

SPACE OPERATIONS SYMPOSIUM (B6)
Mission Operations, Validation, Simulation and Training (3)

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ASSURANCE CASES FOR VALIDATION OF INITIAL-PHASE MICROSATELLITE MISSION
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Abstract

The initial-phase operations are critical to all satellites. For smallsatellites with limited resources (e.g., low accesses to ground stations, low bus power, etc.) it is hard to ensure the first acquisition of signals, the initial check-out, etc. Thus it is important to develop a good operations procedure to successfully pass the initial mission phase of such a satellite. Furthermore, since smallsatellites tend to have uniformity of size and specs, it is beneficial to extend such a procedure to define one that is applicable to many, if not all, of smallsatellites. This study develops an operations procedure for a microsatellite in its initial phase. In order to ensure its validity, assurance cases are used to investigate if the developed procedure achieves the goal; to pass the critical initial phase. Assurance cases are made for three microsatellites of similar size and specs to ensure applicability of the procedure.