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Prepared by KMA

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Tentative Plans for Follow-on Satellites to COMS

This document reports on tentative plans for follow-on satellites to COMS. Currently, KMA plans to launch a follow-on satellite to COMS in 2017 before COMS complete its operation.

The COMS follow-on satellite is tentatively planned to carry an imager comparable to the Advanced Baseline Imager (ABI) or the Flexible Combined Imager (FCI).

The other missions will be planned in 2010 under the cooperation with other Ministries of Korea engaged.

1. Introduction

The Korea Meteorological Administration (KMA) is going to operate its first geostationary meteorological satellite, COMS(Communication, Ocean and Meteorological Satellite), in 2010 at 128.2E degrees East covering East Asia and the Western Pacific region. COMS has 7 years of mission life expected, it is required that KMA need to prepare the follow-on mission around 2017 time frame.

In 2009, KMA has started the feasibility study for COMS follow-on mission under the cooperation with Ministry of Education, Science and Technology(MEST), Ministry of Land, Transport and Maritime Affairs(MLTM), and Ministry of Environment(ME) of Korean government.

2. Overview of the COMS Follow-on

KMA has selected and defined the functions and specifications of the COMS follow-on satellite's meteorological missions based on user requirements for satellite data and products. For meeting these requirements, it is necessary that the follow-on should carry an imager with capability comparable to the GOES-R/ABI or the MTG/FCI with the following functions:

- Multi-channel capacity (around 16 channels including 2~3 visible channels)
- High spatial resolution (0.5 km for visible channels and 2 km for infrared channels)
- Fast imaging (less than 10 minutes for Full Disk observation)
- Flexibility for the regional area selection and scheduling

The draft specifications suggested from the feasibility study are summarized in Table 1.

Beside the meteorological mission, the COMS follow-on is expected to carry 2 more observation payloads. One is for continuing the ocean color monitoring mission of GOCI(Geostationary Ocean Color Imager), and the other is a new mission for atmospheric environment monitoring. In order to accommodate these requirements, Korea government plans to develop twin satellites, one for meteorological and the other for the ocean and environmental mission.

The detailed specifications for the follow-on will be decided by the second phase of feasibility study in 2010, where the plan for the data dissemination will be also determined.

Table 1. Draft specifications of the imager for the COMS follow-on satellite

Imaging Channels			
		Spatial resolution	Number of observational bands
	VIS (<0.7 micron)	0.5 km	2~3
	NIR (0.7-3 micron)	2 km	2~3
	IR (>3 micron)	2 km	9~11
	Total Number of Channels		16
Observation Capability			
	Imaging Rate	< 10 min	(Full Disk)
	Scan Capability	Full Disk: normal operation Area: flexibel schedule and location definition	
Lifetime of meteorological mission			
	10 years (TBD)		

The COMS follow-on satellite development program is going to start in 2011, and its meteorological satellite shall be launched in the end of 2016 or the head of 2017 for continuing the mission of COMS.