

MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)  
Facilities and Operations of Microgravity Experiments (5)

Author: Mr. Zeholy Pronk

Netherlands Aerospace Centre (NLR), The Netherlands, pronk@nlr.nl

Mr. Paul Dujardin

Netherlands Aerospace Centre (NLR), The Netherlands, dujardin@nlr.nl

Mr. Leif Steinicke

Space Applications Services, Belgium, ls@spaceapplications.com

Mr. Jean-Marc Wislez

Space Applications Services, Belgium, (*email is not specified*)

Mr. Jean-Claude Degavre

European Space Agency (ESA), The Netherlands, Jean-Claude.Degavre@esa.int

COLUMBUS PAYLOAD OPERATIONS FROM REMOTE DECENTRALIZED USER SUPPORT AND  
OPERATIONS CENTRES

**Abstract**

The Erasmus User Support Operations Centre (USOC) is part of the decentralized Columbus payload operations support infrastructure, and is Facility Responsible Centre (FRC) for the European Drawer Rack (EDR) inside Columbus and for the European Technology Exposure Facility (EuTEF) outside Columbus. Since February 2008, the Erasmus USOC is operational, and performs the tasks meant to be done under the USOC concept. This USOC concept is the result of a development already started up 20 years ago, meant to provide optimal and flexible support to the users of different micro-gravity platforms of the European contribution to the International Space station. Following a recommendation of the Netherlands and Belgium, ESA decided to develop the Erasmus USOC at ESTEC with national and ESA provided contributions.

The Erasmus USOC is getting support from two Facility Support Centers (FSCs) dedicated to sub rack payloads (so-called Class 2 Payloads), in this case experiment facilities. The Belgian USOC (B.USOC) operates the Protein Crystallization Diagnostic Facility (PCDF) inside the EDR Facility; the German USOC (MUSC) provides support to one of the EuTEF instruments, namely the EXPOSE instrument. In addition, the Erasmus USOC is connected to 9 User Home Bases (UHBs), spread all over Europe, providing an interface for Principal Investigators to their instruments onboard Columbus.

The preparatory phase for operations started more than a year before the mission and was mainly focused on preparation of operational products, and training and certification of operators. Both the preparation of operational products and the certification of operators have followed a certain order of incremental steps to finally result in validated procedures and certified operators.

The payload operations, started in February 2008, should provide the proof of the operations concept followed for some years. The presentation will address the concept and the approaches for implementation, validation, operations preparation and training. The concept will be evaluated based on the operations performed so far together with the Principal Investigators.