

HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)
ISS Operations and Utilization (3)

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INTERNATIONAL SPACE STATION PAYLOAD OPERATIONS: THE CHALLENGE OF MANAGING
PAYLOAD ACTIVITIES FOR A SIX PERSON CREW IN MULTIPLE PARTNER LABORATORIES

Abstract

The complexity of managing mission operations planning and real time execution for payload activities on ISS has increased dramatically over the last two years with the additional US Lab facilities, the new Columbus and Kibo modules, the External Logistics Carriers, and the beginning of six person crew operations. Prior to May 2009, payload activities constituted a very small number of hours per week spread over three crewmembers and were almost exclusively done in the US lab. Payload operations were further reduced during Shuttle docked operations and stage EVA operations when assembly of the ISS had priority. In addition, due to funding limitations, the Payload Operations and Integration Center (POIC) operations team had a limit to the number of US science racks that could be operated simultaneously. Since there was so little payload time available, this limitation rarely impacted the amount of science activities that could be scheduled. Additional partner labs, the subsequent increase to a six person crew, the size of the ground team, along with the processes followed to manage the integration, planning, and operations of ISS payloads, has since limited the amount of science activities that could be scheduled. In other words, crew time was not always the limiting factor. Sometimes the ground team, its processes, and new constraints, were the limiters. This paper will summarize the analysis and development steps taken to realign the POIC team to eliminate the limitation on the number of science racks that can operate simultaneously and to reduce the chances the ground will be the limiting factor in how much payload time can be scheduled. The paper will also explore the status of the progress and, since this transition is being done while maintaining on-orbit payload operations, the lessons that continue to be learned.