

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

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DISTRIBUTED SIMULATIONS FOR SATELLITE CONSTELLATION MISSIONS

Abstract

Constellation missions are becoming more frequent as technologies are able to deal with the added complexities. This complexity is not limited to the mission itself, it also impacts the ground segment and operations. Operating a constellation requires specific training. The most efficient way for such training is the use of a constellation simulator. As the number of satellites to be simulated in such a constellation simulator is very quickly exceeding the capabilities of a single computer distributed simulation is needed. The aim of the paper is to highlight on one side the technical challenges of setting up such a training environment for distributed simulation of a constellation and the use in constellation operations training. The other aim of the paper is also to highlight the future challenges. Future applications of satellite constellations might not be limited only to operate a constellation. Formation flying is a specific case of operating a constellation, which requires additional and very challenging technologies in the area of operations training. This has of course an impact on the mission operations approach and specifically the training approach.