

CGMS-XXVIII
USA WP-07
Agenda Item: C.2

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 six 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 is a limited life on-orbit spare. GOES-11 (launched May 3, 2000) completed its checkout on August 14, 2000, was placed into on-orbit storage mode and is the primary on-orbit spare to be activated when needed.

GOES M Development

GOES-M will complete system-level thermal vacuum testing in October, 2000, and is scheduled to be available for a planned launch in the July, 2001 time frame. It has accommodations for a Solar X-ray Imager (SXI). The SXI instrument 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.

GOES N, O, P, and Q

The first two spacecraft, GOES N and O, are in the hardware development and integration phase. The first set of Imager and Sounder instruments is scheduled for delivery in early 2001. The completed GOES-N spacecraft is scheduled to be available for launch in October 2002 and GOES-O in April 2004. Contractual options for GOES-P and GOES-Q are not yet exercised.

Instrumentation will continue with the present five channel Imagers and filter wheel Sounders on GOES-N, O, and P. At least two SXI instruments will fly on the GOES N-Q series. Horizontal resolution of these Imagers will be improved to 4 km in all IR channels, including the 13.3 micrometer channel. GOES-Q will have the first of an eight to ten channel Advanced Baseline Imager (ABI) along with the current filter wheel sounder. An interferometer-type Advanced Baseline Sounder (ABS) is planned to be available for launch on the 2010 time frame.

GOES-R and beyond

Initial planning for the series beginning with GOES-R is underway. Expectations are for satellites and instruments with seven year lifetimes rather than the current five year lifetimes, and a series of ABI and ABS instruments.