

IAF SPACE OPERATIONS SYMPOSIUM (B6)  
Ground Operations - Systems and Solutions (1)

Author: Mr. Stefan Hackel

DLR, German Aerospace Center, Germany, stefan.hackel@dlr.de

Ms. Yi Wasser

DLR, German Aerospace Center, Germany, Yi.Wasser@dlr.de

Mr. Michael Meinel

German Aerospace Center (DLR), Germany, michael.meinel@dlr.de

Dr. Ralph Kahle

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

## FLIGHT DYNAMICS MICROSERVICES

**Abstract**

Spacecraft operations require smooth and reliable product transfer between the control center subsystems, and the external entities. Compared to the popular data-driven approach for exchanging products, the service-oriented architecture provides a high level of modularity, high flexibility in deployment, and scalability. Therefore, the Flight Dynamics section at the German Space Operations Center (GSOC/DLR) started to establish microservices, which provide the flight dynamic core functionality to dedicated users via network services. A set of wrapped, high level core libraries is connected to web services, which provide data products on request. Within this presentation, the concept, design, as well as use-cases of providing services for mission support are shown.