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THE CONTROL SYSTEM SIMULATION OF NEW LAUNCH VEHICLE BASED ON HLA

Abstract

In order to cater for the research requirements of new launch vehicle, the virtual simulation system, combined with the features of launch flying environment, adopt the HLA(High level architecture) of distributed and interactive simulation and virtual reality technology. Based on the technology of HLA and Vega Prime, the control function, peculiarity and architecture of the simulation system were proposed. HLA/RTI was briefly introduced and the principle of the new launch and flying system was analyzed, one technical scheme of the simulation system was designed. Some key technologies and feasible solutions were discussed, including simulation scenario generation, atmosphere envionment modeling, federation design. By the virtual simulation, which can be carried out the launch and flying simulation process before the true new launch vehicle produced, the simulation system can improve the research efficiency, cut down the cost and reduce the technology risk.