

Design of KOMPSAT-2 Simulator

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The KOMPSAT-1 MCE(Mission Control Element) has been verified via operation of KOMPSAT-1 from Launch and Early Orbit Phase(LEOP) to normal operation phases so far. The MCE of KOMPSAT-2 is being developed. The KOMPSAT-2 SIM, which is the comprehensive application software, includes flight software and satellite subsystem mathematical models of the KOMPSAT. Major functions of the SIM are the validation of command, functional validation and operation check of the SOS, training of operators, anomaly analysis support, functional validation of the on-board flight software, and validation of spacecraft control laws and mission scenario, etc.

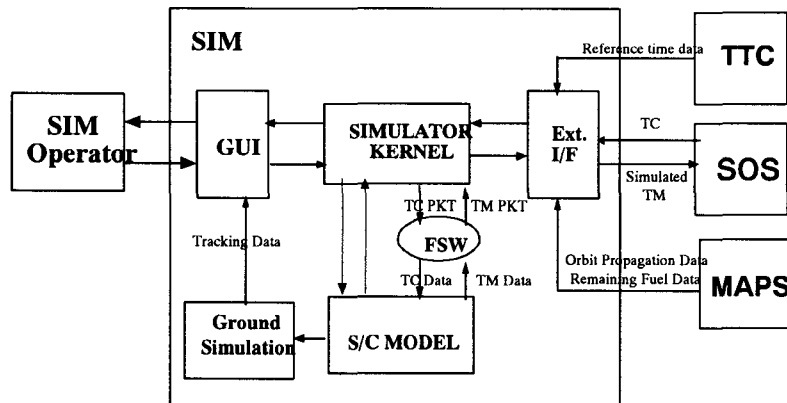


Figure 1. Configuration of KOMPSAT-2 SIM

The KOMPSAT SIM provides real-time and non real-time simulation capabilities for AOCS, EPS, TC&R, Ground Antenna Ranging & Tracking, Telecommand and Telemetry Processing, and comprehensive visualization tool for the satellite dynamics. The standard OOA(Object-Oriented Analysis)/OOD(Object-Oriented Design) procedure has been made to design KOMPSAT-2 SIM. Conventional structured design method that was applied to KOMPSAT-1 SIM is straightforward. However it may not satisfy modern S/W development and maintenance requirements such as reusability, extensibility, and reliability[4]. For the KOMPSAT-2 SIM, OOA/OOD processes are employed to maximize those requirements. The design of KOMPSAT-2 simulator will be presented in this paper.