

Th. Uhlig, F. Sellmaier, M. Schmidhuber

Spacecraft Operations

A Tutorial for Aerospace Engineers and Amateurs

Formats: Hardcover, eBook or MyCopy



This brand new book provides an up-to-date description of important space missions and the various strategies and techniques to operate them throughout their defined mission phases.

The uniqueness of the compiled chapters in the book is that their topics were originally used as a training tutorials for space operations new hires and aerospace students and other interested engineers from various international space agencies, universities and industry at the German Space Operations Center (GSOC) at DLR/Oberpfaffenhofen. This spacecraft course has matured over the past 14 years and is now compiled into an educational book (including a searchable eBook version!) for a broader audience.

The unprecedented accumulation of know-how is based on the fact that on-the-job experienced experts of GSOC could gain their expertise in all fields of spaceflight ranging from human spaceflight and robotics missions to commercial missions under "one roof" i.e., GSOC is worldwide the only control center providing the operational support for all those missions in one multi-mission control center. NASA, Russia and Japan and even ESA each have specialized control centers for the various missions.

The book therefore summarizes the "best practices" for space operations derived from GSOC's own 45 years of operational experience and from a multitude of European and international co-operations.

The book covers all aspects of spacecraft operations in varying levels of details, often in an exemplary fashion using appropriate projects for illustration.

The book might be used as reference for later work in the aerospace business – however it is not a handbook nor does it contain exhaustive technical descriptions.

The uniqueness of the book is that by its broad range of subjects including the "Space Segment Overview" (chapter 1) it might raise the consciousness of future spacecraft hardware engineers, for ground segment designers as well as for future spacecraft operators that a space mission is not completed with the construction of the spacecraft nor does operations start with the launch of the satellite i.e., the "space business" has a very complex structure and "everything is interconnected with everything", i.e., the smarter you start your project respecting all possible interfaces the more efficient – thus successful you are .

The book is highly recommendable and provides a state-of-the-art technical foundation for a project to become a successful project - however the talent to "survive" with your own future project in the rough seas of cost and politics can't be told in a book but has to be gained on the job.

October 2014, Joachim J. Kehr, Editor SpaceOps News