Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force												Date: May 2021
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*							
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	-	322.793	305.943	343.545	0.000	343.545	-	-	-	-	-	-
640858: *AFWERX Prime*	-	0.000	0.000	57.467	0.000	57.467	-	-	-	-	-	-
645350: *Experimentation*	-	194.665	203.772	81.383	0.000	81.383	-	-	-	-	-	-
645351: *Prototyping*	-	128.128	102.171	204.695	0.000	204.695	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Tech Transition Program addresses the gap between initial system-level technology or concept development and demonstration, and successful acquisition and operational capability implementation. This program utilizes multiple approaches and integrated activities to field technology for the warfighter. First, the Tech Transition Program reduces risk in emerging technology markets by partnering with industries through Prime investments and providing access to Government analysis, testing and certification capabilities. Prime investments focus on Government-Industry partnerships to influence and militarize emerging commercial capabilities to ensure US competitive advantage in key technology areas. The Tech Transition Program also matures new warfighting concepts, to rapidly develop fieldable prototypes, and for experimentation to assess military utility of transition-ready weapon systems. Following the guidance laid out in the National Defense Strategy the Department of the Air Force has institutionalized Experimentation and Prototyping to achieve smarter, faster, and more efficient acquisitions that move technologies rapidly into the most critical warfighting capabilities. Experimentation explores new concepts and their applications in potential future operating environments within a system-of-systems context taking risks early in the acquisition process to drive a more optimized and efficient acquisition process significantly reducing overall acquisitions costs. Prototyping enables integration and demonstration of emerging technologies to quickly move them into warfighting capability. The Tech Transition Program allows acquisition program managers (the capability developers) and warfighters (the capability recipients and end users) to prototype, integrate, and demonstrate candidate technologies and assess them in an operational system of systems environment in partnership with Combatant Commanders, Major and Field Commands, Program Executive Officers, schoolhouses, simulation facilities, and development planning organizations.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver Technology Transition for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force					Date: May 2021
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*			R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*		
B. Program Change Summary ($ in Millions)	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**
Previous President's Budget	314.926	219.252	259.128	0.000	259.128
Current President's Budget	322.793	305.943	343.545	0.000	343.545
Total Adjustments	7.867	86.691	84.417	0.000	84.417
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-70.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	157.250			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-10.453	0.000			
• Other Adjustments	18.320	-0.559	84.417	0.000	84.417

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2020	FY 2021
Project: 645350: *Experimentation*		
Congressional Add: *Program Increase - Low Cost Attritable Aircraft Technology*	96.706	50.000
Congressional Add: *Program increase - small business research for rocket technology*	0.000	2.500
Congressional Add: *Program Increase - Directed Energy Experimentation*	4.835	0.000
Congressional Add: *Program Increase - Autonomous Air Combat Operations*	0.000	5.000
Congressional Add: *Program Increase - Cold Spray and Directed Energy Deposition*	0.000	6.000
Congressional Add: *Program Increase - Arctic Communications*	0.000	50.000
Congressional Add: *Program Increase - Massive Area Additive Manufacturing*	0.000	10.000
Congressional Add: *Program Increase - Additive Manufacturing for Metals*	0.000	10.000
Congressional Add Subtotals for Project: 645350	101.541	133.500
Project: 645351: *Prototyping*		
Congressional Add: *Program Increase - Rapid Sustainment Office*	19.341	0.000
Congressional Add: *Program Increase - Reliable Power for Critical Infrastructure*	5.802	0.000
Congressional Add: *Program Increase - Agility Prime*	24.122	0.000
Congressional Add: *Program Increase - Logistics Technologies*	4.835	8.750
Congressional Add: *Program Increase - Small Satellite Manufacturing*	7.736	0.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force	Date: May 2021
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2020	FY 2021
Congressional Add: *Program Increase - Additive Manufacturing*	9.671	0.000
Congressional Add: *Program Increase - Heavy Payload Solar Powered UAS JCTC*	0.000	15.000
Congressional Add Subtotals for Project: 645351	71.507	23.750
Congressional Add Totals for all Projects	173.048	157.250

Change Summary Explanation

FY 2022 funding increased compared to FY 2021 by 84.417M. Funding increased due to the addition of AFWERX Prime effort, and increased requirements for system prototyping including Base Defense, Palletized Munitions, Operational Energy efforts, Regional Operating Picture, and Watchtower Initiatives.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 640858 / *AFWERX Prime*	

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
640858: *AFWERX Prime*	-	0.000	0.000	57.467	0.000	57.467	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

AFWERX Prime is a new acquisition approach that uses government-specific resources to reduce risk in emerging technology markets while partnering with investors, industry, interagency, and international partners for accelerated, affordable, and agile commercial and military capability. These Prime efforts are led by a Chief Commercialization Officer whose key responsibility is to accelerate technology commercialization for fielding of military capability. Agility Prime is the first effort in the series and will provide research, development, testing, and evaluation to field transformative vertical flight technology in 2023. These systems may incorporate non-traditional electric or hybrid propulsion for manned or optionally manned missions, with onboard, remote, or eventually autonomous control. Agility Prime will leverage commercial investment in technologies that support mobility and sustainment in benign or contested environments to enable agile, lower-cost distributed logistics, humanitarian operations, or disaster response operations. AFWERX Prime will also explore associated technologies and potential follow-on Prime initiatives. Future Prime initiatives will use the same paradigm to leverage commercial technology and investment for high returns on government participation in this sector, achieving advanced, agile, and accelerated fielding of commercial and military capability bolstering national security and domestic technological dominance.

NOTE: This is a continuation of a FY 2021 congressional add titled Agility Prime in PE 0603211F Aerospace Technology Development and Demonstration, Project 634920 Flight Vehicle Tech Integration. This effort was moved to PE 0604858F, new BPAC 0604858F AFWERX Prime due to maturation of technology and in order to better align Department of the Air Force objectives across appropriate PEs. This is not a new start.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver Tech Transition - AFWERX Prime for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: Agility Prime	-	0.000	57.467
Description: Execution of efforts to explore and transition emerging dual-use technologies under this new acquisition approach to include prep to field transformative vertical flight and enabling technologies. Activities include technical exchanges, research, development, certification, testing, and evaluation.			
FY 2021 Plans: N/A			
FY 2022 Plans: Continue risk reduction ground testing with multiple aircraft manufacturers including wind tunnel, environmental, cyber penetration, and Electromagnetic Interference characterization. Continue prototype testing to characterize performance, handling qualities,			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 640858 / *AFWERX Prime*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
and mission system effectiveness. Continue airworthiness assessments aimed at providing flight certified vehicles in 2023. Initiate flight tests in realistic operating environments and scenarios to provide data for business case analysis and fielding. Initial research, development, testing, and evaluation of other potential technology sectors to follow this Prime acquisition paradigm. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY 2022 funding increased compared to FY 2021 by $57.467 million. Funding increased due to creation of BPAC and commencement of AFWERX Prime efforts. Previous Agility Prime work was funded as a congressional add in PE 0603211F Aerospace Technology Dev/Demo.			
Accomplishments/Planned Programs Subtotals	-	0.000	57.467

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This effort will proceed along the following path: 1) investigate details regarding potential commercial markets; 2) identify technologies that are likely to result in successful prototypes; 3) create collaborative test plans potentially offering test assets and expertise; 4) leverage this campaign for near-term airworthiness as well as preparation for procurement of hardware, software, data, or services. The intent is to accelerate learning to enable early adoption, procurement, and fielding. This is the process currently being executed under Agility Prime and would be continued under other future Prime initiatives.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 640858 / *AFWERX Prime*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AOI 1 PERFORMER A	Reqn	Various : Various	-	-		-		12.000	Oct 2021	-		12.000	-	-	-
AOI 2 Performer A	Reqn	Various : Various	-	-		-		3.000	Nov 2021	-		3.000	-	-	-
AOI 1 Performer B	Reqn	Various : Various	-	-		-		6.000	Jan 2022	-		6.000	-	-	-
AOI 2 Performer B	Reqn	Various : Various	-	-		-		4.000	Feb 2022	-		4.000	-	-	-
AOI 3 Performer A	Reqn	Various : Various	-	-		-		3.000	Dec 2021	-		3.000	-	-	-
AOI 3 Performer B	Reqn	Various : Various	-	-		-		4.000	Mar 2022	-		4.000	-	-	-
Air Race Partners	RO	Various : Various	-	-		-		5.000	Jun 2022	-		5.000	-	-	-
		Subtotal	-	-		-		37.000		-		37.000	-	-	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Modeling and Analytics Support	MIPR	Various : Various	-	-		-		2.000	Nov 2021	-		2.000	-	-	-
Government Test Support	WR	Various : Various	-	-		-		2.000	Dec 2021	-		2.000	-	-	-
Airworthiness and Test Support	Various	Various : Various	-	-		-		3.000	Nov 2021	-		3.000	-	-	-
		Subtotal	-	-		-		7.000		-		7.000	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Autonomy And Hybrid Stratfi	MIPR	Various : Various	-	-		-		5.000	Dec 2021	-		5.000	-	-	-
Autonomy and Hybrid Stratfi (2)	MIPR	Various : Various	-	-		-		5.000	Feb 2022	-		5.000	-	-	-
		Subtotal	-	-		-		10.000		-		10.000	-	-	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 640858 / *AFWERX Prime*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AFWERX Prime Management PMA	Various	Various : Various	-	-		-		3.467	Dec 2021	-		3.467	-	-	-
		Subtotal	-	-		-		3.467		-		3.467	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.000		57.467		-		57.467	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 640858 / *AFWERX Prime*

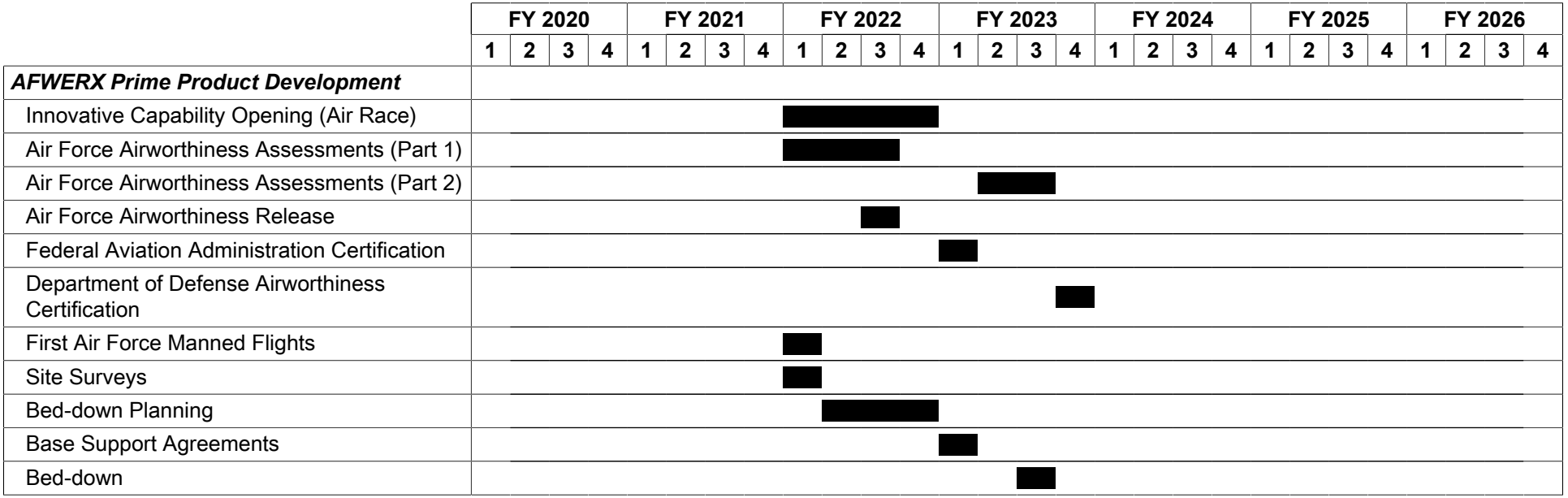

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 640858 / *AFWERX Prime*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
AFWERX Prime Product Development				
Innovative Capability Opening (Air Race)	1	2022	4	2022
Air Force Airworthiness Assessments (Part 1)	1	2022	3	2022
Air Force Airworthiness Assessments (Part 2)	2	2023	3	2023
Air Force Airworthiness Release	3	2022	3	2022
Federal Aviation Administration Certification	1	2023	1	2023
Department of Defense Airworthiness Certification	4	2023	4	2023
First Air Force Manned Flights	1	2022	1	2022
Site Surveys	1	2022	1	2022
Bed-down Planning	2	2022	4	2022
Base Support Agreements	1	2023	1	2023
Bed-down	3	2023	3	2023

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 645350 / *Experimentation*	

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
645350: *Experimentation*	-	194.665	203.772	81.383	0.000	81.383	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Experimentation project funds experimentation campaigns to explore new concepts and their applications in operationally relevant environments and within a system-of-systems warfighting context. Concepts and enabling technologies including but not limited to, autonomy, artificial intelligence, machine learning, directed energy weapons, and joint all-domain operations hold great promise, yet their transition to acquisition programs and fielded capabilities is typically hampered due to uncertainties regarding their military utility and organizational adoption. Experimentation campaigns assess hypotheses that new capabilities will deliver decisive competitive advantage against our adversaries in a dynamic threat environment. These campaigns dramatically shorten the acquisition process by delivering robust information including total life cycle cost estimates, preliminary product support strategy, reliability and maintainability metrics, operational utility assessments and Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities and Policy implications. A key element of the experimentation campaigns is strong stakeholder partnerships and buy-in from Air Force Futures, Air Force Plans and Programs, US Space Force Futures and Integration, Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics, warfighting Major Commands (capability recipients/end users), Space and Missile Systems Center and Air Force Material Command (capability developers) that ensures rapid transition of capabilities when operational utility, affordability, sustainability, and industrial capacity meet the Department of Air Force needs. Experimentation campaigns are centered on an operational level warfighting concept to provide context for assessment, and use wargaming, simulation, demonstrations, and field/flight experimentation to evolve, refine, and validate the warfighting concepts leading to solid, evidence-based materiel and non-materiel capability development approaches with associated recommendations. Experimentation campaigns improve the effectiveness of operations by refining concepts and generating new information to address challenging threats of the future which aids the fielding of advanced technologies by providing the credible evidence needed to make sound strategic decisions and investment choices. Warfighting concepts evolve based on the latest threat assessments and the Experimentation Campaigns are likewise modified to ensure the Department of the Air Force retains a competitive advantage. Experimentation is focused on rapid learning and then pivoting existing or future capability development efforts based on that knowledge to ensure the most pressing operational gaps are addressed and our warfighting advantages are preserved. Further details can be provided in the appropriate forum.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver Tech Transition - Experimentation for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: Experimentation Campaigns	93.124	70.272	81.383
Description: Execution of Experimentation Campaigns to identify the competitive advantages of operational warfighting concepts and the technologies that enable these concepts. Activities may include flight tests, operational exercises, digital engineering, system-of-systems integration facilitated workshops, wargaming, modeling and simulation, and virtual and hardware prototyping to enable experimentation campaigns.			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645350 / *Experimentation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
FY 2021 Plans: Continue the Experimentation Campaigns will focus on evaluating the operational utility and competitive advantages of: targeting-as-a-service to support long range kill chains, layered base defense including kinetic and directed energy weapon systems that provide defense for forward deployed bases against adversary attack, alternate Position, Navigation, and Timing systems that are capable of functioning in GPS-denied environments, Autonomous, Attritable, Aircraft employed in mass against adversaries that exploit the warfighting advantages of Artificial Intelligence on the battlefield, rapidly reprogrammable Electronic Warfare Systems to rapidly and reliably deploy software-based Electronic Warfare applications, Networked, Collaborative, Autonomous Weapons to determine the operational advantages of networks, communication links and autonomy on inventory and future weapon platforms, and a counter-Artificial Intelligence experimentation effort that seeks to inject data and misinformation to outpace our Adversary's Artificial Intelligence by taking advantage of Artificial Intelligence error, biases, and inability to adapt and understand novelty. Smaller experimentation campaigns will also be executed based on warfighting concepts that emerge from Air University Chief of Staff of the Air Force sponsored Blue Horizon's program "How might we further dissolve 'seams' both within the Department of the Air Force and between the Air and Space Forces and their key partners - Joint teammates, allies & partners, Office of the Secretary of Defense, Congress, and industry". All experimentation campaigns have strong stakeholder partnership. These experimentation campaign focus areas align directly with Secretary of the Air Force and National Defense Strategy priorities. Experimentation campaigns will generate information on competitive advantage, total life cycle cost of the acquiring the capability, reliability and maintainability, and product support strategy.			
FY 2022 Plans: Continue experimentation campaigns to advance multi-domain operations and seek competitive advantages against our adversaries, as directed by Department of the Air Force Leadership. In FY 2022 Autonomous, Attritable Aircraft will be flown alongside operational aircraft (F-15, F-16, F-35, etc.) as part of several operational flight tests and AF exercises while the Base Defense Campaign will complete an operational experimentation effort targeting, tracking, engaging, and ultimately killing incoming live cruise missiles with a mix of existing short, medium, and long-range munitions. Software-based Electronic Warfare will be remotely deployed on operational platforms to provide 4th generation fighters the most advanced and unpredictable Electronic Warfare capability denying the adversaries ability to counter our electronic attack. Network, Collaborative, Autonomous Weapons will utilize current weapon systems and test surrogates (to reduce costs) as part of operational exercises to improve lethality and precision while reducing the number of salvos required per target. Counter-Artificial Intelligence experiments will leverage work from the intelligence communities and focus on how adversaries employ artificial intelligence algorithms and specific mechanisms to counter those applications introducing false truths and uncertainties. Additional Experimentation campaigns such as Agile Combat Employment operations that enable forward deployed operations to be quickly and effectively established and an MC-130J Amphibious Capability that will penetrate adversary air defenses and quickly deploy assets will be identified based on outcomes of the warfighting concept analysis. Smaller experimentation campaigns will be let as identified to address the strategic dilemma posed at Air University's Chief of Staff of the Air Force sponsored Blue Horizons program. Only those Experimentation efforts that are deemed the absolute highest priority by the Department of the Air Force Leadership will			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645350 / *Experimentation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
be executed aiming to seek technologies and processes that will have the largest competitive advantages and provide the most significant dilemmas against our adversaries will be investigated or executed. Data from all efforts is provided directly to AF Futures, Secretary of the Air Force for Acquisition, Technology and Logistics, and US Space Force Futures and Integration to drive capability development decisions and inform warfighting concepts. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** FY 2022 funding increased compared to FY 2021 by $11.111 million. Funding increased due to increased requirements for Base Defense experiment and Network Collaborative Autonomous Weapon experiment.			
Accomplishments/Planned Programs Subtotals	93.124	70.272	81.383

	FY 2020	FY 2021
Congressional Add: Program Increase - Low Cost Attritable Aircraft Technology ***FY 2020 Accomplishments:*** Conduct Congressionally-directed efforts ***FY 2021 Plans:*** Conduct Congressionally-directed efforts	96.706	50.000
Congressional Add: Program increase - small business research for rocket technology ***FY 2020 Accomplishments:*** N/A ***FY 2021 Plans:*** Conduct Congressionally-directed efforts (realigned to PE 0602203F, Aerospace Propulsion)	0.000	2.500
Congressional Add: Program Increase - Directed Energy Experimentation ***FY 2020 Accomplishments:*** Conduct Congressionally-directed efforts ***FY 2021 Plans:*** N/A	4.835	0.000
Congressional Add: Program Increase - Autonomous Air Combat Operations ***FY 2020 Accomplishments:*** N/A ***FY 2021 Plans:*** Conduct Congressionally-directed efforts	0.000	5.000
Congressional Add: Program Increase - Cold Spray and Directed Energy Deposition ***FY 2020 Accomplishments:*** N/A ***FY 2021 Plans:*** Conduct Congressionally-directed efforts (realigned to R-56A, PE 0708051F, Rapid Sustainment Modernization)	0.000	6.000
Congressional Add: Program Increase - Arctic Communications	0.000	50.000

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645350 / *Experimentation*

	FY 2020	FY 2021
FY 2020 Accomplishments: N/A ***FY 2021 Plans:*** Conduct Congressionally-directed efforts (executed in project 645351 / Prototyping)		
Congressional Add: Program Increase - Massive Area Additive Manufacturing ***FY 2020 Accomplishments:*** N/A ***FY 2021 Plans:*** Conduct Congressionally-directed efforts (realigned to R-56A, PE 0708051F, Rapid Sustainment Modernization)	0.000	10.000
Congressional Add: Program Increase - Additive Manufacturing for Metals ***FY 2020 Accomplishments:*** N/A ***FY 2021 Plans:*** Conduct Congressionally-directed efforts (realigned to R-33, PE 0603680F, Manufacturing Technology Program)	0.000	10.000
Congressional Adds Subtotals	101.541	133.500

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Experimentation campaigns will aid the advancement and transition of advanced technologies by providing the credible evidence decision makers need to make sound strategic decisions and investment choices, to provide the warfighter with advanced capabilities. Air Force Futures, Air Force Plans and Programs, US Space Force Futures and Integration, and the Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics direct experimentation campaigns. The Air Force Strategic Development Planning and Experimentation (SDPE) Office located at Wright-Patterson Air Force Base, Ohio and Eglin Air Force Base manages and executes each experimentation campaign. Contracting strategies vary based on the activities of each campaign.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 645350 / *Experimentation*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Experimentation Campaigns	C/Various	Various : Various	-	6.640	Mar 2020	-		-		-		-	-	-	-
Experimentation Campaign: Hawkeye Contract 1	C/CPFF	L3 : Salt Lake City, UT	-	5.500	Apr 2020	-		-		-		-	-	-	-
Experimentation Campaign: Hawkeye Contract 2	C/CPFF	Lockheed : Fort Worth, TX	-	1.900	Mar 2020	0.700	Feb 2021	-		-		-	-	-	-
Experimentation Campaign: Hawkeye Contract 3	C/CPFF	Northrop Grumman : San Diego, CA	-	1.100	Mar 2020	-		-		-		-	-	-	-
Experimentation Campaign: Directed Energy	C/Various	Various : Various	-	3.500	Apr 2020	-		-		-		-	-	-	-
Experimentation: Campaign: Hawkeye Contract 4	C/CPFF	Space X : Hawthorne, CA	-	4.980	Mar 2020	7.000	Jun 2021	-		-		-	-	-	-
Experimentation Campaign: Advanced Attritable Aircraft	Various	Various : Various	-	4.120	Mar 2020	2.950	Jan 2022	6.000	Jan 2022	-		6.000	-	-	-
Experimentation Campaign Hawkeye Contract 5	C/CPFF	Raytheon : McKinney,, TX	-	-		5.000	Feb 2021	-		-		-	-	-	-
Experimentation Campaign: Hawkeye Contract 5	C/CPFF	Ball Aerospace : Boulder, CO	-	4.500	Aug 2020	-		-		-		-	-	-	-
Experimentation Campaign Hawkeye Contract 6	Various	Various : Various	-	2.250	May 2020	2.000	Jun 2021	-		-		-	-	-	-
Experimentation Campaign Advanced Attritable Aircraft	C/CPFF	Lockheed : Palmdale, CA	-	1.600	Sep 2020	4.100	Mar 2021	-		-		-	-	-	-
Experimentation Campaign Advanced Attritable Aircraft Contract 2	C/CPFF	Kratos : Colorado Springs, CO	-	5.900	Sep 2020	3.200	Feb 2021	-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 645350 / *Experimentation*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Experimentation Campaign Advanced Attritable Aircraft Contract 3	C/CPFF	Calspan : Buffalo, NY	-	-		4.800	Jun 2021	-		-		-	-	-	-
Experimentation Campaigns Blue Horizons	Various	Various : Various	-	-		3.243	Feb 2021	2.750	Jan 2022	-		2.750	-	-	-
Experimentation Campaign Base Defense Contract	C/CPFF	Raytheon : Tucson, AZ	-	1.900	May 2020	3.000	May 2021	-		-		-	-	-	-
Experimentation Campaign Base Defense Contract 2	C/CPFF	BAE : TBD	-	2.300	Oct 2020	2.200	Jul 2021	-		-		-	-	-	-
Experimentation Campaign PNT	C/CPFF	Various : Various	-	0.560	May 2020	0.630	Apr 2021	-		-		-	-	-	-
Experimentation Campaign Palletized Munitions (contract 2)	C/CPFF	Various : Various	-	0.120	Mar 2020	-		-		-		-	-	-	-
Experimentation Campaign Palletized Munitions	C/CPFF	Lockheed Martin : Orlando, FL	-	4.400	Jul 2020	-		-		-		-	-	-	-
Experimentation Campaign Base Defense Contract TBD	TBD	TBD : TBD	-	-		-		10.000	Jan 2022	-		10.000	-	-	-
Experimentation Campaign AERRES	TBD	Various : Various	-	3.240	Aug 2020	3.490	Mar 2021	4.000	Jan 2022	-		4.000	-	-	-
Experimentation Campaign Counter AI	TBD	TBD : TBD	-	-		-		3.000	Dec 2021	-		3.000	-	-	-
Experimentation Campaign Agile Combat Employment Pathfinders	TBD	TBD : TBD	-	-		-		2.000	Jan 2022	-		2.000	-	-	-
Experimentation Campaign MC130J Amphibious Capability	TBD	TBD : TBD	-	-		-		2.000	Feb 2022	-		2.000	-	-	-
Congressional Add - Directed Energy Experimentation	Various	Various : Various	-	4.800	Apr 2020	-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 645350 / *Experimentation*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Congressional Add - Low Cost Attritable Aircraft Technology	C/Various	Various : Various	-	96.706	Jul 2020	50.000	Aug 2021	-		-		-	-	-	-
Congressional Add - Autonomous Air Combat Operations	Various	Various : Various	-	-		5.000	Jun 2021	-		-		-	-	-	-
Congressional Add - Arctic Communications (executed in project 645351 / Prototyping)	Various	Various : Various	-	-		50.000	Apr 2021	-		-		-	-	-	-
Congressional Add - Small Business Research for Rocket Technology (executed in PE 0602203F/Aerospace Propulsion)	Various	Various : Various	-	-		2.500	Sep 2021	-		-		-	-	-	-
Congressional Add - Cold Spray and Directed Energy Deposition (executed in PE 0708051F, Rapid Sustainment Modernization)	Various	Various : Various	-	-		6.000	Jul 2021	-		-		-	-	-	-
Congressional Add - Massive Area Additive Manufacturing (executed in PE 0603680F, Manufacturing Technology Program)	Various	Various : Various	-	-		10.000	Aug 2021	-		-		-	-	-	-
Congressional Add - Additive Manufacturing for Metals (executed in PE 0708051F, Rapid Sustainment Modernization)	Various	Various : Various	-	-		10.000	Aug 2021	-		-		-	-	-	-
Commercial Space Internet Prototyping:	C/CPAF	Space X : Hawthorne	-	9.000	Mar 2020	7.400	Mar 2021	-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 645350 / *Experimentation*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Global Lightning Contract 2															
Commercial Space Internet Prototyping: Global Lightning Contract 4	C/CPAF	Northrop Grumman : San Diego, CA	-	5.424	Mar 2020	-		-		-		-	-	-	-
		Subtotal	-	170.440		183.213		29.750		-		29.750	-	-	N/A

Remarks

Experimentation is focused on rapid learning and then pivoting based on that learning. Therefore, specific plans are not detailed to prevent locking into an approach that will likely shift based on current experimentation efforts. Further budget details can be provided in the appropriate forum.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Experimentation Campaign Support	Various	Various : Various	-	1.110	Jan 2020	0.731	Mar 2021	2.000	Mar 2022	-		2.000	-	-	-
Experimentation Campaign: Directed Energy Modeling and Simulation Support, Data Analysis and Vignette Support	MIPR	AFRL : WPAFB, OH	-	2.500	Jan 2020	-		-		-		-	-	-	-
Experimentation Campaign Advanced Atritable Aircraft	MIPR	Perduco/GSA : O'Fallon, IL	-	1.000	Feb 2020	2.100	May 2021	6.000	Nov 2021	-		6.000	-	-	-
Experimentation Campaign PNT	MIPR	DTIC : Ft Belvoir, VA	-	1.200	Jul 2020	-		-		-		-	-	-	-
Experimentation Campaign Base Defense	MIPR	Various : Various	-	3.850	May 2020	-		5.000	Nov 2021	-		5.000	-	-	-
Experimentation Campaign NCA Weapons	Various	Various : TBD	-	-		-		1.000	Feb 2022	-		1.000	-	-	-
		Subtotal	-	9.660		2.831		14.000		-		14.000	-	-	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 645350 / *Experimentation*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Experimentation Campaign Test and Evaluation	MIPR	Various : Various	-	1.527	Feb 2020	2.350	Mar 2021	0.750	Dec 2021	-		0.750	-	-	-
Directed Energy Experimentation Campaign	MIPR	96thTW : Eglin, NM	-	4.520	Sep 2020	-		-		-		-	-	-	-
Experimentation Campaign Hawkeye	Various	Various : Various	-	1.500	Aug 2020	1.500	May 2021	-		-		-	-	-	-
Experimentation Campaign Advanced Attritable Aircraft	MIPR	Various : Eglin AFB, FL	-	0.750	Mar 2020	1.150	Jun 2021	12.000	Apr 2022	-		12.000	-	-	-
Experimentation Campaign AERRES	MIPR	Various : Various	-	-		1.970	Jun 2021	1.000	Dec 2021	-		1.000	-	-	-
Experimentation Campaign Base Defense	MIPR	Various : Various	-	1.600	Apr 2020	3.569	Mar 2021	12.000	Dec 2021	-		12.000	-	-	-
Experimentation Campaign Palletized Munitions	MIPR	96TW : Eglin AFB, FL	-	0.940	Feb 2020	-		-		-		-	-	-	-
Experimentation Campaign Agile Combat Employment Pathfinders	TBD	TBD : TBD	-	-		-		1.000	Feb 2022	-		1.000	-	-	-
Experimentation Campaign NCA Weapons	TBD	TBD : TBD	-	-		-		5.000	Jan 2022	-		5.000	-	-	-
Experimentation Campaign Counter AI	Various	Various : Various	-	-		-		1.000		-		1.000	-	-	-
		Subtotal	-	10.837		10.539		32.750		-		32.750	-	-	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Experimentation Campaign Contractor Support	Various	Various : Various	-	1.190	Mar 2020	0.197	Mar 2021	0.143	Dec 2021	-		0.143	-	-	-
Experimentation Campaign Program Management Administration Costs	Various	Various : Various	-	2.538	Aug 2020	6.992	Feb 2021	4.740	Jan 2022	-		4.740	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 645350 / *Experimentation*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	3.728		7.189		4.883		-		4.883	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	194.665		203.772		81.383		-		81.383	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645350 / *Experimentation*

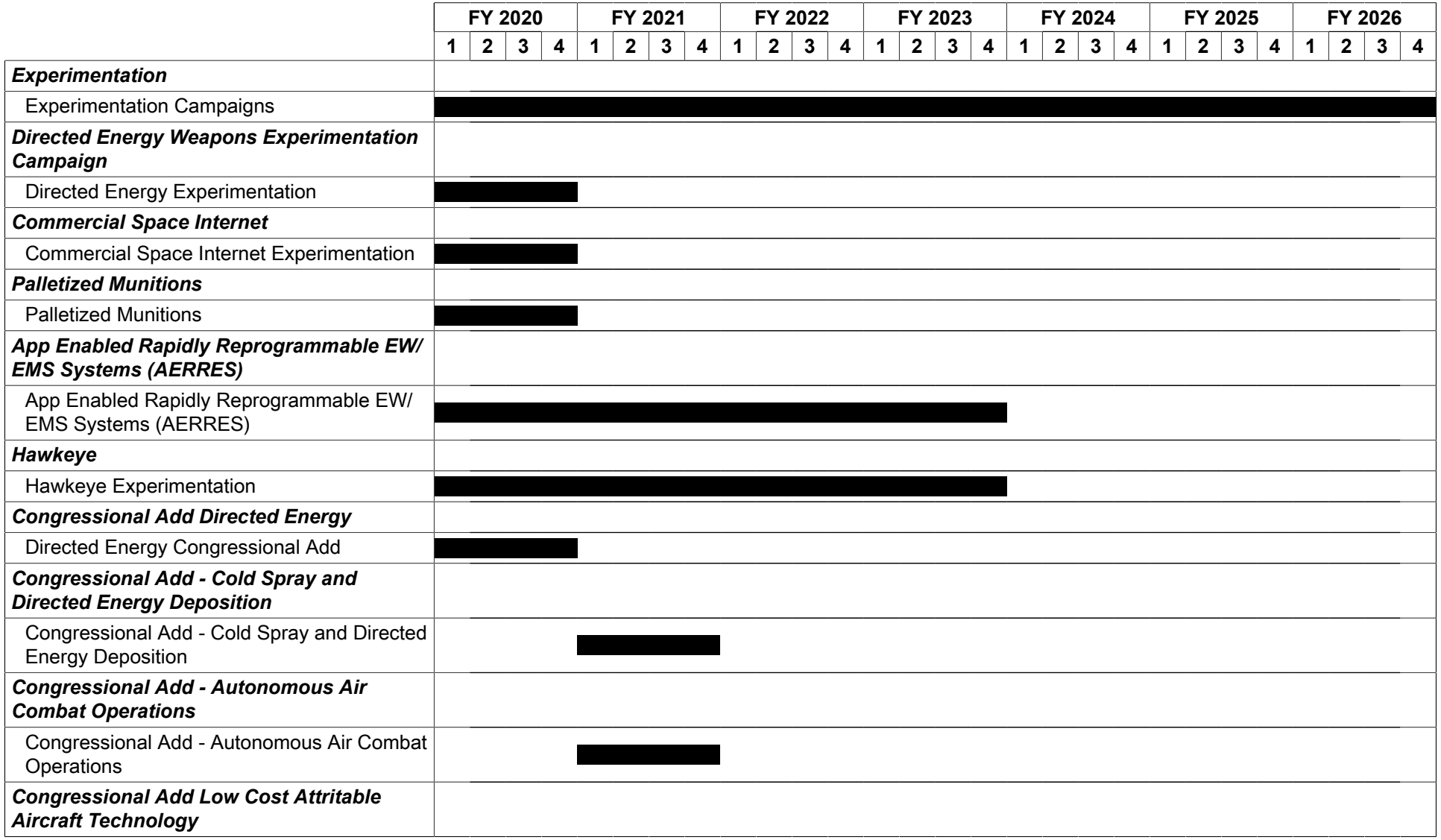

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645350 / *Experimentation*

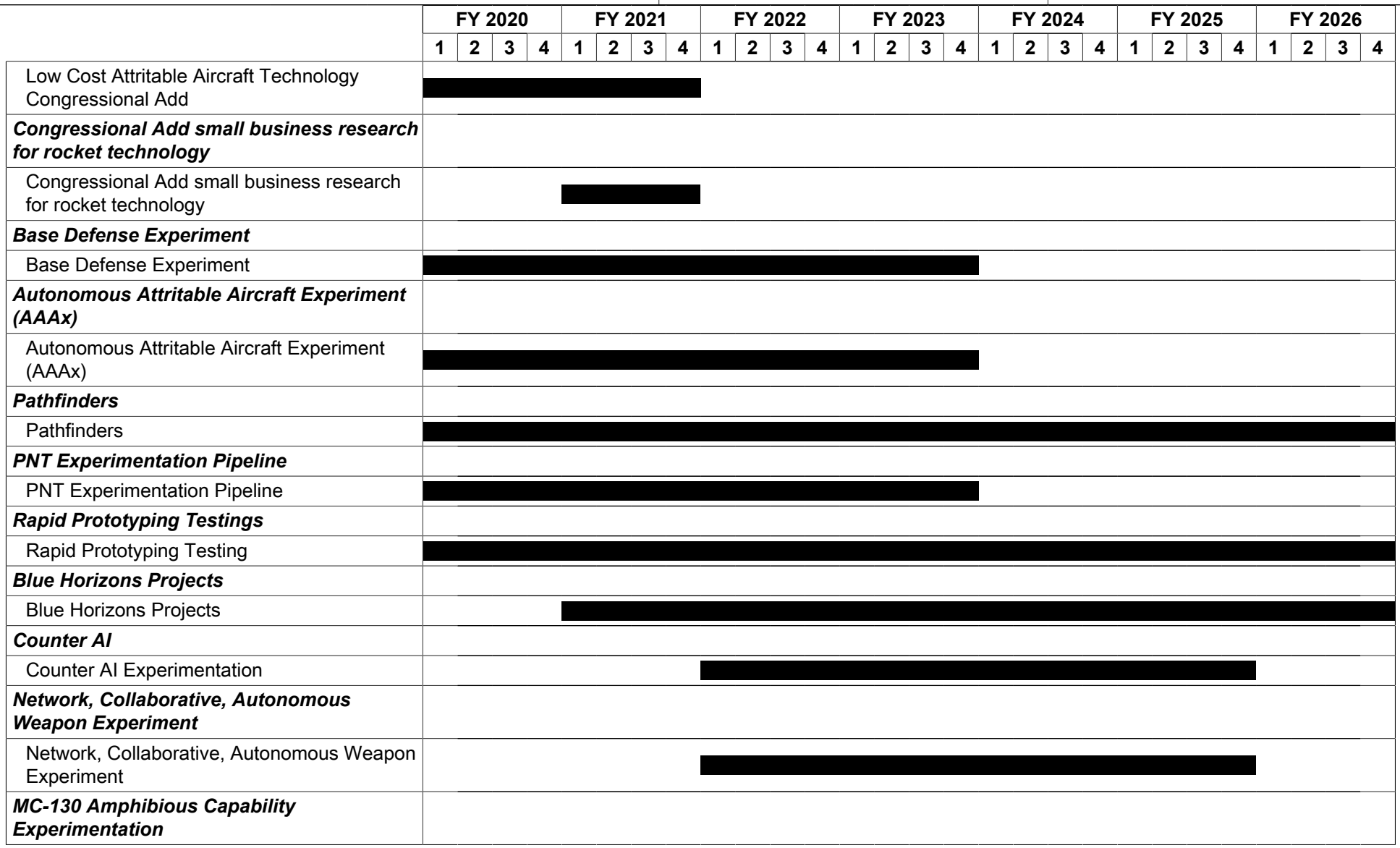

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645350 / *Experimentation*

	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MC-130 Amphibious Capability Experimentation									[redacted]																			

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645350 / *Experimentation*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Experimentation				
Experimentation Campaigns	1	2020	4	2026
Directed Energy Weapons Experimentation Campaign				
Directed Energy Experimentation	1	2020	4	2020
Commercial Space Internet				
Commercial Space Internet Experimentation	1	2020	4	2020
Palletized Munitions				
Palletized Munitions	1	2020	4	2020
App Enabled Rapidly Reprogrammable EW/EMS Systems (AERRES)				
App Enabled Rapidly Reprogrammable EW/EMS Systems (AERRES)	1	2020	4	2023
Hawkeye				
Hawkeye Experimentation	1	2020	4	2023
Congressional Add Directed Energy				
Directed Energy Congressional Add	1	2020	4	2020
Congressional Add - Cold Spray and Directed Energy Deposition				
Congressional Add - Cold Spray and Directed Energy Deposition	1	2021	4	2021
Congressional Add - Autonomous Air Combat Operations				
Congressional Add - Autonomous Air Combat Operations	1	2021	4	2021
Congressional Add Low Cost Attritable Aircraft Technology				
Low Cost Attritable Aircraft Technology Congressional Add	1	2020	4	2021
Congressional Add small business research for rocket technology				
Congressional Add small business research for rocket technology	1	2021	4	2021
Base Defense Experiment				

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645350 / *Experimentation*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Base Defense Experiment	1	2020	4	2023
Autonomous Attritable Aircraft Experiment (AAAx)				
Autonomous Attritable Aircraft Experiment (AAAx)	1	2020	4	2023
Pathfinders				
Pathfinders	1	2020	4	2026
PNT Experimentation Pipeline				
PNT Experimentation Pipeline	1	2020	4	2023
Rapid Prototyping Testings				
Rapid Prototyping Testing	1	2020	4	2026
Blue Horizons Projects				
Blue Horizons Projects	1	2021	4	2026
Counter AI				
Counter AI Experimentation	1	2022	4	2025
Network, Collaborative, Autonomous Weapon Experiment				
Network, Collaborative, Autonomous Weapon Experiment	1	2022	4	2025
MC-130 Amphibious Capability Experimentation				
MC-130 Amphibious Capability Experimentation	1	2022	4	2024

Note

Experimentation is focused on rapid learning and then pivoting based on that learning. They are used to determine the competitive advantage a technology or warfighting concept can have over our adversaries and ascertain operational utility. Often Experimentation Campaigns uncover new ways to use existing technology or how to exploit new Science and Technology for our competitive gain. Further schedule details regarding individual experimentation campaigns can be provided in the appropriate forum.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 645351 / *Prototyping*	

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
645351: *Prototyping*	-	128.128	102.171	204.695	0.000	204.695	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Prototyping project enables integration and demonstration of emerging technologies in an operational environment in order to determine and evaluate the completive advantage against our adversaries and how the technology is integrated into the future fight. Prototype project investments focus on three major thrusts (1) advancing capabilities of legacy weapon systems, (2) militarizing novel mature commercial technologies, and (3) exploring partnerships with Department of the Air Force Program Executive Officers to rapidly transition technologies that are being developed as part of the Department of Air Force Vanguard programs. Prototype project investments funded under the advancing capabilities of legacy weapon systems thrust focus on integrating commercial proliferated Low Earth Orbit satellite capabilities into legacy weapon systems, directed energy and kinetic energy effectors for base defense, multi-source resilient Position Navigation and Timing pod, and software defined electronic warfare and communication capabilities. Prototype projects under the militarizing novel mature commercial technologies thrust will focus on artificial intelligence, autonomy, cyber warfare capabilities, digital engineering and novel weapon and aircraft technologies. Finally, prototype projects under the exploring partnerships thrust will invest in risk reduction activities in partnership with the Department of the Air Force Program Executive Officers assigned to each of the Department of the Air Force Vanguard Programs to ensure rapid and seamless transition of Science and Technology into warfighting capabilities.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver Tech Transition - Prototyping for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: Lifecycle Prototyping	56.621	78.421	204.695
Description: Following the direction described in the National Defense Strategy the Strategic Development Planning and Experimentation Office (SDPE) leads cross-functional teams composed of operators, technologists, engineers, acquisition, and requirements personnel from across the Department of the Air Force to execute Campaigns that consist of war-winning Prototypes to determine if and how much of a competitive advantage can be leveraged against our adversaries. Developmental Prototypes are an opportunity to understand the operational utility of a new warfighting concept or technology, while avoiding the pitfalls of entering into a lengthy, formal acquisition program without the requisite knowledge of performance trade-offs and technical and programmatic risks. Prototypes integrated into carefully crafted operational Campaigns provide immediate feedback to Department of the Air Force senior leaders driving rapid acquisition or divestment with very minimal resources. Prototype efforts provide an initial capability if warranted that can act as a catalyst for future rapid acquisition. Exploring innovative prototypes that range across the full Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities and Policy			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645351 / *Prototyping*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022

spectrum gives Department of the Air Force senior leaders a quicker understanding of the operational utility, leading to better decisions on what to pursue with limited acquisition resources.

FY 2021 Plans:

Continue space internet prototype effort to enable connectivity to emerging commercial Low-Earth Orbit based broadband internet delivering Giga-byte/second class data rates and low latency to support operational missions across multiple Air and Space Force platforms. In FY21 integration and operational flight test will focus on the AC-130 and KC-135 platforms along with a feasibility and operational utility assessment for 5th Gen fighters. For Base defense, a Hypervelocity Gun Weapon System (System) will be rapidly built and integrated with existing operational command and control systems for defense in forward deployed air operations. The system will take advantage of dramatically more affordable rounds to more effectively engage a variety of incoming threats. Designing, building, and flight testing a palletized munitions concept that transforms traditional airlift platforms into lethal long range strike platform culminating in a live fire of a JASSM-ER munition from a C-130. This will be the first ever prototype system that will be capable of targeting and retargeting if needed, launching, and engaging a target with a long-range cruise missile launched from a pallet in mass from a cargo aircraft. Lastly an amphibious MC-130 prototype will be designed that will enable a strategic, flexible operation to deploy covert capabilities near adversary defenses.

FY 2022 Plans:

Completion and transition of space internet (global lightning) prototyping efforts to existing programs of record to enable Giga-byte/second class data rates and low latency across multiple platforms. In FY22 final integration and flight testing will occur on 5th Gen fighters and long range bomber platforms. Upon completion of the final design and integration into operational command and control systems the Hypervelocity Gun Weapon System will be tested against long-range cruise missile threats. Assessment of system sustainment and maintainability in austere conditions will also be evaluated. The palletized munitions prototype will continue to conduct live fire testing of JASSM-ER cruise missiles from a C-17 and additional flight testing will investigate mixed munition payloads deployed in mass (up to 36 munitions per aircraft) utilizing operational cargo aircraft (C-17 and C-130). Field initial prototype Attritable Autonomous Aircraft prototypes integrating them into existing standards and operations while assessing sensors and platforms in an operational airborne environment. Build initial prototype and field emerging alternate Position, Navigation, and Timing (PNT) systems in both space (NTS-3) and Airborne (Podded PNT) platforms. Explore prototype solutions for Networked, Collaborative, Autonomous munitions that can be integrated into broad and local AF networks. Demonstrated and understand that operational utility of swarming munitions against adversary targets to define the operational efficiencies (improved lethality, survivability, and/or affordability). Improve operational efficiency for aircraft and logistics systems through focused prototyping. Additional prototyping activities for emerging technologies may be conducted in support of the Air Force Futures warfighting campaigns to inform future Department of the Air Force warfighting strategies and concepts.

FY 2021 to FY 2022 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645351 / *Prototyping*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
FY 2022 funding increased compared to FY 2021 by $126.274 million. Funding increased due to increased requirements for system prototyping including Base Defense, Palletized Munitions, Operational Energy efforts, Regional Operating Picture, and Watchtower Initiatives.			
Accomplishments/Planned Programs Subtotals	56.621	78.421	204.695

	FY 2020	FY 2021
Congressional Add: Program Increase - Rapid Sustainment Office ***FY 2020 Accomplishments:*** Conduct Congressionally-directed efforts ***FY 2021 Plans:*** N/A	19.341	0.000
Congressional Add: Program Increase - Reliable Power for Critical Infrastructure ***FY 2020 Accomplishments:*** Conduct Congressionally-directed efforts ***FY 2021 Plans:*** N/A	5.802	0.000
Congressional Add: Program Increase - Agility Prime ***FY 2020 Accomplishments:*** Conduct Congressional - directed efforts ***FY 2021 Plans:*** n/a	24.122	0.000
Congressional Add: Program Increase - Logistics Technologies ***FY 2020 Accomplishments:*** Conduct Congressionally-directed efforts ***FY 2021 Plans:*** Conduct Congressionally-directed efforts	4.835	8.750
Congressional Add: Program Increase - Small Satellite Manufacturing ***FY 2020 Accomplishments:*** Conduct Congressionally-directed efforts ***FY 2021 Plans:*** N/A	7.736	0.000
Congressional Add: Program Increase - Additive Manufacturing ***FY 2020 Accomplishments:*** Conduct Congressionally-directed efforts ***FY 2021 Plans:*** N/A	9.671	0.000
Congressional Add: Program Increase - Heavy Payload Solar Powered UAS JCTC	0.000	15.000

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645351 / *Prototyping*

	FY 2020	FY 2021
FY 2020 Accomplishments: n/a ***FY 2021 Plans:*** Conduct Congressionally-directed efforts		
Congressional Adds Subtotals	71.507	23.750

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

For Spectral Halo, the Air Force awarded to existing cost plus type contracts with Herrick Technology Laboratories, Inc (MD), Northeast Information Discovery, Inc (NY), Advanced Geolocation Solutions, Inc (VA), and MITRE (MA).

For Low Cost Attritable Aircraft Technology, the Air Force leveraged the Defense Innovation Unit Experimental Other Transaction Authority to award a Firm Fixed Price Contract to the following contractors: Lockheed Martin, Aurora, Autonodyne, Venator, and Fregata.

Acquisition strategies for other prototypes from Congressional adds and OCO funding vary based on the activities of each prototype.

Miscellaneous emerging prototyping will be based on guidance from Department leadership.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645351 / *Prototyping*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Spectral Halo Pod: Rapid Prototype of Aircraft Stores	C/CPFF	Various : Various	-	12.170	Mar 2020	-		-		-		-	-	-	-
Spectral Halo Pod: Rapid Prototyping of UAV Payloads	C/CPFF	Various : Various	-	3.880	Oct 2019	-		-		-		-	-	-	-
Vanguard Prototyping	Various	Various : Various	-	-		1.860	Mar 2021	-		-		-	-	-	-
Commercial Space Internet Prototyping - Global Lightning Contract 1	C/CPFF	Raytheon : McKnney, TX	-	-		8.000	Mar 2021	-		-		-	-	-	-
Commercial Space Internet Prototyping: Global Lightning Contract 3	C/CPFF	Various : Various	-	-		4.090	Mar 2021	20.000	Nov 2021	-		20.000	-	-	-
Commercial Space Internet Prototyping: Global Lightning Contract 4	C/CPAF	Northrop Grumman : San Diego, CA	-	-		5.500	Apr 2021	-		-		-	-	-	-
Commercial Space Internet Prototyping: Global Lightning Contract 5	C/CPFF	L3 : Salt Lake City, UT	-	2.172	Jul 2020	4.000	Apr 2021	-		-		-	-	-	-
Commercial Space Internet Prototyping - Global Lightning Contract 6	C/CPFF	Ball Aerospace : Boulder, CO	-	-		5.300	Mar 2021	-		-		-	-	-	-
Prototyping Base Defense Contract 1	C/CPFF	BAE : Minneapolis, MN	-	-		10.600	May 2021	-		-		-	-	-	-
Hawkeye	C/CPFF	Various : Various	-	-		-		10.000	Nov 2021	-		10.000	-	-	-
Prototyping Base Defense	Various	Various : Various	-	-		6.000	Mar 2021	9.000	Dec 2021	-		9.000	-	-	-
Prototyping Palletized Munitions (Rapid Dragon)	C/CPFF	Lockheed Martin : Orlando, FL	-	-		15.000	May 2021	-		-		-	-	-	-
Prototyping Palletized Munitions (Rapid Dragon) Contract 2	C/Various	Various : Various	-	-		5.300	Mar 2021	9.695	Nov 2021	-		9.695	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force		Date: May 2021
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ROP Watchtower	Various	Various : Various	-	-		-		18.000	Jan 2022	-		18.000	-	-	-
MC-130J Amphibious Capability	Various	Various : Various	-	-		-		2.000	Mar 2022	-		2.000	-	-	-
C-17 Microvanes	Various	Various : Various	-	-		-		3.000	Dec 2021	-		3.000	-	-	-
KC-135 Vertical Wipers	Various	Various : Various	-	-		-		2.000	Dec 2021	-		2.000	-	-	-
KC-135 Drag Reduction	Various	Various : Various	-	-		-		4.000	Dec 2021	-		4.000	-	-	-
Mobility Air Forces Allocation/Long Range Planning	Various	Various : Various	-	-		-		6.000	Dec 2021	-		6.000	-	-	-
Puckboard Scheduling Engine	Various	Various : Various	-	-		-		6.000	Dec 2021	-		6.000	-	-	-
Cargo Optimization - Improved Load Planning	Various	Various : Various	-	-		-		6.000	Dec 2021	-		6.000	-	-	-
Mobility Air Forces Flight Control Surface Rigging	Various	Various : Various	-	-		-		2.000	Dec 2021	-		2.000	-	-	-
C-130 Finlets	Various	Various : Various	-	-		-		3.000	Dec 2021	-		3.000	-	-	-
C-17 Engine Pylon Fairings	Various	Various : Various	-	-		-		1.500	Dec 2021	-		1.500	-	-	-
Podded Position Navigation and Timing Prototyping	Various	Various : Various	-	-		-		5.000	Dec 2021	-		5.000	-	-	-
Navigation Technology Satellite - 3, Prototyping	Various	Various : Various	-	-		-		5.000	Dec 2021	-		5.000	-	-	-
Congressional Add Rapid Sustainment Office	Various	Various : Various	-	19.341	Oct 2020	-		-		-		-	-	-	-
Congressional Add Reliable Power for Critical Infrastructure	Various	Various : Various	-	5.802	Nov 2020	-		-		-		-	-	-	-
Congressional Add Logistics Technologies	Various	Various : Various	-	4.835	Dec 2020	8.750	Dec 2021	-		-		-	-	-	-
Congressional Add Small Satellite Manufacturing	Various	Various : Various	-	7.736	Dec 2020	-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645351 / *Prototyping*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Congressional Add Additive Manufacturing	Various	Various : Various	-	9.671	Sep 2020	-		-		-		-	-	-	-
Congressional Add Heavy Payload Solar Powered UAS JCTD	Various	Various : Various	-	-		15.000	Aug 2021	-		-		-	-	-	-
Congressional Add Agility Prime	Various	Various : Various	-	24.122	Jan 2021	-		-		-		-	-	-	-
Mobile Counter-UAS Airborne Payload Suite OCO	C/TBD	TBD : TBD	-	7.488	Jun 2020	-		-		-		-	-	-	-
Integrated Expeditionary Counter-Unmanned Aerial System OCO	C/TBD	TBD : TBD	-	1.966	Jun 2020	-		-		-		-	-	-	-
Persistent Overhead Surveillance/ Reconnaissance for Special Operations OCO	C/TBD	TBD : TBD	-	9.929	Jun 2020	-		-		-		-	-	-	-
Overhead Surveillance/ Reconnaissance for Special Operations OCO	C/TBD	TBD : TBD	-	5.395	Jun 2020	-		-		-		-	-	-	-
Instant Fuel Leak Repair OCO	C/CPFF	University of Dayton : Dayton	-	0.723	Apr 2020	-		-		-		-	-	-	-
		Subtotal	-	115.230		89.400		112.195		-		112.195	-	-	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Spectral Halo Pod: Rapid Prototyping of Aircraft Stores Support	MIPR	AFRL : Bedford, MA	-	1.155	Feb 2020	-		-		-		-	-	-	-
Spectral Halo Pod: Rapid Prototyping of UAV Payloads Support	C/Various	AFRL : Rome, NY	-	2.409	Feb 2020	-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604858F / *Tech Transition Program*	Project (Number/Name) 645351 / *Prototyping*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Global Lightning/ Commercial Space Support	MIPR	RAND : Santa Monica, CA	-	0.674	Feb 2020	-		3.000	Dec 2021	-		3.000	-	-	-
Prototyping Campaign FloatPlane MC130J Amphibious Capability	MIPR	WHS : Washington, DC	-	-		3.500	May 2021	-		-		-	-	-	-
Hawkeye	Various	Various : Various	-	-		-		4.000	Dec 2021	-		4.000	-	-	-
Base Defense Support	Various	Various : Various	-	-		-		5.000	Nov 2021	-		5.000	-	-	-
Rapid Dragon (Palletized Munitions)	Various	Various : Various	-	-		0.250	Mar 2021	4.000	Nov 2021	-		4.000	-	-	-
Autonomous Attritable Aircraft	Various	Various : Various	-	-		-		2.000	Feb 2022	-		2.000	-	-	-
Network, Collaborative, Autonomous Weapons	Various	Various : Various	-	-		-		1.000	Feb 2022	-		1.000	-	-	-
MC-130J Amphibious Capability	Various	Various : Various	-	-		-		1.000	Dec 2021	-		1.000	-	-	-
ROP Watchtower	Various	Various : Various	-	-		-		2.000	Apr 2022	-		2.000	-	-	-
Podded Position Navigation and Timing Prototyping	Various	Various : Various	-	-		-		1.000	Dec 2021	-		1.000	-	-	-
		Subtotal	-	4.238		3.750		23.000		-		23.000	-	-	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Spectral Halo Pod: Rapid Prototyping of Aircraft Stores Support	MIPR	AFRL : Patuxent River, MD	-	0.192	Feb 2020	-		-		-		-	-	-	-
Spectral Halo Pod: Rapid Prototyping of UAF Payloads Support	Various	Various : Various	-	4.817	Mar 2020	-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645351 / *Prototyping*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Global Lightning/ Commercial Space Internet	MIPR	Various : Various	-	1.876	Mar 2020	1.750	Apr 2021	5.000	Dec 2021	-		5.000	-	-	-
Rapid Dragon (Palletized Munitions)	MIPR	Various : Various	-	-		1.440	May 2021	10.000	Dec 2021	-		10.000	-	-	-
Vanguard Test and Evaluation	MIPR	Various : Various	-	-		2.190	Apr 2021	13.000	Feb 2022	-		13.000	-	-	-
Hawkeye Test and Evaluation	MIPR	Various : Various	-	-		-		9.000	Dec 2021	-		9.000	-	-	-
Base Defense Test and Evaluation	MIPR	Various : Various	-	-		-		8.000	Nov 2021	-		8.000	-	-	-
Network, Collaborative, Autonomous Weapons	MIPR	Various : Various	-	-		-		7.000	Apr 2022	-		7.000	-	-	-
MC-130J Amphibious Capability	MIPR	Various : Various	-	-		-		5.000	Mar 2022	-		5.000	-	-	-
ROP Watchtower	MIPR	Various : Various	-	-		-		2.000	May 2022	-		2.000	-	-	-
Podded Position Navigation and Timing Prototyping	Various	Various : Various	-	-		-		4.000	Dec 2021	-		4.000	-	-	-
		Subtotal	-	6.885		5.380		63.000		-		63.000	-	-	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Spectral Halo Pod: Rapid Prototyping of Aircraft Stores Support	MIPR	AFRL : Arlington, VA	-	0.096	Oct 2019	-		-		-		-	-	-	-
Spectral Halo Pod: Rapid Prototyping of UAV Payloads Support	MIPR	AFRL : Arlington, VA	-	0.196	Feb 2020	-		-		-		-	-	-	-
Prototyping Contractor Support	Various	Various : Various	-	-		0.088	Feb 2021	0.500	Mar 2022	-		0.500	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force			Date: May 2021
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototyping Program Management Administration Costs	Various	Various : Various	-	1.483		3.553	Feb 2021	6.000	Feb 2022	-		6.000	-	-	-
		Subtotal	-	1.775		3.641		6.500		-		6.500	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	128.128		102.171		204.695		-		204.695	-	-	N/A

Remarks

Additional details, including Spectral Halo, low-cost attritable aircraft technology, space internet prototyping, and other emerging prototyping efforts, can be provided in the appropriate forum.

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645351 / *Prototyping*

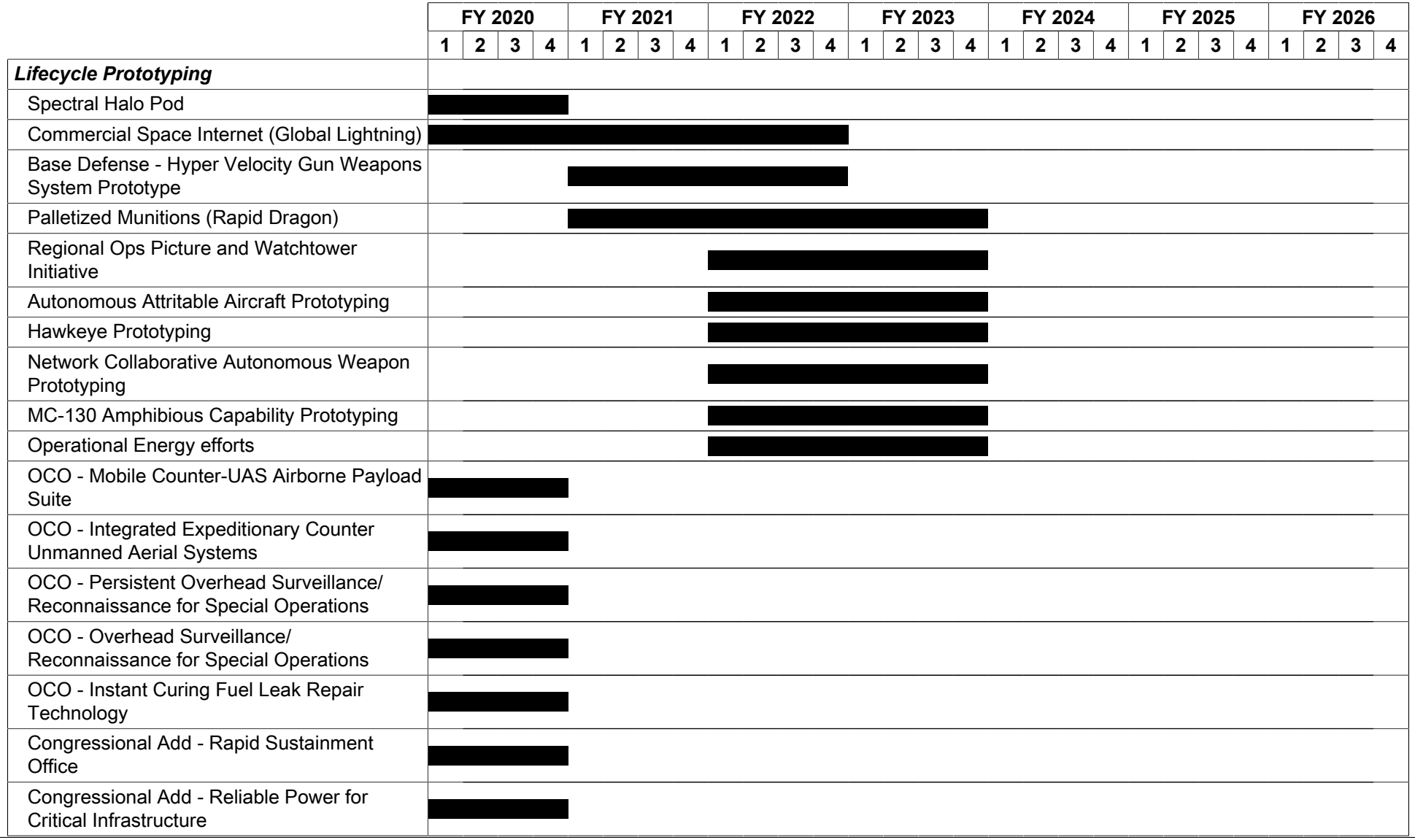

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645351 / *Prototyping*

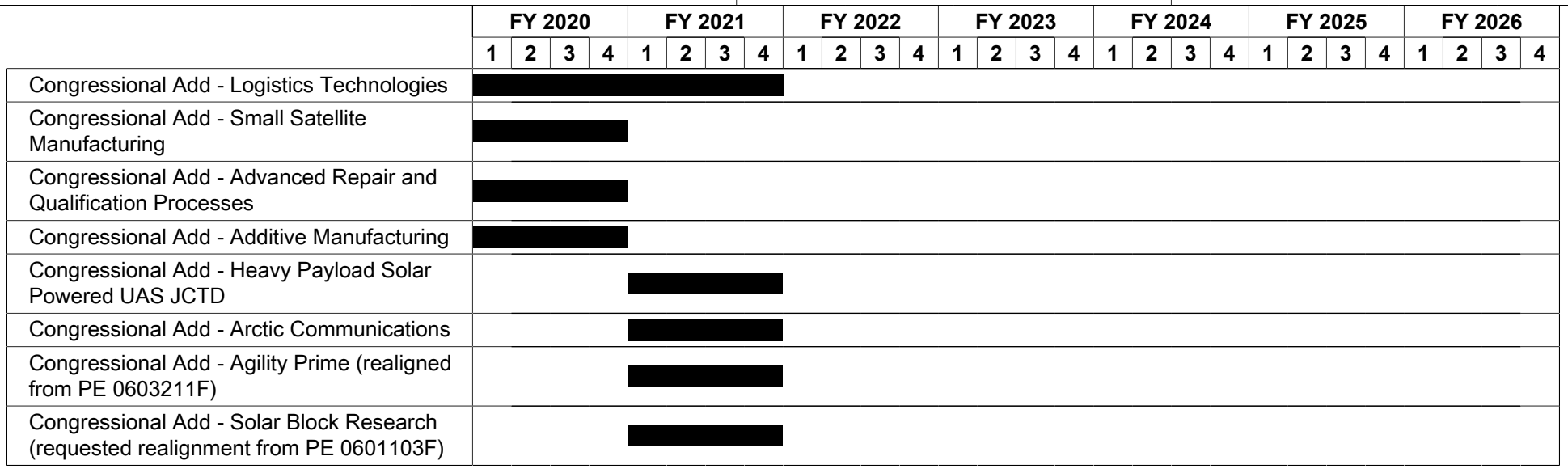

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645351 / *Prototyping*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Lifecycle Prototyping				
Spectral Halo Pod	1	2020	4	2020
Commercial Space Internet (Global Lightning)	1	2020	4	2022
Base Defense - Hyper Velocity Gun Weapons System Prototype	1	2021	4	2022
Palletized Munitions (Rapid Dragon)	1	2021	4	2023
Regional Ops Picture and Watchtower Initiative	1	2022	4	2023
Autonomous Attritable Aircraft Prototyping	1	2022	4	2023
Hawkeye Prototyping	1	2022	4	2023
Network Collaborative Autonomous Weapon Prototyping	1	2022	4	2023
MC-130 Amphibious Capability Prototyping	1	2022	4	2023
Operational Energy efforts	1	2022	4	2023
OCO - Mobile Counter-UAS Airborne Payload Suite	1	2020	4	2020
OCO - Integrated Expeditionary Counter Unmanned Aerial Systems	1	2020	4	2020
OCO - Persistent Overhead Surveillance/Reconnaissance for Special Operations	1	2020	4	2020
OCO - Overhead Surveillance/Reconnaissance for Special Operations	1	2020	4	2020
OCO - Instant Curing Fuel Leak Repair Technology	1	2020	4	2020
Congressional Add - Rapid Sustainment Office	1	2020	4	2020
Congressional Add - Reliable Power for Critical Infrastructure	1	2020	4	2020
Congressional Add - Logistics Technologies	1	2020	4	2021
Congressional Add - Small Satellite Manufacturing	1	2020	4	2020
Congressional Add - Advanced Repair and Qualification Processes	1	2020	4	2020
Congressional Add - Additive Manufacturing	1	2020	4	2020
Congressional Add - Heavy Payload Solar Powered UAS JCTD	1	2021	4	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0604858F / *Tech Transition Program*	**Project (Number/Name)** 645351 / *Prototyping*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Congressional Add - Arctic Communications	1	2021	4	2021
Congressional Add - Agility Prime (realigned from PE 0603211F)	1	2021	4	2021
Congressional Add - Solar Block Research (requested realignment from PE 0601103F)	1	2021	4	2021