

SPACE SYSTEMS SYMPOSIUM (D1)
System Engineering Tools, Processes and Training (2) (6)

Author: Mr. Sebastian Johannes Ingo Herzig
Technische Universität München, Germany, sjiherzig@yahoo.com

Mr. Andreas Hein
Technische Universität München, Germany, andreas.hein@mytum.de

Mr. Axel Reichwein
Georgia Institute of Technology, United States, axel.reichwein@me.gatech.edu

Dr. Markus Brandstaetter
Technische Universität München, Germany, M.Brandstaetter@tum.de

EXPERIENCES GAINED FROM USING SYSML FOR THE DESIGN OF SATELLITES

Abstract

Using models to design and develop complex systems such as satellites has become increasingly popular over the last years. Various modeling languages have emerged to enable individual stakeholders to represent their view on the problem statement. One such language that allows the creation a domain- and view-spanning model is the Systems Modeling Language (SysMLTM), which is maintained by the Object Management Group (OMG). This paper deals with experiences using OMG SysMLTM to model a picosatellite. Our belief is that by discussing issues that were identified when using only models to design and develop a space system, a number of insights in regards to the impacts that Model-Based Systems Engineering (MBSE) will have on current practices of space systems engineering can be gained. Furthermore, best practices are put to the test. We conclude that while models are an effective way to specify complex systems, there are still a number of open issues related to both OMG SysMLTM and the traceability of attributes across several domain specific models.