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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Office of the Secretary Of Defense **Date:** March 2023

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603288D8Z / <i>Science and Technology (S&T) Analytic Assessments</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	106.387	23.067	29.227	24.328	-	24.328	24.840	25.378	25.908	26.473	-	-
328: <i>Science and Technology Analytic Assessments</i>	100.224	17.259	22.000	17.335	-	17.335	17.655	18.047	18.425	18.814	-	-
177: <i>Technology Watch/Horizon Scanning</i>	6.163	5.808	7.227	6.993	-	6.993	7.185	7.331	7.483	7.659	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Defend the Homeland, Deter Aggression, Prevail in Conflict, and Build an Enduring Advantage.

This Program Element (PE) directly supports the Office of Strategic Intelligence and Analysis (OSI&A) for the Office of the Under Secretary of Defense, Research and Engineering (OUSDR&E)). OSI&A's net technical assessment (NTA) framework integrates intelligence, comparative assessment, and independent analysis to shape the development of innovative capabilities and address emerging threats from a diverse range of state and non-state actors as outlined in the National Defense Strategy (NDS) and as reported through the intelligence community (IC). The complexity of capability gaps in the future operating environment combined with the speed of emerging threat development requires a "red vs blue" NTA approach. This approach provides integrated baselines for OUSDR&E analyses and investment decisions that are reflective of cross-cutting Joint Force plans, missions, and concepts. Trends and potential impacts related to global critical and emerging technology developments are analyzed and assessed, and findings are integrated with IC reporting to enable decision advantage in OUSDR&E and inform strategies for maintaining technological superiority and modernizing key capabilities for the Joint Force.

Analysis and assessments are focused on challenges related to NDS objectives and competitors' research and development trends. Two main lines of effort accomplish this mission:

- 1) An NTA is conducted using integrated information from the acquisition, intelligence, operational, and technical communities to quantify key attributes of emerging critical challenges and assess counter technology options. The framework includes execution of the following activities:
 - Independent teams of industry, academic, and Federally Funded Research and Development Center/University Affiliated Research Center (FFRDC/UARC) partners conduct comparative analyses and assessments of critical technology research and development efforts between U.S. and competitor nations inform decision and drive investment across the Enterprise.
 - Baseline operational and technical assessments underpin technology development efforts across OUSDR&E).
 - Technology-based wargames identify opportunities stemming from emerging technologies; evaluate the demands of the future operational environment; and integrate the operational, technology, and intelligence communities across the DoD and IC.
 - Integrated methodologies and findings from technology forecasting, maturation assessments, and NTA efforts support global research watch activities to identify technological development areas for research and investment.

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2) Technology watch and forecasting capabilities enable OUSD(R&E)'s monitoring and analysis of global basic and applied research activities, while intelligence integration informs R&E enterprise portfolio decisions and the U.S. S&T intelligence posture by establishing linkages across both entities. These efforts characterize the global technology environment for decision advantage across DoD and U.S. government technology development enterprises.

- Recurring technical exchanges between OUSD(R&E) portfolio managers and the subject matter expert analysts and production centers of the IC facilitate the direct exchange of intelligence needs and finished intelligence products to establish a comprehensive understanding of the global technology landscape;
- Open-source analysis, including technology watch and horizon scanning activities, identifies emerging and disruptive technology trends in areas of future military utility to inform strategic investment decisions.

Due to the emergent nature of challenges and threats, specific analytic foci are unlikely to be identified beyond the current budget year. The process for developing and executing assessments can span fiscal years and may have multiple phases as trends progress and new information arises.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	23.936	24.052	24.756	-	24.756
Current President's Budget	23.067	29.227	24.328	-	24.328
Total Adjustments	-0.869	5.175	-0.428	-	-0.428
• Congressional General Reductions	-	-0.325			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	5.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.865	-			
• Program Adjustments	-0.004	-	-0.428	-	-0.428

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 328: *Science and Technology Analytic Assessments*
 Congressional Add: *Strategic Multilayer Assessment Cell*

	FY 2022	FY 2023
	-	5.500
Congressional Add Subtotals for Project: 328	-	5.500
Congressional Add Totals for all Projects	-	5.500

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Change Summary Explanation FY 2024 decrease of \$0.428 million is comprised of a re-alignment of \$0.539 million to support the Historically Black Colleges and Universities/Minority Serving Institutions program, which is a priority of the Under Secretary of Defense for Research and Engineering (USD(R&E)), and \$0.026 million to support departmental priorities, and an economic assumption increase of \$0.137 million.		

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Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603288D8Z / <i>Science and Technology (S&T) Analytic Assessments</i>				Project (Number/Name) 328 / <i>Science and Technology Analytic Assessments</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
328: <i>Science and Technology Analytic Assessments</i>	100.224	17.259	22.000	17.335	-	17.335	17.655	18.047	18.425	18.814	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Science and Technology (S&T) Analytic Assessments Project Code funds NTA through the integration of intelligence, comparative assessment, and independent analysis to shape the development of innovative capabilities and address emerging threats from a diverse range of state and non-state actors as outlined in the NDS and as reported through the IC. The emerging nature of the problem sets makes specific identification of project topics beyond the current budget year unlikely.

Independent technology analysis performed by industry, academic, and FFRDC/UARC performers and DoD laboratories. Main lines of effort include:

- Quantitative, engineering-level analyses of novel technologies and concepts that identify areas of future technology overmatch.
- Comparative assessment of critical technology research and development efforts between U.S. and competitor nations.
- Technology maturation forecasting that characterizes the future maturation of defense-related technologies in related aggregate groups of capability enablers.

Operational and technical assessments identify prioritized operational issues and associated technology focus areas through comprehensive kill chain analysis across all domains through the year 2040. Characterizations of future operating environments and challenges inform the scoping and design efforts of science and technology and engineering analyses for DoD. Main lines of effort include:

- Technology-based Wargames. Wargame outputs inform future concept and capability development, prototyping and experimentation activities, threat forecasting, and DoD S&T investments. The wargames identify opportunities stemming from emerging technologies, evaluate the demands of the future operational environment, and integrate the operational, technology, and intelligence communities.
- Future Operating Environment Analyses. This analysis fuses IC characterizations of future threats with operational impacts to the Joint Force, enabling further technology-specific analysis in areas of critical challenge or opportunity.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Science and Technology Analytic Assessments	17.259	16.500	17.335
Description: The Science and Technology (S&T) Analytic Assessments Project code supports the development of innovative capabilities to meet emerging threats from the diverse range of state and non-state actors confronting the U.S.. These capabilities support the objectives of the NDS and the National Military Strategy. Throughout this process the analysis will be tightly coupled with both the IC and the operational community.			
FY 2023 Plans: Independent Technology Engineering Analysis:			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Conduct engineering- and physics-based threat assessments informed by IC reporting to identify gaps in U.S. capabilities. - Conduct analysis of novel technology and concepts to address capability gaps and potential counters to intelligence-derived emerging technologies in future operating environments. - Conduct independent assessments of U.S. and strategic competitors' critical capability and technology development. - Produce comparative assessments within DoD critical technology areas of existing and planned U.S. capabilities and weapons systems characterizing emerging threat systems and capabilities in future operating environments. - Integrate methodologies and findings from technology forecasting, maturation assessments, and NTA efforts to support global research watch activities that identify technological development areas for research and investment. - Conduct comparative assessments of and report on efforts by the U.S. and the People's Republic of China to advance critical modernization technologies with military applications (FY 2022 NDAA §1251). <p>Operational and Technical Assessment:</p> <ul style="list-style-type: none"> - Update foundational data of U.S. and adversary capabilities to enable mission-oriented analysis of emerging threats. - Assess emerging operational scenarios against future red and blue capability timelines. - Design and execute technology-based wargames to inform and better align DoD modernization activities, joint concept and capability development, and threat forecasting. <p>FY 2024 Plans: Continued execution of FY 2023 plans.</p> <p>FY 2024 activities include additional quantities of operational and engineering analyses in specific technology areas.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2024 increase of \$0.835 million reflects an internal reprioritization to increase comparative assessment efforts in the S&T Analytic Assessments project in this project code 328, as well as minor budget fluctuations.</p>			
Accomplishments/Planned Programs Subtotals	17.259	16.500	17.335

	FY 2022	FY 2023
<p>Congressional Add: Strategic Multilayer Assessment Cell</p> <p>FY 2023 Plans: Funding in FY 2023 will allow execution of the Strategic Multilayer Assessment (SMA) Cell.</p> <p>The SMA Cell supports senior leadership in the Combatant Commands (CCMDs) with actionable assessments of complex operational and technical challenges. SMA efforts leverage multi-agency, multi-disciplinary approaches to answer the Combatant Commanders' key strategic questions that are not within the DoD's core</p>	-	5.500

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	FY 2022	FY 2023
<p>competency. The assessments help maintain our competitive advantage in an increasingly complex global environment. SMA assessments are framed during the year of execution and are in response to specific tasking from senior leadership in the CCMDs. The SMA Cell researches options from across the U.S. Government, foreign partners, academia, and the private sector. Joint Chiefs of Staff Directorate for Operations (J-3) and the Office of the Under Secretary of Defense for Research and Engineering share management and oversight responsibilities for SMA efforts. Joint Chiefs of Staff Directorate for Operations (J-3) plans and executes SMA efforts.</p>	-	5.500
Congressional Adds Subtotals	-	5.500

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

N/A

Remarks

D. Acquisition Strategy

N/A

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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
177: <i>Technology Watch/Horizon Scanning</i>	6.163	5.808	7.227	6.993	-	6.993	7.185	7.331	7.483	7.659	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Technology Watch/Horizon Scanning (TW/HS) Project Code supports emerging and disruptive technology characterization through the identification of technology research trends and the forecasting of future concepts and technology maturation with the potential for military application through 2040. TW/HS activities inform the Department's investment decisions in technology areas to maintain or regain global competitive advantage. The program provides tailored technical assessments that identify the military relevance, research opportunities, and investment targets for emerging and disruptive technologies. OSI&A enables intelligence-informed decision advantage across the S&T enterprise portfolio and informs the U.S. S&T intelligence posture by establishing linkages across the R&E and IC entities.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Technology Watch/Horizon Scanning	5.808	7.227	6.993
<p>Description: The program utilizes multiple analytic methodologies to identify nascent technologies characterize the future global S&T operating environment. This characterization, in combination with other technical analysis performed by OSI&A, will inform strategic technology development decisions across the OUSD(R&E) Enterprise. OSI&A will work in collaboration with international allies and partners to further the field of critical and emerging technology research and analysis.</p> <p>FY 2023 Plans:</p> <p>Technology Watch and Forecasting:</p> <ul style="list-style-type: none"> - Integrate methodologies and findings from technology scanning and forecasting, maturation assessments, data analysis, and net technical assessment efforts to characterize global developments in science and technology research. - Analyze financial data from public, private, and venture capital sources to identify where U.S. and foreign industries are investing resources in promising areas of technology development. - Conduct horizon scans that identify and track global technology trends. - Collaborate with international allies and partners to identify emerging technology trends and research activities in the furtherance of common research and analysis opportunities that support a more connected and resilient research ecosystem. <p>Intelligence Integration:</p> <ul style="list-style-type: none"> - Conduct formal technical exchanges between OUSD(R&E) portfolio managers and IC subject matter expert to establish a common understanding of global technology developments. 			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
- Coordinate IC support for OSI&A-sponsored technical analysis and independent comparative technology assessments and provide OSD-level support to S&T intelligence initiatives. - Direct the Defense Intelligence Enterprise to provide analytic input to R&E-defined critical intelligence needs and disseminate the IC response to R&E stakeholders. <i>FY 2024 Plans:</i> Continued execution of FY 2023 plans and refinement of horizon scanning and technology assessment methodologies. <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> The decrease of \$0.234 million between FY 2023 and FY 2024 is the result of an internal reprioritization to increase comparative assessment efforts in the S&T Analytic Assessments project in this PE (PE 0603288D8Z P328).			
Accomplishments/Planned Programs Subtotals	5.808	7.227	6.993

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

N/A

Remarks

N/A

D. Acquisition Strategy

N/A