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THE FULLY AUTOMATED GROUND SYSTEM OF MISSION PLANNING FOR GEOSTATIONARY  
SATELLITE**Abstract**

Since a ground system is essential to ordinarily control satellites in operation, the ground systems for each satellite have been individually established in the control center of Korea Aerospace Research Institute (KARI). In particular, the mission planning subsystem (MPS), which is able to schedule observation missions and check for conflicts between missions, is one of the critical ground systems. Because not only observation missions according to user requests but also bus operations should be accurately planned through MPS. As a result, most of ground components, including MPS, are becoming increasingly automated to avoid human errors by operators. KARI is currently operating three geostationary orbit satellites; COMS, GK-2A, and GK-2B. Communication, Ocean, Meteorological Satellite (COMS), which was launched on 27 June 2010, is currently operating in normal status as the first Korea multi-mission geostationary satellite. Although COMS has three main missions at the first including monitoring weather conditions and ocean phenomena, only communication mission through Ka-band payload is currently performed. Therefore, there is no mission plan for the observation mission, and only the mission plan for bus operations is being implemented. GK-2A (Geo-KOMPSAT-2A) and GK-2B (Geo-KOMPSAT-2B), which perform different observation missions, successors to the COMS, were launched in 2018 and 2020, respectively. MPS has been established for each of three geostationary satellites, and system improvements have been continuously made to ensure stable mission operations during both the launch and early orbit phase (LEOP) and the normal operation phase. As a result, several tasks related to observation mission planning, initially performed manually in LEOP and the early normal operations phase, are improved to fully automate in current. In this paper, the fully automated ground system of mission planning will be introduced for geostationary satellites in operations in KARI, and a statistical result of mission planning will be also represented.