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**KAI's Concept of Operation & Case Study Introduction for Next  
Meteorological GEO Satellite**

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In this paper, presents the concept of operation for KAI(Korea Aerospace Industry)'s next-generation meteorological GEO(Geostationary Earth Orbit) satellite design research and introduces key research for GEO satellite system design.

The concept of operation of meteorological GEO satellite is divided into two stages: GTO(Geostationary Transfer Orbit) phase and GEO phase(normal operation). The GTO orbit phase includes mission mode and orbit transfers for entry into GEO after launch vehicle orbit injection. The GEO phase includes general operating modes such as station keeping maneuver, wheel offloading, etc.

Additionally, KAI conducted various research to develop next-generation meteorological GEO satellite.

First, the studies are conducted to analyze the optimal orbit transfer time and fuel consumption using electric thruster or chemical thrusters, and the analysis tool for mission system of GEO satellite was developed.

Second, the overall mission mode(GTO mission, GEO mission, disposal mission) of the meteorological GEO satellite is being designed, and software/simulator that implements the attitude control logic for each mission mode is being developed.