

16th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND
DEVELOPMENT (D3)

Space Technology and System Management Practices and Tools (4)

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FIPS NETWORK APPLICATION

Abstract

FiPS® is an Ariane GROUP Internal tool for the simulation of the complete chain of space vehicles with all ratio of fluid to dry mass and the control elements. FiPS® Remote Network is designed to offer more flexibility in application, especially using a remote mode for communication and exchange of data with the control system of the rigid body located in another geographical location, and/or property of customer. The simulator is split in two parts with the possibility to adapt each part to the actual needs. Usually one part contains the control algorithm and the other part contains the propulsion, the rigid body and the sloshing dynamics models. The two parts communicate via network using the TCP/IP protocol. So it's possible to do a simulation with the two parts being at different locations. The focus concerning the IAC is to provide insight into application aspects and quality of simulation results. In the introduction a general description of the simulator structure will be given. Subsequent, an overview about the realization of the network communication will be presented. The tool capabilities will be presented by means of a closed loop CFD simulation considering different ballistic flight phases.