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IAF SPACE SYSTEMS SYMPOSIUM (D1)
Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards. (5)

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OPS-SAT MISSION: AN ESA NANOSATELLITE MISSION - THE LESSONS WE HAVE LEARNED

Abstract

The ESA OPS-SAT nanosatellite mission has the goal to bring new technology and concepts into space to break the rule "has newer flown – will never fly". OPS-SAT can be seen as a laboratory in space that provides the necessary hardware and software for the execution of experiments. Various institutions and companies have expressed their interest to contribute to the success of the OPS-SAT mission. The Institute of Communication Networks and Satellite Communication (IKS) at Graz University of Technology (TUG) in Austria is the prime contractor of OPS-SAT and leader of a consortium that contributes to the success of the mission. In 2014, the OPS-SAT project phase A started with the goal to confirm the feasibility of the mission and to elaborate a first rough system design. Since these days, a lot of time went by and now in spring 2019 the OPS-SAT mission FAR is coming close, followed by the launch in fall 2019. Our work as consortium leader has resulted in a wide range of activities regarding finances, management, system design, hardware and software development, verification and quality assurance. During the OPS-SAT mission, our team at IKS was collaborating with ESA and our consortium partners. Consequently, we have learned a lot about the difficulties that arise during the Nanosatellite design, manufacturing, verification and launch and early operations phase. Especially the project specific challenges for the project management and quality assurance that arise during such projects are well known. Additionally, lessons learned after launch preparations, launch and early operations are discussed. The paper shall give an overview on the things that went good and not so good during the project and describes the lessons we have learned. This information may help others in the future to make the best out of their satellite projects.