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COMMERCIALIZATION IN COLUMBUS: LOOKING BEFORE LEAPING

Abstract

Since the launch of the Columbus Module to the International Space Station (ISS) back in 2008, experiments to be executed on board were usually developed by a team of established scientists and engineers answering an ESA call of opportunity. A payload operations center was then assigned to act as the interface between the scientists and the Columbus Control Center (Col-CC) for the preparation and execution of the experiment activities.

In 2018, Columbus will receive its first commercial payloads, and with that, also the processes established in the 10 preceding years for preparing and performing payload operations have to be reassessed, and if needed adapted to the changing times.

Traditionally, the Columbus Flight Control Team has always had a detailed insight in the ESA payload operations occurring in the European ISS module. This was established, amongst others, through continuous real-time contact with the responsible payload operations center, detailed planning inputs to the ISS timeline, and centralized, reviewed procedures following common standards.

Commercial payload operators often desire more flexibility and a shorter turn-around time than accommodated by the traditional processes. Moreover, a commercial center testing a new technology may not be willing to share the details of their payload or to openly reveal malfunctions. At the same time, it is the Columbus Flight Director responsibility to oversee the planning and execution of activities in Columbus, as well as guaranteeing safety and the efficient use of crew time and on-board resources.

This article will explain the differences between commercial and government-based activities in the Columbus module as experienced by the Columbus Flight Control Team at Col-CC. It will discuss which processes needed to be adapted, and how the FCT deals with the reduced insight in on-going operations. Finally, the first lessons learned will be presented.