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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	100.000	0.000	100.000	100.000	100.000	100.000	100.000	Continuing	Continuing
620200: <i>Enterprise Transformational Appld Research</i>	-	0.000	0.000	100.000	0.000	100.000	100.000	100.000	100.000	100.000	Continuing	Continuing

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 Science and Technology (S&T) Strategy approved by the Secretary of the Air Force in April 2019. The five strategic capabilities as outlined in the Strategy are as follows: Global Persistent Awareness; Resilient Information Sharing; Rapid, Effective Decision-Making; Complexity, Unpredictability, and Mass; and Speed and Reach of Disruption and Lethality. Air Force Research Laboratory (AFRL) will plan and manage these funds at the enterprise level to achieve the intent of the Strategy.

In FY 2021, the Air Force created PE 0602020F, Future AF Capabilities Applied Research, Project 620200, Enterprise Transformational Applied Research, to consolidate the specific Future AF Capabilities Applied Research efforts/ activities from the following PEs and Projects: PE 0602201F, Aerospace Vehicle Technologies, Project 622403, Flight Controls and Pilot-Vehicle Interface; PE 0602202F, Human Effectiveness Applied Research, Project 625328, Human Dynamics Evaluation; PE 0602204F, Aerospace Sensors, Project 627622, RF Sensors and Countermeasures Tech; PE 0602602F, Conventional Munitions, Project 622068, Advanced Guidance Technology; and PE 0602788F, Dominant Information Sciences and Methods, Project 625315, C4I Dominance Technology, in order to better align with the Air Force Science and Technology Strategy, April 2019, and execute transformational Applied Research.

This Program Element creation and realignment of funding from the existing Air Force RDT&E Applied Research PEs are administrative realignments and not a new start.

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.

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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	100.000	0.000	100.000
Total Adjustments	0.000	0.000	100.000	0.000	100.000
• 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	100.000	0.000	100.000

Change Summary Explanation

Increase in FY 2021 of \$100.00 million is due to the realignment and consolidation of Future AF Capabilities Applied Research efforts/ activities from the following PEs and Projects: PE 0602201F, Aerospace Vehicle Technologies, Project 622403, Flight Controls and Pilot-Vehicle Interface; PE 0602202F, Human Effectiveness Applied Research, Project 625328, Human Dynamics Evolution; PE 0602204F Aerospace Sensors, Project 627622, RF Sensors and Countermeasures Tech; PE 0602602F, Conventional Munitions, Project 622068, Advanced Guidance Technology; and PE 0602788F, Dominant Information Sciences and Method, Project 625315, C4I Dominance Technology, to better align with the Air Force S&T strategy, April 2019, and provide Congress with increased transparency on transformational Air Force S&T activities.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
<p>Title: Transformational Capability Incubator</p> <p>Description: Integrates 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 Science and Technology Strategy approved by the Secretary of the Air Force in April 2019. The Air Force Research Laboratory will plan and manage these efforts and activities at the enterprise level to achieve the intent of the Strategy.</p> <p>FY 2020 Plans: In FY 2020, this work is performed under the Future AF Capabilities Applied Research efforts within the following Air Force Science and Technology PEs and Projects: PE 0602201F, Aerospace Vehicle Technologies, Project 622403, Flight Controls and Pilot-Vehicle Interface; PE 0602202F, Human Effectiveness Applied Research, Project 625328, Human Dynamics Evolution; PE 0602204F Aerospace Sensors, Project 627622, RF Sensors and Countermeasures Tech; PE 0602602F, Conventional Munitions,</p>	0.000	0.000	100.000

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
Project 622068, Advanced Guidance Technology; and PE 0602788F, Dominant Information Sciences and Method, Project 625315, C4I Dominance Technology. FY 2021 Plans: Conduct structured horizon scanning and ideation activities to identify future candidate technologies for consideration and pursuit. Using the results of structured horizon 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 along the five strategic capabilities identified in the Air Force S&T Strategy. 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 demonstrations with the goal of moving the Air Force from a current force challenged by increasingly sophisticated adversaries to a future force that dominates time, space and complexity in future conflict. FY 2020 to FY 2021 Increase/Decrease Statement: FY 2021 increased compared to FY 2020 by \$100.000 million. Funding increased due to the realignment and consolidation of the Future AF Capabilities Applied Research efforts/activities to PE 0602020F, Future AF Capabilities Applied Research, Project 620200, Enterprise Transformational Applied Research, to better align with the Air Force S&T Strategy, April 2019, and provide Congress with increased transparency on transformational Air Force S&T activities.				
Accomplishments/Planned Programs Subtotals		0.000	0.000	100.000
D. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
E. Acquisition Strategy N/A				