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## **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.

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### Introduction

In the current constellation, GOES-8 (launched April 13, 1994) continues to provide data as GOES-EAST more than seven 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-12 was successfully launched on July 23, 2001 and will complete its checkout in December 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.

### 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 is scheduled for delivery in early 2001. The completed GOES-N spacecraft is scheduled to be available for launch in January 2003 and GOES-O in April 2004. GOES-N and GOES-O are both in the systems testing phase. The Imager and Sounder for GOES-N have been delivered for integration. The new GOES-N series ground system was delivered to the Satellite Operations Control Center in June 2001. 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. 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) and Advanced Baseline Sounder (ABS). The ABI will be an eight to ten channel imager with

channels selected based, in part, on EUMETSAT's SEVERI instrument. The ABS will be an interferometer-class instrument based almost entirely on NASA's Geosynchronous Imaging Fourier Transform Interferometer (GIFTS).

Expectations are that satellites and instruments will have seven-year lifetimes rather than the current five year lifetimes. Procurement activities are underway. Three contractors were awarded Formulation Phase (formerly known as Phase B) contracts for conceptual designs. A single contractor will be awarded a development contract by early 2003. Procurement activities for the sounder are now being initiated. For the spacecraft, three contractors were awarded accommodation study contract to provide an understanding of weight and power issues.