STMD FY 2021 Appropriations

FY 2021 STMD Appropriations	FY 2021		*Omnibus Delta from FY 2021 PBR*
	PBR	Omnibus	
OSAM-1 (Restore & SPIDER)	133.5	227.0	*93.5*
OSAM-2 (Archinaut)	20.5	Up the request level	-
Nuclear Thermal Propulsion Flight	37.9+	80.0*	*42.1*
SBIR/STTR	402.8	227.0***	*-175.8****
Regional Economic Dev	6.8	Up to $8M	-
Solar Electric Propulsion	48.7	At the requested level	-
Flight Opportunities	20.0	No less then 27.0	*7.0*
Nanomaterials	5.0	5.0	-
Additive Manufacturing	35.0+	35.0	-
On-Surface Manufacturing Capabilities	6.8	At the requested level (+$6.8M in the Senate)	-
Remaining STMD Content **	794.8**	416.2**	*-445.1*
Total	**1,578.3**	**1,100.0**	***(478.3)***

*NTP flight includes CFM and other flight related technology
**Includes NTP Foundational Technologies
***SBIR/STTR value needs CFO heuristic validation that determines extramural R&D and SBIR/STTR statutory requirement

FY 2021 Omnibus Consolidated Appropriations Act, 2021 P.L. 116-260

"$1,100M, provided that $227M shall be for RESTORE–L/SPace Infrastructure DExterous Robot. Provided further, That $110M shall be for the development, production, and demonstration of a nuclear thermal propulsion system, of which $80M shall be for the design of a flight demonstration system. Provided further, that, not later than 180 days after the enactment of this Act, NASA shall provide a plan for the design of a flight demonstration."

Report Language	**Omnibus/Conference: $1,100M** Equal to FY20, $478.3M below the requested level Of which $227M is for OSAM-1 (RESTORE-L/SPIDER) and $110M for NTP ($80M of which is for flight demonstration systems)	**House: $1,100M** Equal to FY20, $478.3M below the requested level Of which $227M is for OSAM-1 (RESTORE-L/SPIDER) and $110M for NTP ($80M of which is for flight demonstration systems)	**Senate: $1,206M** $106M higher than FY20, $372.3M below requested level Of which $227M is for OSAM-1 (RESTORE-L/SPIDER) and $110M for NTP ($80M of which is for flight demonstration systems).
OSAM-1 (RESTORE-L/ SPIDER)	Provides **$227M,** which is $93.5M greater than the requested level, for the RESTORE–L/SPace Infrastructure DExterous Robot	**$227M**, which is $93.5M greater than the requested level, for the RESTORE–L/SPace Infrastructure DExterous Robot to conduct an orbital refueling mission in 2022.	**$227M**, which is $93.5M greater than the requested level, for the RESTORE–L/SPIDER to conduct and demonstrate the capabilities to refuel satellites in LEO utilizing Landsat-7.
Nuclear Thermal Propulsion (NTP)	Provides **not less than $110M** for the development of nuclear thermal propulsion, of which **not less than $80M** shall be for the design of test articles that will **enable a flight demonstration**. Within 180 days of the enactment of this Act, NASA, in conjunction with other relevant Federal departments and agencies, shall submit a multi-year plan that enables technology development leading to an in 120 space propulsion-system demonstration and describes future missions and propulsion and power systems enabled by this capability.	**$110M** shall be for the development, production and demonstration of a nuclear thermal propulsion system, of which $80M shall be for the design of a flight demonstration system.	**$110M**, shall be for the development, production and demonstration of a nuclear thermal propulsion system, of which $80M shall be for the design of test articles that will enable a flight demonstration.
Solar Electric Propulsion (SEP)	Includes the **requested level ($48.7M)** for Solar Electric Propulsion activities.	**$60M,** which is $11.3M greater than the requested level to efficiently propel more ambitious robotic science and human exploration missions beyond the Earth and into deep space, as well as, to enable more efficient orbit transfer of spacecraft and accommodate the increasing power demands for government and commercial satellites.	
OSAM-2 (Archinaut)	Includes **up to the requested level ($20.5M)** for On Orbit Servicing and Manufacturing Demonstration-2.	**$20.5M,** develops and demonstrates technologies required to manufacture, assemble, and aggregate large and/or complex systems in space utilizing robotic and additive manufacturing technology.	
Flight Opportunities	**No less than $27M** for the Flight Opportunities Program. Includes $7M to support payload development and flight of K-12 and collegiate educational payloads.	**$30M,** which is $10M greater than the requested level to partner with commercial industry to advance technologies for sub-orbital and orbital launch vehicles for small payloads, with the aim to increase affordability of those technologies and to allow for more frequent access to relevant launch environments, including low-Earth orbit. Not less than **$5M** is in support of payload development and flight of K-12 and collegiate educational payloads.	**$25M** for Flight Opportunities, which is $5M greater than the requested level. Includes $5M to support payload development and flight of K-12 collegiate educational payloads.
Regional Economic Development	The agreement includes **up to $8M** for the Regional Economic Development Program. NASA is encouraged **to expand the program to all 50 states.**	**$8M** focuses on partnerships with State and regional economic development organizations as they expand space related commercial opportunities designed to address NASA mission needs	Supportive of partnering with the NIST Hollings Manufacturing Extension Partnership and its local offices to target technologies of interest to NASA's overarching mission of exploration, while also driving innovation and economic growth. NASA is encouraged to expand the program to all 50 States.
Nano & Additive Manufacturing & On Surface Manufacturing	**$35M** for additive manufacturing and **$5M** to advance large scale production and use of innovative nanomaterials, including carbon nanotubes. **Provides the budget request** for On-Surface Manufacturing and directs NASA, through partnerships with universities, to leverage efforts that complement ongoing work on the development of advanced materials with a focus on point-of-need and in-place generated materials, energy capture and power storage, recycling, commercialization, and workforce dev.		**$35M** for Additive Manufacturing; **$5M** for large scale production and use of innovative nanomaterials **$6.75M** to complement ongoing work on the development of advanced materials with a focus on point-of-need and in-place generated materials, energy capture and power storage, recycling, commercialization, and workforce dev.
SBIR/STTR	NASA shall continue to fulfill statutory obligations for the amount of Small Business Innovation Research (SBIR) and place an increased focus on awarding SBIR awards to firms with fewer than 50 employees.		NASA should place an increased focus on awarding SBIR awards to firms with fewer than 50 employees.