IAF MATERIALS AND STRUCTURES SYMPOSIUM (C2) Interactive Presentations - IAF MATERIALS AND STRUCTURES SYMPOSIUM (IP)

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ORBITAL SPACE TESTING PLATFORM DESIGNED TO ENABLE NEW TECHNOLOGIES

Abstract

The Materials International Space Station Experiment (MISSE) program started in 2001 and tested various materials and computing elements on the exterior of the International Space Station (ISS). To date NASA has flown 8 MISSE missions consisting of over 4,000 experiment samples. In 2016 Alpha Space negotiated an IDIQ contract in conjunction with their cooperative agreement with NASA to commercialize the program offering the capabilities of the platform to both commercial and government customers. The new program, started in 2017, called the Materials ISS Experiment Flight Facility (MISSE) provides routine access (6-month rotations) to the orbital environment to validate new technologies and test new materials in the expected flight environment. The MISSE provides a myriad of new on-orbit features not available in previously flown MISSE platforms like HD imagery, near real time data and COMM, sensor suite, etc. The MISSE has unobstructed views of RAM, ZENITH and WAKE and partial views of NADIR and each individual payload carrier has QCMs, Radiation, temperature, Atomic Oxygen, UV and sun sensors. The facility launched to the ISS on April 2, 2018 which will be followed by another flight in November 2018 and then follows a 6-month rotation cycle for the duration of the life of the ISS. Alpha Space offers the aerospace community low cost and repeatable access to space for testing/verification and enabling technologies because we can space qualify materials, components, electronics, etc. in the real space environment to help get newer technologies to industry faster and with less risk.