

15th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND  
DEVELOPMENT (D3)Systems and Infrastructures to Implement Future Building Blocks in Space Exploration and Development  
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THE FIRST COMMERCIAL AIRLOCK MODULE: BUILDING THE COMMERCIAL SPACE  
MARKET**Abstract**

NanoRacks, LLC is partnering with Boeing on the building and installation of the first commercial airlock module, which will attach to the U.S. segment on the International Space Station (ISS). In May 2016, NanoRacks and NASA signed a Space Act Agreement in order to install a private airlock module onboard the International Space Station – the first in station history. The NanoRacks Airlock Module will be both a permanent commercial uncrewed module onboard International Space Station, and also a module capable of being removed from the space station and used on a future commercial platform. NanoRacks will be manifesting the Airlock for launch, with an estimated launch in 2019.

NanoRacks has selected Boeing to fabricate and install the Airlock's Passive Common Berthing Mechanism (PCBM), which is used to connect most pressurized modules of the ISS – and is the most critical piece of hardware for the airlock. Boeing will also provide additional engineering services required for developing and manufacturing of the airlock.

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 on larger efforts to maximize use of the International Space Station and leverage the private sector in this new space economy. Implications for private commercials will also be discussed.