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

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development</i>					R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>							
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	239.171	68.393	42.702	62.006	-	62.006	-	-	-	-	-	-
2263: <i>Information Warfare System</i>	202.493	29.402	31.018	37.366	-	37.366	-	-	-	-	-	-
2958: <i>Cyberspace Activities</i>	0.000	27.884	0.000	0.000	-	0.000	-	-	-	-	-	-
3426: <i>Maritime Cyber</i>	36.678	11.107	11.684	24.640	-	24.640	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Information Warfare Systems(2263) - This budget item funds: research and development (R&D) activities; vulnerability analysis and reverse engineering of emerging threats and targets; specialized technical, engineering and management capabilities; program office and program management support contracts, engineering support, modeling and simulation, administrative and security personnel; a classified administrative network that provides the capability to track and manage the Command's projects, contracts, and financials with appropriate security mechanisms to protect the information and data; focused Radio Frequency (RF) collection missions to expose potential vulnerabilities and identify new signals of interest for future countermeasure development; operation, sustainment and support of Development Network environment(s) and test environment enabling requirements; identification, development and testing of electronic attack countermeasures; Configuration Management Authority which reviews, validates, publishes, and maintains the standard for signal-specific software for tactical RF collectors; support facilities and apparatus at various locations; logistics support costs associated with R&D activities. (Additional details held at a higher classification).

Maritime Cyber(3426) - This budget item funds: research and development activities; intelligence analysis and linguistic support; reverse engineering and vulnerability assessment; Radio Frequency (RF) testing; program office support; Agile development operations expertise and training. (Additional details held at a higher classification).

B. Program Change Summary (\$ in Millions)

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	71.143	56.791	80.333	-	80.333
Current President's Budget	68.393	42.702	62.006	-	62.006
Total Adjustments	-2.750	-14.089	-18.327	-	-18.327
• Congressional General Reductions	-	-0.284			
• Congressional Directed Reductions	-	-13.805			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.750	0.000			
• Rate/Misc Adjustments	0.000	0.000	-18.327	-	-18.327

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Change Summary Explanation FY22 increase of \$6.348M in Information Warfare Systems (2263) provides development of an additional OCONUS site; initiates overhaul/tech refresh of existing OCONUS sites to improve ability to identify evolving threat capabilities; supports development, integration, and deployment of machine learning capabilities into next-generation Tactical Research Target Development (TRTD) afloat and terrestrial systems. Delivers prototype 5G capabilities and expands countermeasure development efforts for priority threat emitters (details at higher classification). FY22 increase of \$12.956M Maritime Cyber (3426) supports expansion of maritime cyber capabilities, development and testing of operational prototypes based on vulnerability research conducted in FY21, and increased support for Navy cyber organizations through maturation of tactics, techniques, and procedures for capability employment (Additional details held at a higher classification). The FY22 funding request was reduced by \$6.433 million to account for the availability of prior year execution balances.		

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy										Date: May 2021		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>				Project (Number/Name) 2263 / <i>Information Warfare System</i>			
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
2263: <i>Information Warfare System</i>	202.493	29.402	31.018	37.366	-	37.366	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Information Warfare (IW) develops a deep understanding of potential adversaries and systems, identifies vulnerabilities, and conducts research and development efforts that lead to delivery of effects in support of Fleet Operations Plans. It uses iterative, flexible, and adaptive processes that leverage intelligence, operations, and acquisition authorities for projects and deliverables. IW delivers capabilities at all classification levels that deny, degrade, deceive, disrupt, or destroy the ability to find and target systems and platforms. These deliverables contribute to tactical, operational, and strategic options available to Fleet and Combatant Commanders.

Funds provided for vulnerability analysis and reverse engineering of emerging threats and targets; program office and program management support; engineering support, modeling and simulation; administrative and security personnel; specialized technical, engineering and management capabilities. Funds support focused cyber (Internet Protocol(IP)) and radio frequency (RF) search and survey missions to identify new signals, potential system vulnerabilities, and opportunities for future capability development. Funds also support operation, sustainment, and support of development network environment(s) and test environments; identification, development and testing of electronic attack countermeasures; classified administrative network, which provides the capability to track and manage projects, contracts, and financials with security mechanisms to protect the information and data; and all support facilities and apparatus at various locations, including Logistics support costs.

(Additional details held at a higher classification)

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Electronic Warfare / Information and Computer Network Operations (IO & CNO) and Countermeasure Capability Research & Development	29.402	31.018	37.366	0.000	37.366
Articles:	-	-	-	-	-
FY 2021 Plans:					
*Continued Investments in intelligence discovery from terrestrial locations and afloat systems to identify adversary vulnerabilities and build Information Warfare (IW) capabilities					
* Continued research mission, equipment upgrades, and maintenance on OCONUS Equipment					
* Continued afloat and terrestrial search and survey missions to identify of new signals and characterize potential adversary					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 2263 / <i>Information Warfare System</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>systems</p> <ul style="list-style-type: none"> * Maintained the database with all signal descriptor files for targets * Developed, tested, and fielded tactical electronic attack capabilities for individual platforms based on Fleet requirements and priorities * Advanced reverse engineering and vulnerability analysis using joint project expertise. - Develop Radio Frequency Machine Learning Systems (RFMLS) prototypes for later integration into Command and Fleet systems * Developed systems and capabilities to create machine learning algorithms used for RF and cyber search and survey operations, to include follow-on analysis and reporting * Began integration of new acquisitions into Technical Research and Target Development (TRTD) collection suites and eventual deployment on multiple platforms, cross service platforms and terrestrial sites. * Expanded development work to prototype testing and evaluation. * Conducted advanced 5G specification analysis on Release 16; continue protocol stack development, techniques, and platform development. * Continued development of intelligent fuzzing techniques to support automated vulnerability analysis of two-way mobile communications protocols with full hardware implementation. * Developed advanced propagation models for frequencies below High Frequency (HF) * Worked on a prototype data-mining tool to aid in the discovery and prioritization of hardware and software vulnerabilities. * Provided prototype code, integration, and (Additional details held at a higher classification) <p>FY 2022 Base Plans:</p> <ul style="list-style-type: none"> * Investments in intelligence discovery from terrestrial locations and afloat systems, with the intent of identifying adversary vulnerabilities and building Information Warfare (IW) capabilities. * One additional OCONUS site development to enable and support specific capability development. * OCONUS equipment upgrades; mission and maintenance activities continue. * Development of additional aperture at CONUS site to support directed countermeasure development. 					

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Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 2263 / <i>Information Warfare System</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>* Overhaul/tech refresh of OCONUS site to improve ability to identify evolving threat capabilities and develop countermeasures.</p> <p>* Conduct target development afloat missions after identification of new signals.</p> <p>* Maintain the database with all signal descriptor files for targets</p> <p>* Develop, test, and field tactical electronic attack capabilities for individual platforms based on Fleet requirements and priorities.</p> <p>* Advancements in reverse engineering and vulnerability analysis using joint project expertise.</p> <p>* Integrate Radio Frequency Machine Learning Systems (RFMLS) into next-generation Technical Research and Target Development (TRTD) collections suites</p> <p>* Sustain systems and capabilities to create and support machine learning algorithms used for RF and cyber search and survey operations, to include follow-on analysis and reporting.</p> <p>* Field and operate next-generation Technical Research and Target Development (TRTD) collection suites, which will be simultaneously deployed on multiple platforms, cross service platforms, and terrestrial sites.</p> <p>* Deliver prototype systems to support 5G countermeasures.</p> <p>* Expand development work to prototype testing and evaluation.</p> <p>* Develop advanced propagation models for frequencies below High Frequency (HF)</p> <p>* Complete development work and prototype testing and evaluation.</p> <p>* Work on a prototype data-mining tool to aid in the discovery and prioritization of hardware and software vulnerabilities.</p> <p>* Provide prototype code, integration, and documentation.</p> <p>(Additional details held at a higher classification)</p> <p>FY 2022 OCO Plans: N/A</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: FY22 increase of \$6.348M provides development of an additional OCONUS site; initiates overhaul/tech refresh of existing OCONUS sites to improve ability to identify evolving threat capabilities; supports development, integration, and deployment of machine learning capabilities into next-generation TRTD afloat and terrestrial</p>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
systems. Delivers prototype 5G capabilities. Expands countermeasure development efforts for priority threat emitters (details at higher classification)					
Accomplishments/Planned Programs Subtotals	29.402	31.018	37.366	0.000	37.366

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

N/A

Remarks

D. Acquisition Strategy

Projects under this program are designated non-Acquisition Category (ACAT).

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 2263 / <i>Information Warfare System</i>
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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			
Development(1)	Various	Classified : Classified	56.891	4.847	Dec 2019	3.650	Dec 2020	3.310	Dec 2021	-		3.310	-	-	-
Engineering & Development	MIPR	JHU APL : Various	15.828	0.300	Dec 2019	0.651	Dec 2020	0.725	Dec 2021	-		0.725	-	-	-
Development	WR	NRL : Washington, DC	25.973	4.348	Dec 2019	3.200	Dec 2020	3.870	Dec 2021	-		3.870	-	-	-
Support Development	C/FFP	CWG-6 : Ft. Meade	1.167	0.956	Dec 2019	0.650	Dec 2020	0.850	Dec 2021	-		0.850	-	-	-
System Engineering	C/CPFF	SAIC : Wash D.C.	0.500	0.792	Jan 2020	0.897	Nov 2020	0.965	Feb 2022	-		0.965	-	-	-
General Development(1)	Various	Classified : Classified	1.800	0.000		1.600	Oct 2020	1.300	Feb 2022	-		1.300	-	-	-
Technical Data	C/FFP	Various : Various	2.185	0.845	Feb 2020	1.150	Oct 2020	1.145	Feb 2022	-		1.145	-	-	-
Software Development	WR	NRL : Washington, DC	0.650	1.250	Feb 2020	1.300	Oct 2020	1.125	Feb 2022	-		1.125	-	-	-
Hardware/Equipment	Various	DLA, NSA, NAVAIR, GSA : Various	9.739	1.812	Jan 2020	1.850	Dec 2020	4.400	Dec 2021	-		4.400	-	-	-
System Engineering	WR	NRL : Washington, DC	21.553	0.650	Jan 2020	0.700	Oct 2020	0.825	Feb 2022	-		0.825	-	-	-
Engineering(1)	Various	Classified : Classified	13.373	2.500	Jan 2020	2.667	Nov 2020	2.200	Nov 2021	-		2.200	-	-	-
Software Development(1)	Various	Classified : Classified	4.277	0.627	Feb 2020	0.891	Nov 2020	1.125	Nov 2021	-		1.125	-	-	-
Program	C/CPFF	OakleaSimpon : Ft. Meade	0.760	0.523	Feb 2020	0.540	Nov 2020	0.560	Nov 2021	-		0.560	-	-	-
Development	MIPR	DOE/INL : Various	0.000	1.183	Jan 2020	1.410	Nov 2020	1.500	Nov 2021	-		1.500	-	-	-
Subtotal			154.696	20.633		21.156		23.900		-		23.900	-	-	N/A

Remarks
1-Due to classification category, will not be on GENSER classified exhibits.

Support (\$ 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			
Software	WR	NRL : Wash DC	1.238	0.300	Nov 2019	0.000		0.650	Nov 2021	-		0.650	-	-	-

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

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Support (\$ 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			
Software	WR	NAVWAR : San Diego CA	2.121	0.000		0.000		0.000		-		0.000	-	-	-
Studies/Analysis	WR	NPS : Monterey CA	0.853	0.340	Nov 2019	0.500	Nov 2020	0.500	Nov 2021	-		0.500	-	-	-
Program Support - ASEP	MIPR	Army : Ft. Detrick MD	6.207	2.351	Oct 2019	2.200	Oct 2020	1.800	Feb 2022	-		1.800	-	-	-
Software Support	MIPR	JHU APL : Various	0.733	0.300	Dec 2019	0.000		0.000		-		0.000	-	-	-
Software Support	WR	NIWC : Various	0.600	0.435	Nov 2019	0.000		0.000		-		0.000	-	-	-
Software Support	C/CPFF	CMU SEI : Pittsburgh PA	2.700	0.000		0.000		0.000		-		0.000	-	-	-
General Engineering Support	C/CPFF	PSU ARL : Pittsburgh PA	0.000	0.350	Nov 2019	1.000	Nov 2020	1.350	Nov 2021	-		1.350	-	-	-
General Engineering Support(1)	C/CPFF	Classified : Classified	0.400	0.524	Nov 2019	0.537	Nov 2020	0.542	Nov 2021	-		0.542	-	-	-
Test & Evaluation	C/CPFF	PSU ARL : Pittsburgh PA	0.000	0.000		0.650	Jan 2021	1.200	Jan 2022	-		1.200	-	-	-
Studies/Analysis	C/FFP	Various : Various	0.500	0.750	Jan 2020	0.000		1.141	Nov 2021	-		1.141	-	-	-
Development Support	C/CPFF	SNS One : Maryland	1.430	0.000		0.000		0.000		-		0.000	-	-	-
Development Support	C/CPFF	MITRE : McLean, VA	0.200	0.550	Dec 2019	0.400	Dec 2020	0.500	Dec 2021	-		0.500	-	-	-
Logistics	Various	NAVFAC : MIDLANT VA	0.593	0.111	Oct 2019	0.120	Oct 2020	0.350	Feb 2022	-		0.350	-	-	-
DEV NET Support(1)	C/CPFF	Classified : Classified	0.000	0.000		0.179	Nov 2020	0.833	Nov 2021	-		0.833	-	-	-
Subtotal			17.575	6.011		5.586		8.866		-		8.866	-	-	N/A

Remarks
1-Due to classification category, will not be on GENSER classified exhibits.

Test and Evaluation (\$ 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			
Mod & Sim(1)	Various	Classified : Classified	8.524	0.850	Jan 2020	0.630	Jan 2021	1.000	Jan 2022	-		1.000	-	-	-

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 2263 / <i>Information Warfare System</i>
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Test and Evaluation (\$ 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			
Operational Test & Evaluation	Various	Various : Various	1.834	0.000		0.000		0.500	Nov 2021	-		0.500	-	-	-
Subtotal			10.358	0.850		0.630		1.500		-		1.500	-	-	N/A

Remarks
1-Due to classification category, will not be on GENSER classified exhibits.

Management Services (\$ 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			
Program Management Services	Various	Classified : Classified	19.864	1.908	Oct 2019	3.646	Oct 2020	3.100	Nov 2021	-		3.100	-	-	-
Subtotal			19.864	1.908		3.646		3.100		-		3.100	-	-	N/A

Remarks
1-Due to classification category, will not be on GENSER classified exhibits.

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	202.493	29.402	31.018	37.366	-	37.366	-	-	N/A

Remarks

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 2263 / <i>Information Warfare System</i>
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Proj 2263	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Information Warfare System Activities																												
Quarterly Program Review	Quarterly QPR																											
Aperture Acquisition	OCONUS																											
	CONUS																											
Aperture Refresh/Overhaul	Aperture Upgrade/Refresh																											
ESE Activites																												
NPS Activities																												
DevOps Support																												
Program Management																												
Modeling and Simulation																												
Development Work	ATO Sustainment/Continous Monitoring																											
	System Engineering																											
	Special Development																											
	Special Development																											
Hardware Upgrades	5G Development																											
Logistic support																												
ASEP																												
Studys																												
Test & Evaluation																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 2263 / <i>Information Warfare System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2263				
Information Warfare System Activities: Quarterly Program Review: QPR	1	2020	4	2022
Information Warfare System Activities: Aperture Acquisition: Additional OCONUS Asset	1	2022	4	2022
Information Warfare System Activities: Aperture Acquisition: CONUS Asset	1	2021	4	2022
Information Warfare System Activities: Aperture Refresh/Overhaul: Aperture Upgrades	1	2020	4	2022
Information Warfare System Activities: ESE Activites: ESE Activites	1	2020	4	2022
Information Warfare System Activities: NPS Activities: NPS WR obligation	1	2020	4	2022
Information Warfare System Activities: DevOps Support: DevOps Support	1	2020	4	2022
Information Warfare System Activities: Program Management: Program Management Support	1	2020	4	2022
Information Warfare System Activities: Modeling and Simulation: Modelling and Simulation	1	2020	4	2022
Information Warfare System Activities: Development Work: ATO Sustainment/ Continous Monitoring	1	2020	4	2022
Information Warfare System Activities: Development Work: System Engineering	1	2020	4	2022
Information Warfare System Activities: Development Work: Special Development	1	2020	4	2022
Information Warfare System Activities: Development Work: Software Development and Support	1	2020	4	2022
Information Warfare System Activities: Development Work: 5G Development	1	2021	4	2022
Information Warfare System Activities: Hardware Upgrades: Hardware Upgrades	1	2020	4	2022
Information Warfare System Activities: Logistic support: Logistic Support	1	2020	4	2022
Information Warfare System Activities: ASEP: ASEP	1	2020	4	2022
Information Warfare System Activities: Studys: Studies and analysis	1	2020	4	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Information Warfare System Activities: Test & Evaluation: Tests and Evaluations	1	2020	4	2022

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Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>				Project (Number/Name) 2958 / <i>Cyberspace Activities</i>			
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
2958: <i>Cyberspace Activities</i>	0.000	27.884	0.000	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Cyberspace Activities (2958) - Starting in FY21, funds for project code 2958 PE 0204575N realigned to PE 0305251N, a Cyberspace Operations Forces and Force Support Program Element.

A. Mission Description and Budget Item Justification

Cyberspace Activities (2958) - Starting in FY21, funds for project code 2958 PE 0204575N realigned to PE 0305251N, a Cyberspace Operations Forces and Force Support Program Element.

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Cyberspace Activities	27.884	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2021 Plans: Details realigned to Project 2958 PE 0305251N					
FY 2022 Base Plans: Details realigned to Project 2958 PE 0305251N					
FY 2022 OCO Plans: N/A					
FY 2021 to FY 2022 Increase/Decrease Statement: Details realigned to Project 2958 PE 0305251N					
Accomplishments/Planned Programs Subtotals	27.884	0.000	0.000	0.000	0.000

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

N/A

Remarks

D. Acquisition Strategy

This project is designated non-ACAT.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 2958 / <i>Cyberspace Activities</i>
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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			
Development	C/FFP	CWG-6 : Maryland	0.000	0.295	Oct 2019	0.000		0.000		-		0.000	-	-	-
General Engineering	C/CPFF	PSU ARL : Pennsylvania	0.000	0.218	Oct 2019	0.000		0.000		-		0.000	-	-	-
Hardware & Software Engineering(1)	C/CPFF	Classified : Classified	0.000	1.275	Oct 2019	0.000		0.000		-		0.000	-	-	-
Development(1)	Various	Classified : Classified	0.000	7.228	Oct 2019	0.000		0.000		-		0.000	-	-	-
System Engineering	WR	NRL : Washington DC	0.000	0.240	Oct 2019	0.000		0.000		-		0.000	-	-	-
Development	C/CPFF	USCC : Washington DC	0.000	6.607	Oct 2019	0.000		0.000		-		0.000	-	-	-
Development & Software	MIPR	USAF : Classified	0.000	11.721	Oct 2019	0.000		0.000		-		0.000	-	-	-
Subtotal			0.000	27.584		0.000		0.000		-		0.000	-	-	N/A

Remarks
1-Due to classification category, will not be on GENSER classified exhibits.

Management Services (\$ 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			
Program Management Services(1)	Various	Classified : Classified	0.000	0.300	Oct 2019	0.000		0.000		-		0.000	-	-	-
Subtotal			0.000	0.300		0.000		0.000		-		0.000	-	-	N/A

Remarks
1-Due to classification category, will not be on GENSER classified exhibits.

Project Cost Totals	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
	0.000	27.884	0.000	0.000	-	0.000	-	-	N/A

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 2958 / <i>Cyberspace Activities</i>
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Proj 2958	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Remote DEVOPS					_____																											
Cyberspace Additions Activities																																
Tech Refresh																																
Hardware																																
Software Support																																
Software Engineering																																
DEVOPS Networks Support																																
Engineering																																
Cyber Foundry Development & Enhancements					_____																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 2958 / <i>Cyberspace Activities</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2958				
Remote DEVOPS: Remote DEVOPS	1	2020	4	2020
Cyberspace Additions Activities: Engineering: Hardware	1	2020	4	2020
Cyberspace Additions Activities: Engineering: Software Support	1	2020	4	2020
Cyberspace Additions Activities: Engineering: Software Engineering	1	2020	4	2020
Cyberspace Additions Activities: Engineering: DEVOPS Networks Support	1	2020	4	2020
Cyberspace Additions Activities: Engineering: Engineering	1	2020	4	2020
Cyberspace Additions Activities: Engineering: Modeling & simulation	1	2020	4	2020
Cyberspace Additions Activities: Cyber Foundry Development & Enhancements: Cyber Foundry Development & Enhancements	1	2020	4	2020

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 3426 / <i>Maritime Cyber</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
3426: <i>Maritime Cyber</i>	36.678	11.107	11.684	24.640	-	24.640	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Maritime Cyber(3426) funds: research and development activities; intelligence analysis and linguistic support; reverse engineering and vulnerability assessment; radio frequency (RF) testing; program office support; Agile development operations expertise and training. For effective and efficient Information Warfare (IW) software development and constant professional development, software developers require a dynamic and agile workspace and equipment that keeps pace with emerging technology. Development and testing networks at all classifications are required. Driven by intelligence analysis, vulnerability identification and reverse engineering in a laboratory environment that makes use of virtual, emulated and live systems is the necessary first step to developing any capability. Agile development processes deliver usable capabilities after short "Sprint" cycles. Capabilities are tested in controlled environments ranging from a lab to Fleet exercises and demonstrations. (Additional details held at a higher classification).

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Maritime Cyber	11.107	11.684	24.640	0.000	24.640
Articles:	-	-	-	-	-
FY 2021 Plans:					
*Developed maritime cyber capabilities against known vulnerabilities; combine multiple integrated Demonstrations (i-Demo) to evaluate tools and proposed employment.					
*Conducted vulnerability analysis into new systems.					
*Generated full-spectrum cyber capabilities that comport with NSPM-13/21 and related operational orders; pursued accreditation of these capabilities via appropriate mechanisms to include testing, evaluation, and release to Navy and Joint operational partners.					
*Established processes, developed the needed skillset, and identified additional requirements to conduct cyber surveillance and reconnaissance.					
*Developed and deployed initial cyber capabilities for employment by tactical cyber teams; develop techniques, tactics, and procedures for their subsequent employment by these teams.					
*Conducted demonstrations of prototype maritime cyber capabilities. When requested, conducted these demonstrations in concert with real-world operations or Fleet exercise events.					
*Conducted intelligence support, research, analysis, software capability development and reverse engineering.					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 3426 / <i>Maritime Cyber</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
(Additional details held at a higher classification).					
<p><i>FY 2022 Base Plans:</i></p> <p>*Mature maritime cyber tools which build upon capabilities successfully developed in FY2021; modify, and adapt these capabilities in order to maintain and improve operational posture of Navy cyber forces. *Expand development of cyber capabilities based on vulnerability research conducted in previous FY.</p> <p>*Expand maritime-focused cyber surveillance and reconnaissance with workforce training and contract labor.</p> <p>*Improve tactical cyber capabilities and expand the capability base;</p> <p>*Continue to develop and mature techniques, tactics, and procedures to improve cyber lethality.</p> <p>*Increase complexity of demonstrations of prototype maritime cyber capabilities; conduct live cyber fire events in coordination with Fleet operations and validate capability employment.</p> <p>*Conduct intelligence support, research, analysis, software capability development and reverse engineering.</p> <p>(Additional details held at a higher classification).</p> <p><i>FY 2022 OCO Plans:</i></p> <p>N/A</p> <p><i>FY 2021 to FY 2022 Increase/Decrease Statement:</i></p> <p>FY 2022 increase of \$12.956M in project 3426 supports expansion of maritime cyber capabilities, development and testing of operational prototypes based on vulnerability research conducted in FY21, and increased support for Navy cyber organizations through maturation of tactics, techniques, and procedures for capability employment (Additional details held at a higher classification). The increase will also be utilized to conduct development and testing efforts that were delayed based on \$8.467M reductions in FY21.</p>					
Accomplishments/Planned Programs Subtotals	11.107	11.684	24.640	0.000	24.640

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

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Su</i> <i>pt</i>	Project (Number/Name) 3426 / <i>Maritime Cyber</i>

D. Acquisition Strategy

Projects are designated non-Acquisition Category (ACAT). Defense Acquisition Program Models described in Department of Defense Instruction (DoDI) 5000.2 and guidance are the starting basis used with tailored approaches for the unique character of the product being acquired or the need for accelerated acquisition to streamline acquisition processes as appropriate.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 3426 / <i>Maritime Cyber</i>
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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			
Primary Hardware Development(1)	Various	Classified : Classified	8.400	0.000		0.000		3.872	Nov 2021	-		3.872	-	-	-
System Engineering	Various	APL, NRL, INL : Various	4.923	0.000		0.000		0.000		-		0.000	-	-	-
Software Development	C/CPFF	AF/iCR : Washington DC	2.815	1.697	Mar 2020	3.209	Nov 2020	5.599	Nov 2021	-		5.599	-	-	-
Software Development(1)	Various	Classified : Classified	0.225	0.000		0.000		0.000		-		0.000	-	-	-
Software Development	C/CPFF	DGL : Virginia	0.575	0.000		0.000		0.000		-		0.000	-	-	-
Software Development	Various	Various : Various	0.353	0.000		1.328	Nov 2020	5.212	Nov 2021	-		5.212	-	-	-
Development	MIPR	NSA : Maryland	9.995	6.231	Jan 2020	0.967	Nov 2020	1.200	Nov 2021	-		1.200	-	-	-
Development	MIPR	AF/MITR : Classified	0.288	0.200	Jan 2020	0.525	Nov 2020	0.352	Nov 2021	-		0.352	-	-	-
Development	MIPR	DOE/LANL : Washington DC	0.410	1.800	Jan 2020	0.525	Nov 2020	0.905	Nov 2021	-		0.905	-	-	-
Development	C/BA	GSA/JCETII : Washington DC	0.000	0.000		0.300	Oct 2021	0.450	Jan 2022	-		0.450	-	-	-
Subtotal			27.984	9.928		6.854		17.590		-		17.590	-	-	N/A

Remarks

1-Due to classification category, will not be on GENSER classified exhibits.

Support (\$ 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			
Studies & Analysis	WR	NPS : Monterey CA	4.671	0.199	Jan 2020	0.600	Jan 2021	0.800	Jan 2022	-		0.800	-	-	-
Development Support	WR	NAVSEA : Maryland	0.175	0.130	Jan 2020	0.130	Jan 2021	0.150	Nov 2021	-		0.150	-	-	-
Development Support	C/CPFF	INL : Idaho	2.251	0.000	Jan 2020	2.200	Jan 2021	4.000	Nov 2021	-		4.000	-	-	-
Development Support	C/CPFF	JHU APL : Various	1.597	0.000	Jan 2020	0.000	Jan 2021	0.000		-		0.000	-	-	-
Subtotal			8.694	0.329		2.930		4.950		-		4.950	-	-	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy												Date: May 2021			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>				Project (Number/Name) 3426 / <i>Maritime Cyber</i>					
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
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
Need Item Text	C/BA	Not Specified : Not Specified	0.000	0.000		0.000		0.000		-		0.000	-	-	-
Subtotal			0.000	0.000		0.000		0.000		-		0.000	-	-	N/A
Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
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
Program Management Support	C/CPFF	Classified : Classified	0.000	0.850	Oct 2019	1.900	Oct 2020	2.100	Jan 2022	-		2.100	-	-	-
Subtotal			0.000	0.850		1.900		2.100		-		2.100	-	-	N/A
Project Cost Totals			Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			36.678	11.107		11.684		24.640		-		24.640	-	-	N/A
Remarks															

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 3426 / <i>Maritime Cyber</i>
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Proj 3426	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Product Development: Primary Hardware Phase 1																																
Product Development: Primary Hardware Phase 2																																
Product Development: Systems Engineering																																
Studies & Analysis: Reports																																
Program Support																																
Software Development and Support																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / <i>Elect Warfare Readiness Supt</i>	Project (Number/Name) 3426 / <i>Maritime Cyber</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3426				
Product Development: Primary Hardware Phase 1: Product Development: Primary Hardware Phase 1	1	2020	4	2021
Product Development: Primary Hardware Phase 2: Product Development: Primary Hardware Phase 2	1	2022	4	2022
Product Development: Systems Engineering: Product Development: Systems Engineering	1	2020	4	2022
Studies & Analysis: Reports: Studies & Analysis Reports	1	2020	4	2022
Program Support: Support	1	2020	4	2022
Software Development and Support: Software Development	1	2020	4	2022