: N/A					
FY 2020 to FY 2021 Increase/Decrease Statement: There is no significant change from FY20 to FY21.					
Accomplishments/Planned Programs Subtotals	0.494	0.524	0.534	0.000	0.534

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Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / Management HQ - R&D	Project (Number/Name) 3186 / Air and Missile Defense Radar
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDT&E/0604522N: <i>Air and Missile Defense Radar (AMDR) System</i>	26.079	55.349	78.141	-	78.141	87.931	80.404	79.835	81.433	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy										Date: February 2020		
Appropriation/Budget Activity 1319 / 6					R-1 Program Element (Number/Name) PE 0605898N / Management HQ - R&D				Project (Number/Name) 3216 / Tactical Support Center-Integration			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3216: Tactical Support Center-Integration	0.000	0.026	0.025	0.015	-	0.015	0.034	0.032	0.029	0.030	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides management headquarters contractor support to the Integrated Warfare System (IWS) Program Executive Office (PEO). This supports AN/SQQ-34 Aircraft Carrier Tactical Support Center (CV-TSC) fulfillment of Anti-Submarine Warfare (ASW) and Surface Warfare (SUW) coordination functions utilizing data received from multiple sources to assess the threat and assist the Tactical Action Officer (TAO) and Composite Warfare Commander (CWC) in effectively applying available resources to support CVN self-defense. This supports CV-TSC functionality updates being implemented through an evolutionary acquisition approach, providing phased incremental builds that are developed, tested, certified and fielded.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Management Headquarter Personnel	0.026	0.025	0.015	0.000	0.015
Articles:	-	-	-	-	-
FY 2020 Plans: - Continue CV-TSC Development/Integration including development of software builds and systems engineering efforts, conduct of incremental requirements, design, and test reviews.					
FY 2021 Base Plans: - Continue CV-TSC Development/Integration including development of software builds and systems engineering efforts, conduct of incremental requirements, design, and test reviews.					
FY 2021 OCO Plans: N/A					
FY 2020 to FY 2021 Increase/Decrease Statement: FY 2020 to FY 2021 decrease (\$-0.010M) accounts for the availability of prior year execution balances.					
Accomplishments/Planned Programs Subtotals	0.026	0.025	0.015	0.000	0.015

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

N/A

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / <i>Management HQ - R&D</i>	Project (Number/Name) 3216 / <i>Tactical Support Center-Integration</i>
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D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / Management HQ - R&D	Project (Number/Name) 3345 / ONR Management Headquarters
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3345: ONR Management Headquarters	0.000	39.169	38.628	15.756	-	15.756	15.221	15.048	15.427	15.764	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds all basic costs of Office of Naval Research Management Headquarters Activity (MHA) salaries and non-labor in support of the entire Navy Science & Technology (S&T) program. Through this support, the S&T enterprise pursues the technological advances that enable the Fleet's ability to operate from a position of technological superiority.

Specifically, funding facilitates the execution of the Navy's basic research, applied research, and advanced technology development programs at the nation's universities/colleges, Navy laboratories, Warfare Centers, and private industry.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Management Headquarters Personnel	39.169	38.628	15.756	0.000	15.756
Articles:	40	39	-	-	-
Description: N/A					
FY 2020 Plans: Provides corporate MHA personnel salaries and Non-Labor support in facilitating the purchase of the S&T programs for the Navy to ensure consistent external reporting. All Non-Operational HQ is now Major Headquarters Activity (MHA). Continue to reduce auditability challenges to meet the mandate.					
FY 2021 Base Plans: Provides corporate MHA personnel salaries and Non-Labor support in facilitating the purchase of the S&T programs for the Navy to ensure consistent external reporting. All Non-Operational HQ is now Major Headquarters Activity (MHA). Continue to reduce auditability challenges to meet the mandate.					
FY 2021 OCO Plans:					

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Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605898N / <i>Management HQ - R&D</i>	Project (Number/Name) 3345 / <i>ONR Management Headquarters</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A					
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> The decrease to this project reflects the breakout of non-labor costs into a standalone project (0824) within this Program Element					
Accomplishments/Planned Programs Subtotals	39.169	38.628	15.756	0.000	15.756

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

N/A

Remarks

D. Acquisition Strategy

N/A