IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)
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BARTOLOMEO EXTERNAL PLATFORM ENTERING INTO COMMERCIAL SERVICE

Abstract

Bartolomeo is the new external payload platform on the International Space Station's Columbus module. Bartolomeo offers 12 new external payload sites. Payloads are accommodated using the General-purpose Oceaneering Latching Device 2 (GOLD-2) enabling full robotic servicing of the facility. As a standard Bartolomeo hosts payloads in a range of 3 Cubesat units up to 0.56 cubic meters corresponding to 450 kg. Small payloads are accommodated in the ArgUS multi-payload frame installed on one standard slot. Designed to user requirements from the commercial and institutional sector Bartolomeo complements the space station with its unique capabilities and resupply logistics with unique features: access to best viewing angles in nadir, zenith and limb directions with minimal obstructions from other ISS elements, choice between unpressurized and pressurized launch of payloads to ISS, compatibility with all ISS payload airlocks, return option, enhanced data downlink capability through optical communication, and easy access to space with standardized payload interfaces. Payload sites on the new facility are accessible to customers world-wide through a commercial contract. With a lead time of 18 months the Bartolomeo Mission Service offers end-to-end mission integration with standardized interfaces definition to the user. Payloads, thereby, benefit directly from the partnership with the ISS program providing frequent access to space. The Bartolomeo platform will enable customers to use LEO more frequently, quicker and at lower cost supporting competitiveness and growth of the industrial sector, especially for small and medium enterprises and academic institutions who are yet unexperienced in using space. With the Bartolomeo platform scheduled for launch in March 2020 and the installation scheduled for April 2020, the paper will focus on the preparation of the operational phase. Bartolomeo introduces a new operational concept to external payloads on the space station: all payloads can be operated by the customer from ground through a web-based console using the functionality of the Columbus Multi-Purpose Computer Communication system. Customer payload operations are supported by the platform level monitoring and commanding by the Bartolomeo Control Center at Airbus. Both the payload and the platform-level commanding functions are implemented through the new Airbus Cloud which is part of Airbus' digitalization initiative. All platform and payload operations are monitored by the Columbus Control Center which remains in charge of resources and activities planning. With this new operations scenario Bartolomeo introduces a new, payload operator-oriented service of conducting a space mission in LEO in a low effort and cost-efficient way.