

UNCLASSIFIED

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

Appropriation/Budget Activity 3620F: <i>Research, Development, Test & Evaluation, Space Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 1206857SF / <i>Space Rapid Capabilities Office</i>
---	---

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	103.518	-	103.518	9.356	13.984	9.146	9.314	Continuing	Continuing
64A020: <i>AF Funded ORSSats</i>	-	0.000	0.000	103.518	0.000	103.518	9.356	13.984	9.146	9.314	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In FY 2021, PE 1206857F, Space Rapid Capabilities Office efforts were transferred to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1206857SF, Space Rapid Capabilities Office from Appropriation 3600, Budget Activity 04 due to the creation of a new Appropriation for Space Force.

The Space Rapid Capabilities Office (Space RCO) mission is to expedite the development and fielding of operationally focused capabilities for immediate and near-term needs as directed by the Space RCO Board of Directors (BoD). Key operating principles include a short and narrow chain of command, overarching programmatic insight, early and prominent war fighter involvement, and small integrated teams within a single office to rapidly augment existing space capabilities when needed, to expand operational capability, reconstitute/replenish/protect critical space capabilities to reserve "continuity of operations" capability, and exploit space technological or operational innovations to increase U.S. advantage.

The Space RCO is ready to develop, test, train, and equip war fighter needs as they are identified at any time. First, the requirements must be validated by the commander, USSTRATCOM, acting through U.S. Space Command; second, the project must be approved by the Space RCO BoD; third, the project will be executed by the Space RCO. If the effort is initiated during execution year, it will be described in the next year's budget exhibit.

Space RCO is supporting the Air Force Research Lab (AFRL) developed Space Solar Power project to collect solar energy and provide uninterrupted, assured, and logistically agile power to expeditionary forces operating in unimproved areas such as forward operating bases. AFRL formulated the Space Solar Power Incremental Demonstrations and Research (SSPIDR) project to rapidly demonstrate this innovative technology via a series of Integrated demos and technology development/maturation efforts.

In addition, Space RCO will conduct studies and analysis for future programs to support the BoD.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Space RCO weapon system capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392SF and 1206398SF.

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.

UNCLASSIFIED

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

Appropriation/Budget Activity 3620F: Research, Development, Test & Evaluation, Space Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 1206857SF I Space Rapid Capabilities Office
---	--

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
Current President's Budget	0.000	0.000	103.518	-	103.518
Total Adjustments	0.000	0.000	103.518	-	103.518
• 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	103.518	0.000	103.518

Change Summary Explanation

FY 2021: +\$103.518M; funds starting in FY 2021 were transferred from RDT&E, Air Force to RDT&E, Space Force; total includes increase of \$85.474M for Space RCO Solar Power.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
---	----------------	----------------	----------------

<p>Title: Space RCO Solar Power</p> <p>Description: Space RCO is developing the Solar Power project to collect solar energy and provide uninterrupted, assured, and logistically agile power to expeditionary forces operating in unimproved areas such as forward operating bases.</p> <p>FY 2020 Plans: N/A</p> <p>FY 2021 Plans: Continue developing space-based solar power collection and transmission technology via a series of integrated demos and technology development/maturation efforts: 1) demonstration of a solar-to-Radio Frequency (RF) tile and rectenna, 2) space flight demonstration of solar-to-RF panel payload, and 3) demonstration of scaled array payloads; operational prototype concept designs/analysis; and functional demonstrations for critical technologies in energy generation, deployable structures, thermal technology, and RF transmission.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: N/A</p>	0.000	0.000	85.880
<p>Title: Space RCO Board of Directors (BoD) Projects, Studies, and Analysis</p>	0.000	0.000	17.638

UNCLASSIFIED

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

Appropriation/Budget Activity 3620F: <i>Research, Development, Test & Evaluation, Space Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 1206857SF / <i>Space Rapid Capabilities Office</i>
---	---

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
<p>Description: Execute projects, studies, and analysis under rapid acquisition authorities inherent to the Space RCO, that address emergent capabilities and respond to validated requirements and other BoD approved efforts to meet needs in year of execution. In addition, provide systems engineering, program management support and civilian pay across all the Space RCO activities as well as perform modeling, simulation, analysis, and assess alternative concepts and requirements.</p> <p>FY 2020 Plans: N/A</p> <p>FY 2021 Plans: Continue to initiate rapid acquisition projects, studies, and analysis that address emergent capabilities requirements and other Space RCO BoD approved efforts. These activities may include, but are not limited to studies, technical analysis, experimentation, prototyping, modeling, etc. Continue ongoing systems engineering support of future mission development as well as Program Office support and potentially including Civilian pay. Activities may include, but are not limited to program office support, facilities, and studies. This Major Thrust includes items formerly under Operational Capabilities, Development, Enablers, Integration and Rapid Assembly, Integration & Test as well as Space RCO Development for FY 2020.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: N/A</p>			
Accomplishments/Planned Programs Subtotals	0.000	0.000	103.518

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

N/A

Remarks

E. Acquisition Strategy

Expediently award contracts through Space RCO or partner organizations.

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3620F / 4	R-1 Program Element (Number/Name) PE 1206857SF / <i>Space Rapid Capabilities Office</i>	Project (Number/Name) 64A020 / <i>AF Funded ORSSats</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Space Rapid Capabilities Office</i>				
Space RCO Solar Power	1	2021	4	2023
Space RCO Board of Directors (BoD) Projects, Studies, and Analysis	1	2021	4	2025