Flight Dynamics Subsystem
for COMS Satellite Ground Control

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As a multi-mission geostationary orbit satellite, COMS (Communication, Ocean, and Meteorological Satellite) is planned to be launched in the year 2008. Flight Dynamics Subsystem (FDS) is a subsystem of the COMS Satellite Ground Control System (SGCS) and provides spacecraft flight dynamics operations support. Flight dynamics operations support includes spacecraft orbit determination, orbit prediction, event prediction, fuel accounting, station-keeping maneuver planning, and station-relocation maneuver planning. All of the orbit dynamics functions in FDS consider a specific COMS daily wheel off-loading operation. FDS also provides COMS operation related support functions such as oscillator updating parameter calculation and Earth acquisition parameter calculation after emergency Sun reacquisition. In general, FDS is a computer-based system, which is comprised of flight dynamics software and computer hardware. Development of FDS is now in the preliminary design phase.
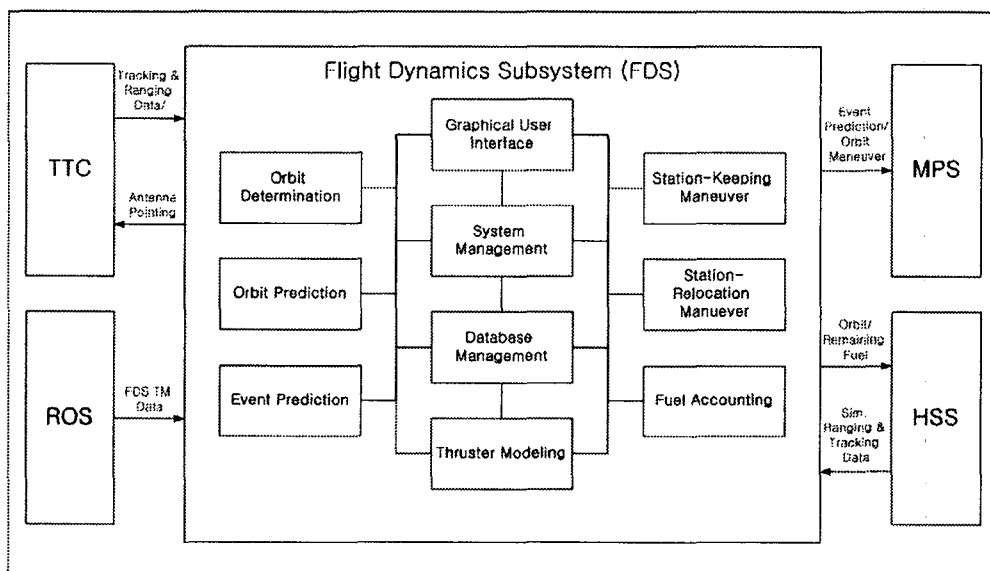

Figure 1. Functional Structure and Interface of FDS