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Prepared by USA  
Agenda Item: C.2  
Discuss in Plenary

## **Report on the Status of Future Geostationary Meteorological Satellite Systems**

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

## **Report on the Status of Future Geostationary Meteorological Satellite Systems**

### **1. GOES-I Series**

GOES-12, launched July 23, 2001, continues to provide data as GOES-East at 75° W. GOES-10, launched April 25, 1997, is operational as GOES-West at 135° W. GOES-10 was activated in mid 1998 to replace GOES-9 (launched May 23, 1998). In 2003, GOES-9 was transitioned to a location over the Western Pacific Ocean (205° W) to provide operational data from that region. GOES-11, launched May 3, 2000, is the primary operational on-orbit spare and are scheduled to replace GOES-10 in mid 2006.

GOES-12, launched on July 23, 2001, carries the first Solar X-Ray Imager (SXI) instrument. The SXI can 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 in the Imager is the addition of a 12.0 micrometer channel (which replaced the 13.3 micrometer channel) 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 was improved from 8 km to 4 km.

### **2. GOES-N Series**

The GOES-N satellite is at the launch site awaiting launch in November 2005. The GOES-O satellite has completed system integration and testing and is in ground storage at the spacecraft contractor. The GOES-O planned launch date is April 2007. The contractual option for the GOES-P satellite was exercised in the spring of 2003. GOES-P is currently completing integration and is ready to start system testing. GOES-P will be placed in ground storage in late 2006 and is planned to be launched in October 2008. The new GOES-N series ground system was delivered to the Satellite Operations Control Center in June 2001.

With minor modifications, the GOES-N series will utilize the Imager and Sounder payloads developed for the GOES-I series. Horizontal resolution of the Imager will be improved to 4 km in all IR channels, starting with GOES-O. At least two SXI instruments will fly on the GOES-N series.

The GOES-N series will upgrade the Weather Facsimile (WEFAX) service to a digital Low Rate Information Transmission (LRIT) system for distribution of data products. The GOES-N series will provide a dedicated Emergency Manager's Weather Information Network (EMWIN) for data products and warnings. An enhanced Data Collection System (DCS) will be provided allowing for the interrogation of more remote terminals.

In addition to these instrument and service upgrades, a number of GOES-N series spacecraft improvements are planned as well. Some of the most important changes include: the GOES-R satellite design life has been increased from seven to ten years; the power subsystem has

been upgraded to allow for continuous operations during eclipse; and the satellite attitude control system has been upgraded to utilize stellar inertial navigation allowing for improved Image Navigation and Registration (INR) performance.

### **3. GOES-R Series**

Planning for GOES-R continues to move forward in 2005. System Program Definition and Risk Reduction (PDRR) contracts are planned for award in October/November 2005. These contracts will support the definition of the end-to-end GOES-R system architecture and focus on risk reduction for identified high risk areas. The results of these PDRR contracts will also support preparations for the program implementation, or Acquisition and Operations (A&O), phase in 2007.

Four of the five instrument contracts were active in 2005 as well; the Hyperspectral Environmental Suite (HES), Solar Imaging Suite (SIS), and Space Environmental In-Situ Suite (SEISS) instruments are currently in the PDRR phase and the Advanced Baseline Imager (ABI) is in the A&O phase. The PDRR Request for Proposal (RFP) has been released for the fifth instrument, a Geostationary Lightning Mapper (GLM). The GLM PDRR award is anticipated in early 2006.

The new GOES-R instruments will advance operational environmental remote sensing technology by several decades. The technological advances will provide four-times the environmental information over a greater geographical location in less time, at higher resolutions, and with higher spectral content. The GOES-R program will meet NOAA's mission objectives for continuous observations of atmospheric, oceanic, climatic, solar, and space infrared and imaging data of the northern hemisphere surface and atmosphere; supporting all of NOAA's mission goals in ecosystems, climate, weather and water, and commerce and transportation.

The GOES-R Program schedule is provided which supports a GOES-R launch readiness date of September 2012.

# GOES-R Program Schedule

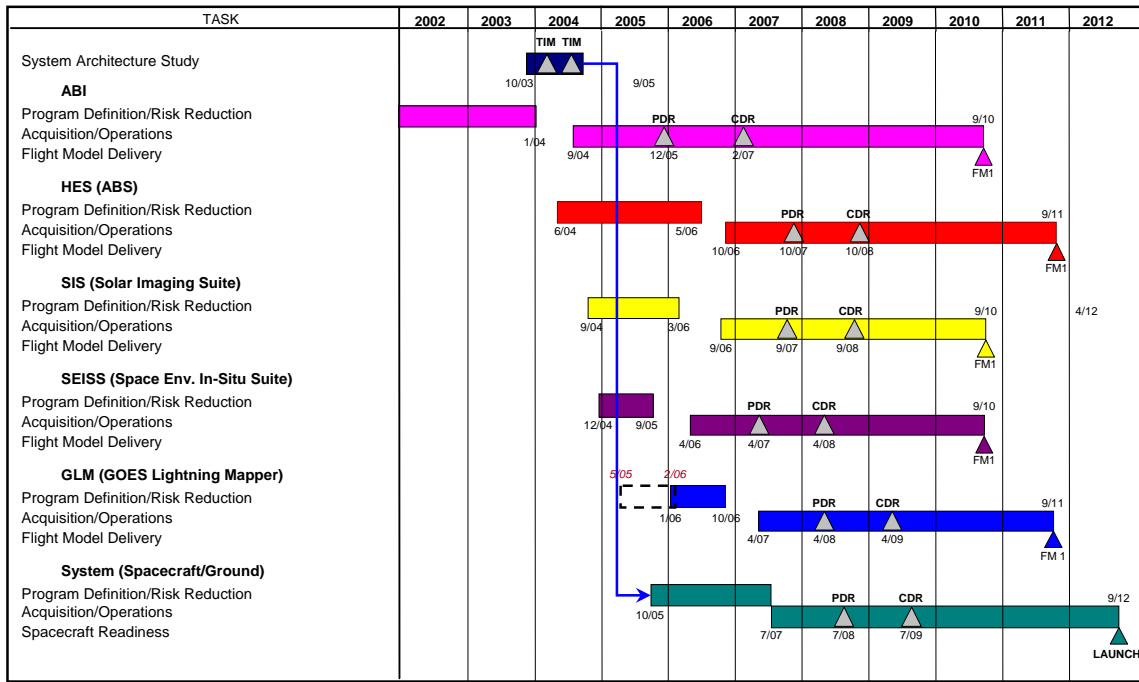


Figure 1: GOES-R Program Schedule (as of October 2005)