

EARTH OBSERVATION SYMPOSIUM (B1)
Future Earth Observation Systems (2)

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KMA GEOSTATIONARY SATELLITE PROGRAM: COMS(COMMUNICATION, OCEAN AND
METEOROLOGICAL SATELLITE) AND ITS APPLICATION

Abstract

Recently, the demands for the domestic satellite have been increased in the fields of public and civilian services like communication, information and meteorological services. Especially, the global climate change raises the needs of the real-time Earth observation data from space. The global climate change causes the unpredictable severe events, such as the abnormal high/low temperature, rainfall patterns, storms, and drought, etc. Henceforth, the demand on the accurate prediction for the local/regional severe weather and the earlier warning activity for the hazardous weather condition has been increased worldwide. Satellite data is very important and critical resource to predict not only today's weather but also climate change. In that sense, the multifunctional geostationary satellite program was encouraged and Korea's first geostationary satellite, COMS(Communication, Ocean and Meteorological Satellite) is now scheduled to launch in 2009. COMS has three payloads: one for meteorology, another for ocean observation and the other for experimental communications in Ka-bands. COMS will provide meteorological data to end-users around the world, oceanography data for the Korean peninsula and experimental communications services in Ka-band. This satellite will be located in geostationary orbit of 128.2E. Meteorological Imager(MI) is a multi-spectral channel radiometer with two-axis scanning, which provides imagery and radiometric information of the Earth's surface and cloud cover over 5 channels – one visible channel(1 km ground resolution) and 4 infrared channels(4 km resolution). KMA has the charge of MI operation, image quality maintenance, meteorological products development, and meteorological and oceanography data service to end-users. For this purpose, KMA has developed the systems required for COMS operation since 2003 and here we introduce COMS development status and the following systems related with the data service to end-users:

- COMS development status and operation policy of KMA
- Image radiometric calibration and validation(Visible/IR) system
- COMS Meteorological Data Processing System(CMDPS)
- Image quality improvement and climate information service system plan
- Research and development plan on satellite data application for nowcasting and very short range forecasting