

Appendix C: Potential Transition and Infusion Opportunities

NASA has several programs and initiatives that help to drive the Agency’s overall mission and goals. Many of the subtopics within the SBIR program touch on these mission and goals and are possible areas for SBIR funded firms to consider for future technology transition and infusion opportunities. Some examples of where NASA is making investments to meet these goals are:

Climate - NASA is increasing investments in climate research due to the dangers to humanity posed by climate change, including the economic and national security impacts of this threat. These investments increase our ability to better understand our own planet and how it works as an integrated system. This will require an array of instruments, platforms, and missions to deliver the highest priority data to create a 3D view of our Earth, from atmosphere to bedrock. It will also require innovation in clean energy technology, particularly technologies that enable sustainable aviation.

Moon to Mars - NASA will lead an innovative and sustainable program of exploration with commercial and international partners to send humans farther into space and bring back to Earth new knowledge and opportunities.

In addition to those listed above, NASA is making investments in the areas of Commercial Lunar Payload Services (CLPS) and working with several American companies to deliver science and technology to the lunar surface through the CLPS initiative. NASA’s Flight Opportunities rapidly demonstrates promising technologies for space exploration, discovery, and the expansion of space commerce through suborbital testing with industry flight providers. The program matures capabilities needed for NASA missions and commercial applications while strategically investing in the growth of the U.S. commercial spaceflight industry. And lastly, conducting experiments on the International Space Station (ISS) is a unique opportunity to eliminate gravity as a variable, provide exposure to vacuum and radiation, and have a clear view of the Earth and space.

Below is a listing of all the SBIR subtopics by focus area and a designation if there are potential transition and infusion opportunities that exist within each subtopic. Offerors should think of this as a guide while understanding that NASA is not placing any priority on subtopics or awards that fall under these specific opportunities. Offerors that submit a proposal under a subtopic that is aligned with these opportunities do not increase their chance for an award.

Subtopic #	Subtopic Title	Climate	Moon to Mars	CLPS	Flight Opps	ISS
Focus Area 1 In-Space Propulsion Technologies						
Z10.01	Cryogenic Fluid Management		Yes			
Z10.04	Materials, Processes, and Technologies for Advancing In-Space Electric Propulsion Thrusters		Yes		Yes	
Z10.05	Rotating Detonation Rocket Engines (RDRE)		Yes			
Focus Area 2 Power, Energy and Storage						
S16.01	Photovoltaic Power Generation and Conversion		Yes	Yes		
S13.07	Energy Storage for Extreme Environments		Yes	Yes		
Z1.05	Lunar and Planetary Surface Power Management and Distribution		Yes	Yes		
Z1.06	Radiation-Tolerant High-Voltage, High-Power Electronics		Yes	Yes		
Z1.08	Space-rated fuel cell technologies		Yes	Yes		

Subtopic #	Subtopic Title	Climate	Moon to Mars	CLPS	Flight Opps	ISS
S16.01	Photovoltaic Power Generation and Conversion		Yes	Yes		
Focus Area 3 Autonomous Systems for Space Exploration						
H6.22	Deep Neural Net and Neuromorphic Processors for In-Space Autonomy and Cognition		Yes			Yes
H6.23	Spacecraft Autonomous Agent Cognitive Architectures for Human Exploration		Yes			Yes
S17.03	Fault Management Technologies		Yes	Yes		
Focus Area 4 Robotic Systems for Space Exploration						
S13.01	Robotic Mobility, Manipulation and Sampling		Yes	Yes		
Z5.04	Intravehicular Robot (IVR) Technologies		Yes			Yes
Z14.01	Lunar Surface Excavation	Yes	Yes			
Focus Area 5 Communications and Navigation						
H9.03	Flight Dynamics and Navigation Technologies		Yes	Yes	Yes	
H9.01	Long-Range Optical Telecommunications		Yes		Yes	
H9.07	Cognitive Communication		Yes			Yes
S16.03	Guidance, Navigation, and Control					
Focus Area 6 Life Support and Habitation Systems						
H3.08	Challenges in Carbon Dioxide Management		Yes		Yes	Yes
H3.09	Human Accommodations	Yes	Yes		Yes	Yes
H4.06	Low-Power Multi-Gas Sensor for Spacesuits		Yes	Yes	Yes	Yes
H4.07	Low Volume, Power and Mass CO2 and Humidity Control for xEMU	Yes	Yes	Yes	Yes	Yes
Focus Area 7 Human Research and Health Maintenance						
H12.07	Protective Pharmaceutical Packaging		Yes	Yes		Yes
Focus Area 8 In-Situ Resource Utilization						
Z12.01	Extraction of Oxygen, Metal, and Water from Lunar Regolith		Yes	Yes		
Focus Area 9 Sensors, Detectors, and Instruments						
S16.08	Atomic Quantum Sensor and Clocks					
S11.04	Sensor and Detector Technologies for Visible, Infrared (IR), Far-IR, and Submillimeter	Yes				
S12.06	Detector Technologies for Ultraviolet (UV), X-Ray, and Gamma-Ray Instruments					
S14.02	Particle and Field Sensors and Instrument-Enabling Technologies					
S11.03	Technologies for Passive Microwave Remote Sensing	Yes				
S13.05	In Situ Instruments/Technologies for Lunar and Planetary Science		Yes	Yes		
S11.02	Technologies for Active Microwave Remote Sensing	Yes	Yes			
S16.07	Cryogenic Systems for Sensors and Detectors		Yes	Yes		
S14.03	Remote Sensing Instrument Technologies for Heliophysics					
S13.06	In Situ Instruments/Technologies and Plume Sampling Systems for Ocean Worlds Life Detection					

Subtopic #	Subtopic Title	Climate	Moon to Mars	CLPS	Flight Opps	ISS
S11.05	Suborbital Instruments and Sensor Systems for Earth Science Measurements	Yes			Yes	
S11.01	Lidar Remote-Sensing Technologies	Yes	Yes			
S15.01	Plant Research Capabilities in Space					Yes
Focus Area 10 Advanced Telescope Technologies						
S12.02	Precision Deployable Optical Structures and Metrology					
S12.01	Exoplanet Detection and Characterization Technologies					
S12.04	X-Ray Mirror Systems Technology, Coating Technology for X-Ray-UV-OIR, and Free-Form Optics					
S12.03	Advanced Optical Systems and Fabrication/Testing/Control Technologies for Extended-Ultraviolet/Optical and Infrared Telescope					
Focus Area 11 Spacecraft and Platform Subsystems						
S16.06	Command, Data Handling, and Electronics					
S13.03	Extreme Environments Technology		Yes	Yes		
S13.02	Spacecraft Technology for Sample Return Missions		Yes	Yes		
S13.04	Contamination Control and Planetary Protection		Yes	Yes		
S16.04	Unpiloted Aerial Platforms and Technologies for NASA Science Missions	Yes			Yes	
Z2.02	High-Performance Space Computing Technology		Yes	Yes		Yes
Z2.03	Human Interfaces for Space Systems		Yes			Yes
Focus Area 12 Entry, Descent, and Landing Systems						
Z7.01	Entry, Descent, and Landing Flight Sensors and Instrumentation		Yes	Yes	Yes	
Z7.04	Landing Systems Technologies		Yes	Yes	Yes	
Z7.03	Entry and Descent System Technologies		Yes	Yes	Yes	
Focus Area 13 Information Technologies for Science Data						
S14.01	Space Weather Research-to-Operations/Operations-to-Research (R2O/O2R) Technology Development					
S17.02	Integrated Science Mission Modeling	Yes	Yes			
S17.04	Application of Artificial Intelligence for Science Modeling and Instrumentation	Yes				
S11.07	Earth Science Decision Support Tools Focused on the Mitigation of Climate Change Impacts	Yes				
Focus Area 15 Materials Research, Advanced Manufacturing, Structures, and Assembly						
H5.01	Lunar Surface 50 kW-Class Solar Array Structures		Yes	Yes		
H5.02	Hot Structure Technology for Aerospace Vehicles		Yes	Yes	Yes	
H5.05	Inflatable Softgoods for Next Generation Habitation Systems	Yes		Yes	Yes	
Z4.05	Nondestructive Evaluation (NDE) Sensors, Modeling, and Analysis	Yes	Yes	Yes		
Z4.07	Advanced Materials & Manufacturing for In-Space Operations		Yes	Yes	Yes	
Z14.02	Extraterrestrial Surface Construction		Yes	Yes		

Subtopic #	Subtopic Title	Climate	Moon to Mars	CLPS	Flight Opps	ISS
Focus Area 16 Ground & Launch Processing						
H10.02	Autonomous Operations Technologies for Ground and Launch Systems		Yes	Yes	Yes	
H10.01	Advanced Propulsion Systems Ground Test Technology		Yes			
Focus Area 17 Thermal Management Systems						
S16.05	Thermal Control Systems		Yes	Yes		
Z2.01	Spacecraft Thermal Management		Yes	Yes		
Focus Area 18 Air Vehicle Technology						
A1.01	Aeroelasticity and Aeroservoelastic Control	Yes				
A1.02	Quiet Performance - Aircraft Propulsion Noise	Yes				
A1.03	Low Emissions/Clean Power - Environmentally Responsible Propulsion	Yes				
A1.04	Electrified Aircraft Propulsion	Yes				
A1.05	Computational Tools and Methods					
A1.06	Vertical Lift Technology for Urban Air Mobility - Electric Motor Fault Mitigation Technology	Yes				
A1.08	Aeronautics Ground Test and Measurement Technologies					
Focus Area 19 Integrated Flight Systems						
A2.01	Flight Test and Measurement Technologies					
A2.02	Enabling Aircraft Autonomy					
A2.03	Advanced Air Mobility (AAM) Integration	Yes				
A2.04	AERONAUTICAL INFORMATION SYSTEM SECURITY (AISS)					
Focus Area 20 Airspace Operations and Safety						
A3.01	Advanced Air Traffic Management System Concepts	Yes				
A3.02	Increasing Autonomy in the National Airspace System (NAS)					
A3.03	Future Aviation Systems Safety					
A3.04	Nontraditional Airspace Operations and Aerial Wildfire Response	Yes				
Focus Area 21 Small Spacecraft Technologies						
Z8.10	Modular Systems for Cost-Effective Spacecraft Missions		Yes	Yes	Yes	Yes
Z8.02	Communications and Navigation for Distributed Small Spacecraft Beyond Low Earth Orbit (LEO)		Yes	Yes	Yes	
Z8.09	Small Spacecraft Transfer Stage Development		Yes	Yes	Yes	
Z8.13	Space Debris Prevention for Small Spacecraft				Yes	Yes
Focus Area 22 Low Earth Orbit Platform Utilization and Microgravity Research						
H8.01	Low-Earth Orbit Platform and Microgravity Utilization for Terrestrial Applications		Yes		Yes	Yes
Focus Area 24 Dust Mitigation and Extreme Lunar Environment Mitigation Technologies						
Z13.03	Technologies for Spacesuits in Extreme Surface Environments		Yes			Yes
Z13.02	Mechanisms for Extreme Environments		Yes	Yes		

Subtopic #	Subtopic Title	Climate	Moon to Mars	CLPS	Flight Opps	ISS
Z13.01	Active and Passive Dust Mitigation Surfaces		Yes			Yes
Z13.04	Lunar Dust Filtration and Monitoring		Yes			Yes