HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Flight & Ground Operations of HSF Systems (A Joint Session of the Human Spaceflight and Space Operations Symposia) (4-B6.5)

Author: Mr. Joao Lousada
GMV Insyen AG, Germany

Mr. Misbahur Rehman-Saad
GMV Insyen AG, Germany

COLUMBUS DESKTOP TRAINER: OVERVIEW AND USE CASES

Abstract

Ever since its launch and activation, in 2008, the Columbus module has been an important part of the International Space Station (ISS) and has played a crucial role in space related research in Europe. Experiments aboard the European module have help us better understand the physiology of the human body in space, the behavior of fluids in microgravity and material science.
Based in the Columbus Control Centre (Col-cc), at the German Aerospace Center (DLR) site in Oberpfaffenhoffen, near Munich, the Columbus flight control team works 24/7, operates Columbus and makes sure not only that the crew has a safe environment to work in, but also that all equipment is operational and ready to perform as needed.
Part of the Columbus ground infrastructure includes different simulators that are used by the several ground teams for not only for testing and validating procedures and processes, but also to better understand the onboard behaviors and try new procedures in a safe environment.
The Columbus Desktop Trainer (CDT) is a simulator that provides an easy set up and high flexibility for all Columbus sub-systems and main payloads. Although the CDT is not as realistic and as detailed as more complex simulators, its flexibility and shorter set up time, make it very useful for a variety of tasks, such as quick scenario testing.
This paper briefly discusses the characteristics of the CDT, currently used for Columbus, and their advantages and disadvantages. The paper then goes further into detail on the use cases for the CDT and possible future uses.