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

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Dominance</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	-	872.539	902.440	1,524.667	0.000	1,524.667	-	-	-	-	-	-
646007: <i>AS 2030 Air Dominance Technologies (ADT)</i>	-	872.539	902.440	1,524.667	0.000	1,524.667	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

Next Generation Air Dominance (NGAD) is a portfolio of technologies enabling Air Superiority for the Joint Force in the most challenging operational environments. The NGAD program is directed by Joint Requirements Oversight Council Memorandum (JROCM) 043-13 and CSAF approved Air Superiority Enterprise Capability Collaboration Team (ECCT) Flight Plan. The program matures technology and reduces risk through development, integration, and test activities. Key NGAD attributes include enhancements in survivability, lethality, persistence, and interoperability across a range of military operations. Program activities will also include the employment of digital acquisitions through the application of digital engineering, agile software development, and open systems architectures. Funding provides program management support, operational concept exploration, technology studies, multi-domain integration assessments, operational and system architecture development, maturation and risk reduction of air superiority related technologies, including weapons systems and integrated system concept development and demonstration. NGAD technologies are available to other DoD systems based on emerging threats, AF priorities, and development capacity. DoD systems incorporating NGAD technologies will include development, integration, and testing of capabilities.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY20 \$9.217M expended and in FY21 \$11.497M is estimated for civilian pay expenses in this program element.

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.

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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Dominance</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>
Previous President's Budget	905.000	1,044.089	1,542.654	0.000	1,542.654
Current President's Budget	872.539	902.440	1,524.667	0.000	1,524.667
Total Adjustments	-32.461	-141.649	-17.987	0.000	-17.987
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-141.649			
• 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	-32.461	0.000			
• Other Adjustments	0.000	0.000	-17.987	0.000	-17.987

**Change Summary Explanation**

FY20: -\$32.461M SBIR

FY21: -\$140M Program Congressional Mark due to "forward financing of development efforts" and -\$1.649M Undistributed Mark

FY22: -\$17.987M Other Adjustments, -\$3.624M FY22 program offset and -\$14.363 Non-Pay/Non-Fuel Inflation

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Air Force										<b>Date:</b> May 2021		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0207110F / Next Generation Air Dominance				<b>Project (Number/Name)</b> 646007 / AS 2030 Air Dominance Technologies (ADT)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
646007: AS 2030 Air Dominance Technologies (ADT)	-	872.539	902.440	1,524.667	0.000	1,524.667	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Next Generation Air Dominance (NGAD) is a portfolio of technologies enabling Air Superiority for the Joint Force in the most challenging operational environments. The NGAD program is directed by Joint Requirements Oversight Council Memorandum (JROCM) 043-13 and CSAF approved Air Superiority Enterprise Capability Collaboration Team (ECCT) Flight Plan. The program matures technology and reduces risk through development, integration, and test activities. Key NGAD attributes include enhancements in survivability, lethality, persistence, and interoperability across a range of military operations. Program activities will also include the employment of digital acquisitions through the application of digital engineering, agile software development, and open systems architectures. Funding provides program management support, operational concept exploration, technology studies, multi-domain integration assessments, operational and system architecture development, maturation and risk reduction of air superiority related technologies, including weapons systems and integrated system concept development and demonstration. NGAD technologies are available to other DoD systems based on emerging threats, AF priorities, and development capacity. DoD systems incorporating NGAD technologies will include development, integration, and testing of capabilities.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver NGAD weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. NGAD civilian pay is executed in program element 0207110F. In FY20 \$9.217M expended and in FY21 \$11.497M is estimated for civilian pay expenses in this program element.

FY22 funding totals include 1524.667M requested for the Pacific Defense Initiative.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<b>Title:</b> 2030+ Air Dominance	872.539	902.440	1,524.667
<b>Description:</b> The 2030+ Air Dominance (AD) candidate concepts consist of operational analyses, threat studies and technology candidate assessments and prototyping to identify operational concepts and technologies that improve persistence, survivability, lethality, connectivity, interoperability and affordability in 2030 and beyond. These efforts will provide for contractors to conduct analyses, identify technology candidates and perform concept refinement. Furthermore, studies are required to develop operational/system architectures to include family of systems and system of systems. In addition, technical risk reduction activities will be performed to include development, integration, test and building demonstrative prototypes.			
The 2030+ AD working groups methodically assessed candidate concepts using USAF directives and guidance. Resulting concepts informed the NGAD Analysis of Alternatives (AoA), which was completed in 2019. Ongoing studies are conducted to			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Air Force		<b>Date:</b> May 2021		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Domina nce</i>	<b>Project (Number/Name)</b> 646007 / <i>AS 2030 Air Dominance Technologies (ADT)</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<p>refine system concepts and operational/system architectures incorporating family of systems and system of systems that may be required to inform and support strategic choices. In addition, technical risk reduction studies concerning technology integration, operational and system trade space utilizing preliminary data from AD concept development have resulted in multiple activities and engagements to inform strategic USAF experimentation and prototyping efforts. Finally, technical overviews were presented to the Air Force - Scientific Advisory Board (AF-SAB) and other senior leaders.</p> <p><b>FY 2021 Plans:</b> NGAD continues to conduct analyses, identify technology candidates and perform concept refinements. Studies required to develop operational/system architectures to include family of systems and system of systems are maturing. Technical risk reduction activities continue to be performed to include development, integration, test and building demonstrative prototypes. Program activities also include the pursuit of open architecture solutions.</p> <p><b>FY 2022 Plans:</b> NGAD will continue to conduct analyses, identify technology candidates and perform concept refinements. Studies required to develop operational/system architectures to include family of systems and system of systems will also mature. Technical risk reduction activities will continue to be performed to include development, integration, test and building demonstrative prototypes. Program activities will include the pursuit of open architecture solutions.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Funding increased due to program increasing technology maturation, risk reduction activities, and hardware prototyping efforts</p>				
<b>Accomplishments/Planned Programs Subtotals</b>		872.539	902.440	1,524.667
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				
<b>D. Acquisition Strategy</b>				
The Next Generation Air Dominance acquisition strategy is based on top-down, multi-domain capabilities development planning and oversight framework. Cross-functional teams will conduct analysis, demonstrations, and experiments to quantify the operational value of alternative concepts and technologies to provide solutions to current and future air superiority capability gaps.				

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force** **Date:** May 2021

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / Next Generation Air Dominance	<b>Project (Number/Name)</b> 646007 / AS 2030 Air Dominance Technologies (ADT)
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<b>Product Development (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NGAD Research/ Development Efforts	Various	Various : Various	-	850.667		870.088		1,487.535		-		1,487.535	-	-	-
<b>Subtotal</b>			-	850.667		870.088		1,487.535		-		1,487.535	-	-	N/A

**Remarks**  
Contractual specifics are not available at this level of security classification.

<b>Management Services (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NGAD Acquisition Support	Various	Various : Various	-	21.872		32.352		37.132		-		37.132	-	-	-
<b>Subtotal</b>			-	21.872		32.352		37.132		-		37.132	-	-	N/A

**Remarks**  
Includes civilian pay

	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	872.539	902.440	1,524.667	-	1,524.667	-	-	N/A

**Remarks**  
Details of contract data are not shown because of the level of security classification.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Air Force</b>		<b>Date: May 2021</b>
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / Next Generation Air Domina nce	<b>Project (Number/Name)</b> 646007 / AS 2030 Air Dominance Technologies (ADT)

	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	
<b>AS 2030 Air Dominance Technologies (ADT)</b>																													
Concept Exploration																													
Integration Studies																													
Technology Risk Reduction / Prototyping																													
FY22 Strategic Planning Choices Presented																													
FY23 Strategic Planning Choices Presented																													
FY24 Strategic Planning Choices Presented																													
FY25 Strategic Planning Choices Presented																													
FY26 Strategic Planning Choices Presented																													
FY27 Strategic Planning Choices Presented																													
FY28 Strategic Planning Choices Presented																													

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Air Force		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Dominance</i>	<b>Project (Number/Name)</b> 646007 / <i>AS 2030 Air Dominance Technologies (ADT)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>AS 2030 Air Dominance Technologies (ADT)</i></b>				
Concept Exploration	1	2020	4	2026
Integration Studies	1	2020	4	2026
Technology Risk Reduction / Prototyping	1	2020	4	2026
FY22 Strategic Planning Choices Presented	1	2020	1	2020
FY23 Strategic Planning Choices Presented	1	2021	1	2021
FY24 Strategic Planning Choices Presented	1	2022	1	2022
FY25 Strategic Planning Choices Presented	1	2023	1	2023
FY26 Strategic Planning Choices Presented	1	2024	1	2024
FY27 Strategic Planning Choices Presented	1	2025	1	2025
FY28 Strategic Planning Choices Presented	1	2026	1	2026