

CGMS-XXX USA WP-08
Agenda Item: C.2
Discussed in Plenary

Report on the Status of Future Geostationary Meteorological Satellite System

This paper will provide a status and an overview of the future GOES satellite system.

Report on the Status of Future Geostationary Meteorological Satellite System

Introduction

In the current constellation, GOES-8 (launched April 13, 1994) continues to provide data as GOES-EAST more than three years beyond its five-year expected life. GOES-10 (launched April 25, 1997) is operational as GOES-WEST. It was activated in mid 1998 to replace GOES-9 (launched May 23, 1998) when GOES-9's momentum wheels showed signs consistent with lubrication starvation seen on other vehicles, which failed shortly thereafter. GOES-9 will be transitioned to allocation over the Pacific Ocean to function as an emergency backup to Japan's GMS-5. GOES-11 (launched May 3, 2000) completed its checkout on August 14, 2000, was placed into on-orbit storage mode.

GOES-12 was successfully launched on July 23, 2001 and completed its checkout on December 21, 2001. It carries the first Solar X-Ray Imager (SXI) instrument. The SXI will stare at the Sun continuously and provide images in up to eight X-ray energy bands. Other instrumentation is similar to that on GOES-10. One important change is in the Imager channels. One channel at 12.0 micrometers will be replaced with one at 13.3 micrometers in order to better establish the height of winds for tropical storm predictions and for more accurate cloud optical properties. In addition, the horizontal resolution of the 6.7 micrometer water vapor channel will be improved from 8 km to 4 km. NOAA has made the decision that GOES-12 is the primary on-orbit spare to be activated when needed. Assuming no on-orbit failures occur, it is expected that GOES-12 will become the operational GOES-EAST around approximately April 2003 after GOES-8 depletes its fuel.

GOES-N Series

The first two spacecraft, GOES-N and O, are in the hardware development and integration phase. The first set of Imager and Sounder instruments have been successfully integrated on the GOES-N spacecraft. The completed GOES-N spacecraft is scheduled to be available for launch in January 2004 and GOES-O in April 2005. GOES-N and GOES-O are both in the systems testing phase. The new GOES-N series ground system was delivered to the Satellite Operations Control Center in June 2001. Contractual options for GOES-P will be exercised no later than April 2003.

Instrumentation will continue with the present five channel Imagers and filter wheel Sounders. At least two SXI instruments will fly on the GOES-N series. Horizontal resolution of these Imagers will be improved to 4 km in all IR channels, including the 13.3 micrometer channel.

GOES-R Series

The GOES-R series satellites will each carry a new Advanced Baseline Imager (ABI). The ABI will be an eight to eighteen channel imager with Hyperspectral Environmental Sensor (HES), an advanced sounder. Channels selected based, in part, on EUMETSAT's SEVERI instrument. The HES will be an interferometer-class instrument leveraging technology from NASA's Geosynchronous Imaging Fourier Transform Interferometer (GIFTS).

Procurement activities are underway. Three contractors were awarded ABI Formulation Phase (formerly known as Phase B) contracts for system trades and preliminary designs. A single contractor will be the implementation contract by early 2005. Procurement activities for the HES are now being initiated with the formulation phase award scheduled for mid-CY 2003. For the spacecraft, three contractors were awarded accommodation study contract to provide as understanding of weight and power issues. Spacecraft formulation phase will be initiated in 2004.

GOES-R Launch Readiness will be 2012.