NASA SBIR 2020 Phase I Solicitation

H8.01  Utilization of the International Space Station (ISS) to Foster Commercial Development of Low-Earth Orbit (LEO)

Lead Center: JSC

Participating Center(s): ARC, GRC, JPL, KSC, LaRC, MSFC

Technology Area: TA6 Human Health, Life Support and Habitation Systems

Scope Description

This subtopic seeks proposals that could aid in achieving NASA’s newly-stated objective of leveraging International Space Station (ISS) capabilities to stimulate demand and catalyze markets leading to a broad commercial demand for Low Earth Orbit (LEO). The ISS SBIR program has particular interest in technologies and flight projects that could lead to valuable terrestrial applications due to development in microgravity, which can aid in fostering an economy in LEO. Use of the ISS will facilitate validation and enable development of the minimal viable product required to attract significant capital and lead to growth of new and emerging commercial markets in the following areas: in-space manufacturing, regenerative medicine, bioengineering and advanced materials production. Additionally, leveraging existing ISS facilities for new research and commercial product development which could improve, enhance and/or augment investigations being conducted, or planned to be conducted, on ISS is a high priority.

References

- Space Station Research & Technology at: https://www.nasa.gov/mission_pages/station/research/experiments/explorer
- Center for the Advancement of Science In Space, Inc. at: https://www.issnationallab.org/
- LEO Economy: https://cms.nasa.gov/leo-economy/low-earth-orbit-economy

Expected TRL or TRL range at completion of the project: 3 to 7

Desired Deliverables of Phase II

Prototype, Analysis, Hardware, Software, Research

Desired Deliverables Description

Desired deliverables at the end of Phase II would be engineering development units and/or software packages for NASA-sponsored testing that could be turned into proof-of-concept systems suitable for flight demonstrations.

State of the Art and Critical Gaps
The ISS is being used to stimulate both the supply and demand of commercial marketplace as NASA supports the development of the LEO space economy.

Relevance / Science Traceability

This subtopic is in direct support of NASA’s recent policy to enable commercial and marketing activities to take place aboard the ISS. The ISS capabilities will be used to further stimulate the demand for commercial products development.