SPACE OPERATIONS SYMPOSIUM (B6)
New Operations Concepts and Commercial Space Operations (2)

Author: Mr. Ralf Faller
Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, ralf.faller@dlr.de

Mr. Andreas Ohndorf
Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, andreas.ohndorf@dlr.de
Mr. Benjamin Schlepp
Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, benjamin.schlepp@dlr.de
Mrs. Sabrina Eberle
Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany, sabrina.eberle@dlr.de

PREPARATION, HANDOVER, AND CONDUCTION OF PRISMA MISSION OPERATIONS AT GSOC

Abstract

The experimental project PRISMA was initiated in 2005 by Sweden, France, Denmark, and Germany, with the Swedish Space Cooperation (SSC) as the project lead. The purpose was to demonstrate techniques and to validate respective sensor technology for future missions that involve close formation flight and rendezvous in space. At that time, the German Aerospace Center DLR was not only involved in providing satellite hardware and software components but also as one of the experimenters. The idea of also conduction a part of the flight operations phase from Germany came into discussion at the end of 2009 and was agreed by Sweden and Germany shortly before launch of the two PRISMA satellites in June 2010. Nine months later, the mission operations were handed over from the Swedish control center in Solna, Stockholm, to the German Space Operations Center (GSOC). After successful operations by GSOC, the mission was re-handed over back to Sweden in August 2011. The baseline concept for the German PRISMA ground segment was to clone the Swedish system at GSOC to minimize the development and test effort, but specific adaptations were needed to integrate PRISMA into GSOC's multimission environment. Furthermore, the station network was extended by two additional DLR ground stations in Weilheim, Germany, and in Inuvik, Canada. Another important aspect was the training of the German operations personnel in a short time. This was realized by training on the job concept, which attained both, keeping the additional workload for teaching and training on acceptable levels and reinforcing the Swedish personnel during their operations phase. This paper gives an overview of the GSOC ground segment and its flight operations activities. It reflects the challenges with regard to personnel and to the technical implementation of PRISMA flight operations at GSOC with limited available time. It also summarizes the lessons learned after five months of successful flight operations.