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Author: Mrs. Katherine Pegg
Airbus DS GmbH, Germany, katherine.pegg@airbus.com

Mr. Kai Burmeister
Airbus Defence & Space, Space Systems, Germany, kai.burmeister@airbus.com
Mr. Christoph Massau
Airbus DS GmbH, Germany, Christoph.Massau@airbus.com

COMMERCIAL PAYLOADS AND THE TICKETING PROCESS

- FAST AND DIRECT ACCESS TO ISS USING MPCC AND KU-IPS BY STANDARDIZED SERVICES-

Abstract

Along the ISS lifetime the utilization requirements have changed dramatically. The focus is rather on short term experiments with direct access using available commercial means at the experimenter site. Today the payload user wants to command his experiment accommodated in the ISS directly from his own PC. The basis to realize his dream could be established by the European Multi-Purpose Communications Computer (MPCC) using the NASA KU-IPS (Internet Protocol Service). The implementation and test has been successfully performed during the so-called Short Duration Mission (SDM) using a telerobotic experiment called HAPTICS / INTERACT around an interactive communication platform mobiPV.

MPCC will provide additional means within phase II development by using alternative communication paths. This is planned to be completed in 2018.

While corresponding papers ("MPCC AND KU-IPS, NEW WAYS TO CONTROL THE NEXT GENERATION OF COLUMBUS PAYLOADS - GROUND SEGMENT ASPECTS" and "Implementation of an Additional Command System, Pathing the Way for New Tasks at Col-CC") describing the changes to the on-board systems and operations for the Columbus Module and required additions in the ESA ground system architecture, this paper concentrates on the standardized services offered prior to the release of a 'flight ticket' to the payload developer.

Although MPCC implementation provide easy access means, the payload developer still has to decide on adaptation to existing MPCC interfaces, security issues and to get a reasonable understanding on the to be expected data rates.

The services offered to the payload user will be catalogued in order according to the payload complexity. The payload user can easily put his requirement/parameter requests into a Webservice. The result will be a list of activities necessary to fulfill all requirements from engineering assessment to PIRN processing, from simple tests using suitcase tester to complex testing using COLUMBUS test-systems, VCD closeout up to CoFR.