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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force **Date:** March 2024

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 2: Applied Research</i>	R-1 Program Element (Number/Name) PE 0602022F I <i>University Affiliated Research Center (UARC) - Tactical Autonomy</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	8.018	8.225	0.000	8.225	8.417	8.576	8.757	8.941	Continuing	Continuing
622408: <i>HBCU University Affiliated Research Center (UARC)</i>	-	0.000	8.018	8.225	0.000	8.225	8.417	8.576	8.757	8.941	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Tactical Autonomy University Affiliated Research Center (UARC) supports a consortium performing innovative research to advance the state of the art as well as cultivate awareness of and expertise in the field of tactical autonomy. Research topics of interest include, but are not limited to, the following: Trust in Mission Autonomy, Collaboration between Platforms, and Human Machine Teaming.

Funds in this program element are planned to investigate, design, develop, digitize, and/or analyze specified technology advancements in air, space, ground, sea, and/or cyber domains. This research will address factors that have complicated the deployment and adoption of autonomous technologies such as trust in mission autonomy, collaboration between platforms, and human-machine teaming. Research will also seek to integrate autonomous technologies with advanced battle management systems. The UARC will also work to expand the defense industrial base by identifying and incorporating applicable technologies from small businesses.

This research initiative will support the Department of Defense Science, Technology, Engineering, and Mathematics (STEM) strategic plan by establishing long-term core research expertise in tactical autonomy that will leverage scientific and engineering capabilities among the consortium of contributing HBCUs. Tactical autonomy will be a critical technology in prolonged great power conflict because the development of autonomous systems is a realistic approach to counter an advisory approaching parity in conventional strength in theatre, and tactical autonomy will enable warfighting capability in an environment where command and control may be disrupted by cyber or electronic warfare effects. This research will contribute to operational warfighting capabilities by increasing the capabilities of uncrewed platforms that will have greater availability, easier mobility and logistical sustainability, and shorter production cycle times. Research will produce creative solutions to optimize the capabilities of reliable data-driven autonomous platforms capable of operating in environments well suited to uncrewed systems, such as persistent defensive or force protection-related missions, or in high-risk environments such as heavy anti-access or Nuclear, Chemical, Biological (NBC) affected settings. One of the foremost advantages of the United States in great power competition is its advanced university-based scientific research institutions. This research initiative will strengthen HBCU scientific and engineering capabilities, advance the early career development of STEM students, leverage the research contributions of university faculty, and expand the pipeline of STEM graduates with national security experience for the government and the private-sector defense industrial base.

This program is in Budget Activity 2, Applied Research because this budget activity includes studies, investigations, and non-system specific technology efforts directed toward general military needs with a view toward developing and evaluating the feasibility and practicality of proposed solutions and determining their parameters.

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B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	8.018	8.208	0.000	8.208
Current President's Budget	0.000	8.018	8.225	0.000	8.225
Total Adjustments	0.000	0.000	0.017	0.000	0.017
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.017	0.000	0.017

Change Summary Explanation

FY 2025 funding increased compared to FY 2024 by \$0.017 million due to anticipated escalation for prime contract labor and other direct costs in line with macroeconomic conditions.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
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Title: University Affiliated Research Center (UARC) For Tactical Autonomy	-	8.018	8.225
Description: Development of technologies and tools to enable autonomous systems to act with delegated and bounded authority of humans in support of tactical, short-term actions, associated with longer-term strategic visions. Examples of capability objectives are: Enhancing multi-domain situational awareness, faster data processing and analysis, enhancing force protection, supporting cyber defense, augmenting logistics operations, and automating maneuverability and mobility functions.			
FY 2024 Plans: The base funding year will enable research to commence by the UARC consortium members to start to support development of technologies and tools to enable autonomous systems to act with delegated and bounded authority of humans in support of tactical, short-term actions, associated with longer-term strategic visions. Initial work is planned to start among an estimated thirty-six technical requirements this first fiscal year of funding with a primary focus toward the Collaborative Combat Aircraft (CCA).			
FY 2025 Plans: Continuation of the development of technologies and tools to enable autonomous systems to act with delegated and bounded authority of humans in support of tactical, short-term actions, associated with longer-term strategic visions.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 budget increased compared to FY 2024 by \$0.207 million for escalation as negotiated in the prime contract for labor and other direct costs.			
Accomplishments/Planned Programs Subtotals	-	8.018	8.225

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

Remarks
The HBCU Tactical Autonomy UARC will be co-funded by the Office of the Under Secretary of Defense (Research and Engineering) and the Office of the Under Secretary of Defense (Acquisition and Sustainment).

E. Acquisition Strategy
Not applicable