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

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605604A / <i>Survivability/Lethality Analysis</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
Total Program Element	-	33.632	36.001	36.389	-	36.389	-	-	-	-	-	-
675: <i>Army Survivability Analysis & Evaluation Supp</i>	-	33.632	36.001	36.389	-	36.389	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This Program Element (PE) funds objective vulnerability assessment products necessary for the inherently-governmental Army Test & Evaluation Command/Army Evaluation Center (ATEC/ AEC) mission and for the Research and Development and analysis communities. Products result from investigating, analyzing, assessing, experimenting and reporting on the survivability of Soldiers, and on the survivability, lethality and vulnerability (SLV) of the highest-priority Army and threat systems. Products are leveraged within the Army Futures Command (AFC), the Cross Functional Teams (CFTs) and Program Managers / Program Executive Offices (PM/PEO) to exercise constructive design influence over materiel development and to provide credible engineering-level underpinning and input to the Army Analytical Community.

This PE provides quantitative analyses and data for fielded and developmental systems as the Army pursues its modernization priorities and ensures readiness through the fielding of lethal and survivable systems for multi-domain operations. This PE funds engineering level analysis and experimentation supporting all CFTs including Long Range Precision Fires systems, Next Generation Combat Vehicles, Future Vertical Lift, Network / Command, Control, Communications (C3I), Air & Missile Defense, Soldier Lethality, and other high Army priority efforts. Principal data and analysis domains are integrated materiel performance, cyber resilience, human engineering and performance, Electronic Warfare threat defense, and mission threat analysis.

Assessments funded by this PE are conducted across the spectrum of multi-domain battlefield threats to include: guns, missiles, mines and other methods of inflicting physical damage; jammers, countermeasures, and other electronic warfare techniques; cyber threats from insiders to nation states; and directed energy weapons. Many different kinds of technical capabilities are used to generate these analyses, including specialized equipment, modeling & simulation, and experimental facilities. This PE ensures these capabilities can represent a live, virtual, or constructive hostile environment required for credible assessment, thus enabling evaluators, developers, users, and decision makers to make informed acquisition judgments. This technical data from earliest AFC experimentation to final operational test is retained and serves as AFC's repository of analysis and information for supporting an ever-improving body of evidence to drive Milestone Decisions. This body of evidence enables properly informed decisions concerning acquisition and production; maximizes Army overmatch in systems and tactics; informs investment priorities; and mitigates system weaknesses prior to actual combat.

Technical data and analysis results funded by this PE are efficiently leveraged for many different Army uses, reducing total cost to the Army by eliminating the need for duplicative capabilities funded by individual system developers. Central funding of this mission assures accurate and consistent technical treatment across all formal system Evaluations, and across the Army's analytical community as it conducts analyses of alternatives and other studies. The United States (U.S.) Army Combat Capabilities Development Command (CCDC) and ATEC/AEC integrate the results from the work program into Army's formal Evaluation process to ensure ATEC can comply with its legally-mandated responsibility to assess system survivability along with effectiveness and suitability.

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B. Program Change Summary (\$ in Millions)	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>
Previous President's Budget	35.075	36.001	36.839	-	36.839
Current President's Budget	33.632	36.001	36.389	-	36.389
Total Adjustments	-1.443	0.000	-0.450	-	-0.450
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.443	-			
• Adjustments to Budget Years	-	-	-0.450	-	-0.450

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Appropriation/Budget Activity 2040 / 6					R-1 Program Element (Number/Name) PE 0605604A / <i>Survivability/Lethality Analysis</i>				Project (Number/Name) 675 / <i>Army Survivability Analysis & Evaluation Supp</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
675: <i>Army Survivability Analysis & Evaluation Supp</i>	-	33.632	36.001	36.389	-	36.389	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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This Project provides quantitative analyses and data for fielded and developmental systems as the Army pursues its modernization priorities and ensures readiness through the fielding of lethal and survivable systems for multi-domain operations. PE funds engineering level analysis and experimentation supporting all CFTs including Long Range Precision Fires systems, Next Generation Combat Vehicles, Future Vertical Lift, Network / Command, Control, Communications (C3I), Air & Missile Defense, Soldier Lethality, and other highest Army priority efforts Principal data and analysis domains are integrated materiel performance, cyber resilience, human engineering and performance, Electronic Warfare threat defense, and mission threat analysis.

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>Title: Survivability, Lethality, Vulnerability Analyses (SLVA) for Ground, Aviation, Munitions, and Soldier Systems</p> <p>Description: This activity provides integrated multi-domain SLV for highest priority Ground, Aviation, Munitions, and Soldier Systems.</p> <p>FY 2021 Plans: Conduct SLVA on Long Range Precision Fires, Next Generation Combat Vehicle, Future Vertical Lift, and Soldier lethality systems, and on AEC and CCDC's highest priority platform and weapon systems. For systems supported, work with materiel developers to constructively influence system design and provide relevant data to Army analytical community for supporting Analyses of Alternatives and other Army studies.</p> <p>FY 2022 Plans: Will conduct essential analysis on Long Range Precision Fires, Next Generation Combat Vehicle, Future Vertical Lift, and Soldier lethality systems, and on AFC?s, AEC?s, and CCDC's highest priority platform and weapon systems. For systems supported, working with materiel developers to constructively influence system design and providing relevant data to Army analytical community for supporting Analyses of Alternatives and other Army studies.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Economic adjustment</p>		15.604	16.370	16.703
<p>Title: Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) System Survivability Assessments</p> <p>Description: This effort produces assessments of the survivability of C4ISR systems in EW and cyber threat environments and conducts Electronic Attack (EA) and cyber analyses that reveal critical vulnerabilities in C4ISR systems. It also defines, demonstrates, and recommends mitigation options to proponents and evaluators of C4ISR. A cyber vulnerability database is maintained for the benefit of the community.</p> <p>FY 2021 Plans: Will conduct cyber and EW SLVA on network components as specified by the Network C3I CFT and AEC and on CCDC's highest priority Network/C3 and other systems. For systems supported working with materiel developers to constructively influence system design and providing relevant data to Army analytical community to support Analyses of Alternatives and other Army studies. Cyber support includes resiliency assessments of systems and Soldiers together and verification of fixes to identified vulnerabilities.</p> <p>FY 2022 Plans:</p>		17.156	18.075	18.108

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>Will conduct cyber and EW analysis on network components as specified by the Network C3I CFT, AFC, AEC, and on CCDC's highest priority Network/C3 and other systems. For systems supported working with materiel developers to constructively influence system design and providing relevant data to Army analytical community to support Analyses of Alternatives and other Army studies. Cyber support includes resiliency assessments of systems and Soldiers together and verification of fixes to identified vulnerabilities.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Economic Adjustment</p>				
<p>Title: Survivability, Lethality, Vulnerability (SLV) Analyses for Developmental Air and Missile Defense Systems</p> <p>Description: Conduct integrated SLV analyses for developmental air and missile defense systems, pre-planned product improvements of current systems, and recently fielded systems.</p> <p>FY 2021 Plans: Conduct high-priority SLVA on AMD systems and components as specified by AEC and CCDC. For systems supported, work with materiel developers to constructively influence system design and providing relevant data to Army analytical community to support Analyses of Alternatives and other Army studies.</p> <p>FY 2022 Plans: Will conduct high-priority measurements and analysis on AMD systems and components as specified by AFC, AEC, and CCDC. For systems supported working with materiel developers to constructively influence system design and providing relevant data to Army analytical community to support Analyses of Alternatives and other Army studies.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Economic Adjustment</p>		0.872	1.556	1.578
Accomplishments/Planned Programs Subtotals		33.632	36.001	36.389
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				