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Systems and Infrastructures to Implement Future Building Blocks in Space Exploration and Development (2)

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THE FIRST COMMERCIAL AIRLOCK MODULE: BUILDING THE COMMERCIAL SPACE MARKET

Abstract

NanoRacks, LLC is designing and fabricating the first commercial airlock module, which will attach to the U.S. segment on the International Space Station (ISS). The Airlock is targeting a late 2019 launch. In May 2016, NanoRacks and NASA signed a Space Act Agreement in order to install a private airlock module onboard the ISS - the first in station history. The NanoRacks Airlock Module will be both a permanent commercial module onboard International Space Station, and also a module capable of being removed from the ISS and used on a future commercial platform such as NanoRacks Ixion platform. For this project, NanoRacks is leading the partnership with a team of well-known aerospace companies including Boeing, Thales Alenia Space, Oceaneering Space Systems, and ATA Engineering. The project is currently completing its design phase with a Critical Design Review in March 2018. Fabrication has already begun and will culminate with assembly complete in Spring 2019. Launch is scheduled for 4th quarter 2019 onboard the SpaceX-19 ISS Commercial Resupply Launch.

Commercial opportunities through Airlock begin with cubesat and small satellite deployment from station and include a full range of additional services to meet customer needs from NASA and the growing commercial sector. Currently, CubeSats and small satellites are deployed through the government-operated Japanese Kibo Airlock. Additionally, the crew on board may now assemble payloads typically flown in soft-stowage ISS Cargo Transfer Bags into larger items that currently cannot be handled by the existing Kibo Airlock.

The NanoRacks Airlock Module is an example of NASA working with the commercial sector in a public-private partnership focused on larger efforts to maximize use of the ISS and leverage the private sector in this new space economy. Implications for private commercial space stations will also be discussed.