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Author: Mr. Maksims Baklanenko

Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, Maksims.Baklanenko@dlr.de

Dr. Dieter Sabath

Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, dieter.sabath@dlr.de

Mr. Gerd Söllner

Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, gerd.soellner@dlr.de

NEW COL-CC OPERATIONS CONCEPT AND NEW CHALLENGES

**Abstract**

On 15 January 2014 the Columbus Flight Control Team implemented the New Operations Concept after a short term preparation phase in the second half of 2013. The new setup of the Columbus flight control team consists of two 24/7 console positions COL-FD and STRATOS supported by several 8/5 team members, like COSMO and COMET as well as the Eurocom. This new operations concept has been developed and introduced in parallel to the ongoing cross-certification of the DMS and Systems team members to STRATOS.

Due to the short preparation phase, the new setup has to be improved and fine-tuned while already in use together with updating the relevant ops products: Flight Rules, Payload Regulations, Operations Data File procedures, Interface definition to our International Partners. It is planned to finalize the transition phase by mid of 2014 which will allow providing a first experience of the new setup.

In January 2014 the Columbus Data Management System on-board software upgrade – Cycle 14 – has been successfully performed. Now, the preparation for the next increment 39/40 is in full swing especially with the main focus on the “Blue Dot” mission of the German ESA astronaut Alexander Gerst. During this mission many new experiments will be performed in Columbus. One of them is the Plasma Krystal Facility 4th Version (PK-4) experiment.

The PK-4 is designed to investigate Direct Current controlled plasma under microgravity conditions. COL-CC has the overall coordination role and is acting as a gateway to the science community at CAD-MOS in Toulouse, Max Planck Institute in Munich, science centres in Moscow and Iowa. PK-4 will be installed into European Physiology Modules Facility (EPM) in Columbus by the Russian cosmonauts. As a consequence, the experiment preparation is coordinated via direct interface between COL-CC, Payload Developers, CADMOS and MCC-M. This set-up is new for all involved partners; nevertheless it brings first positive results due to high motivation of the PK-4 team and based on the large experience gained during the previous three Plasma Krystal experiments successfully performed on board ISS. PK-4 will fly to ISS on 57P Progress in October 2014.

To summarize, the paper will concentrate on the highlights of the Columbus Flight Control operations we went through last year. In addition, it will provide an overview of the first experiences and reflect the coordination choreography with the new operations concept considering ongoing mission preparation and execution of the experiments on board ISS.