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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 2: Applied Research</i>	R-1 Program Element (Number/Name) PE 0602020F / <i>Future AF Capabilities Applied Research</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	-	0.000	79.854	79.901	0.000	79.901	-	-	-	-	-	-
620200: <i>Enterprise Transformational Appld Research</i>	-	0.000	79.854	79.901	0.000	79.901	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

This program develops cross-enterprise transformational applied research efforts to accelerate the "pipeline" of technology-enabled capability candidates focused on the five strategic capabilities outlined in the Air Force 2030 Science and Technology (S&T) Strategy: Global Persistent Awareness; Resilient Information Sharing; Rapid, Effective Decision-Making; Complexity, Unpredictability, and Mass; and Speed and Reach of Disruption and Lethality. The Air Force Research Laboratory (AFRL) will plan and manage these funds at the enterprise level to achieve the intent of the Strategy.

These activities are managed by the Air Force Research Laboratory Chief Technologist located at Wright Patterson Air Force Base, Ohio, at the Enterprise level, and executed across the various AFRL Technology Directorate locations.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver science & technology capabilities. The use of program funds in this program element would be in addition to the civilian pay expenses budgeted in program elements 0601102F, 0602102F, 0602201F, 0602202F, 0602203F, 0602204F, 0602602F, 0602605F, 0602788F, 1206601SF, and 0602298F.

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.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	0.000	100.000	100.000	0.000	100.000
Current President's Budget	0.000	79.854	79.901	0.000	79.901
Total Adjustments	0.000	-20.146	-20.099	0.000	-20.099
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-20.146			
• 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	-20.099	0.000	-20.099

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Change Summary Explanation

FY2021 decrease of \$20.146M Congressional Directed Reduction due to improving funds management--forward financing in the amount of 20.000M and Undistributed Reduction - Excess to Need in the amount of 0.146M.

FY2022 decrease of \$20.099M adjustment to support higher AF priorities.

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>Title: Transformational Capability Incubator</p> <p>Description: Integrates cross-enterprise multi-directorate transformational applied research efforts to accelerate the "pipeline" of technology-enabled capability candidates pursuing the five strategic capabilities outlined in the Air Force Science and Technology Strategy. The Air Force Research Laboratory will plan and manage these research activities at the enterprise level with decentralized execution to achieve the intent of the Strategy.</p> <p>FY 2021 Plans: Conduct deliberate, structured horizon scanning and ideation activities to identify candidate technologies for consideration and pursuit. Using the results of scanning and ideation activities, will conduct modeling, simulation, and analysis to guide investment decisions, create technology roadmaps, and track technology maturation, opportunities, and gaps focused on identifying and incubating leap ahead technology solutions. Engage the Air Force and other government research organizations, industry, and academia through a series of competitive, open opportunity calls to promote solution-oriented thinking, leverage new partnerships, and incubate leap ahead technology intent to realize an Air Force that dominates time, space and complexity in future conflict.</p> <p>FY 2022 Base Plans: Continue to develop future candidate technology programs which result from the scanning and ideation activities from the previous year. The current technology programs include: Air Force Explore (now called Explore), Seedlings for Disruptive Capabilities, Wartech capability demonstrations, and novel business processes all intent on implementing the Department of the Air Force Science and Technology 2030 Strategy with applied research. Technology studies and demonstrations include integrated base defense, space integration, airships for logistics, low cost multipurpose unmanned aircraft, and predictive tracking for commercial satellites. Advance the development of disruptive seedling technologies such as integrated compact Electro-Optic/Infra-Red sensing, autonomous runway and airfield augmentation, digital arrays for airborne battle management systems, printed composites for attritable and rapidly deployable aircraft, and articulated nose technology for missiles. Continue to explore transformational research analytic technologies to enable validated positions and provide a</p>	0.000	79.854	79.901	0.000	79.901

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
solid foundation to predict future outcomes, as well as looking for more seedlings to feed the capability pipeline. Continue to advance future workforce development programs and broadening partnerships to deepen and expand the scientific and technology enterprise. FY 2022 OCO Plans: N/A FY 2021 to FY 2022 Increase/Decrease Statement: Funding increased by \$0.047 million from FY 2021 to FY 2022. Funding increased due Department of Defense and Department of the Air Force priorities.					
Accomplishments/Planned Programs Subtotals	0.000	79.854	79.901	0.000	79.901

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

Remarks

E. Acquisition Strategy
N/A