Polar Orbiting Environmental Satellite Ground System (POES GS) FY08OA Analysis

The operational analysis (OA) is an annual, in-depth review of POES GS program's performance based on the following:

- Customer Results
- Performance Measures
- Strategic and Business Results
- Financial Performance
- Innovation

The focus on this analysis will include a review FY08 performance, measures and results highlighting significant achievements/ performances. An historical review/ comparison of FY07OA will also be conducted to highlight significant information and contributions.

1.0 Customer Results

POES GS program is fully meeting the customer's needs and the program is delivering the services that it is intended.
POES Ground Systems primary customers are the Satellite Operations Control Center (SOCC), the Command Data Acquisition Stations (CDAS), and the Environmental Satellite Processing Center (ESPC).
POES Ground System provides services to ensure that the end-user systems receive the required data and it is timely and complete;

- Satellite monitoring and control
- Mission processing
- Analysis
- Distribution

POES GS continued to provide critical global information in a timely manner to the National Weather Service (NWS) for use in numerical weather models and the products they produce. POES satellites also monitored the global sea-surface temperature, indicating the location, onset, and severity of such events as El Nino as early as possible.

1.1 Performance Measures

POES GS is responsible for ensuring continuous data coverage to provide an uninterrupted flow of critical global information to its customers. Used for land ocean, atmospheric, and space environment applications in support of the meteorological, hydrological, marine, agricultural, transportation, and energy user communities. Timeliness and completeness of the data are the two key metrics by which customer results are judged in the POES GS environment.

Prevent any deterioration in POES data delivered meeting quality requirements (total data recovered) Current FY08 Performance Level 99.99%. Threshold 98.5% of POES data delivered meeting quality requirements (total data recovered) per quarter +1.49% as of September 30, 2008

Improve POES data delivered meeting timeliness requirements to above 95%. Current FY08 Performance Level 99.05%. Threshold 95% of POES data delivered which meets timeliness requirements per quarter. +4.05% as of September 30, 2008

2.0 Strategic and Business Results

POES GS program is meeting its own goals and objectives as well as those of the agency. Program management and controls are in place to ensure the program continues to meet its goals and objectives and monitor the performance of POES GS.

POES GS Supports NOAA International Agreements- POES GS directly supports NOAA's obligations under international agreements; the program is a leader in meeting mission objectives at a lower cost to the US Government by collaborating with international space agencies. This collaboration achieves economies of scale in the acquisition and distribution of global weather and water information, while promoting mutually beneficial international cooperation.

- Initial Joint Polar–orbiting Operational Satellite System (IJPS) began with the commissioning of the first Metop satellite to be launched.
- Many of the FY08 planned operational support activities have been completed and incorporated into the various NESDIS operational systems.
- During FY08, joint satellite operation exercises and testing were conducted between NOAA SOCC and EUMETSAT MCC. The Joint operations working group meetings are held regularly to discuss and refine the joint operation issues.

POES GS "Serves society's needs for weather and water information"- The POES GS program directly facilitates the NOAA Strategic Goal to "serve society's needs for weather and water information."

2.1 Program Management and Controls

POES ground system supports the POES satellite programs under the Office of System Development (OSD), Ground Systems Division (GSD) management. The POES GS Project Manager is directly responsible for;

- Coordinating and leading the government teams
- Preliminary and Critical Design Reviews
- Coordination meetings
- Status meetings
- Analyzing contractor's performance reports and task deliverables
- Writing monthly reports

These reports are provided to GSD senior management for review, highlight of risk areas, and review of risks and associated mitigation activities.

2.2 Monitoring Cost, Schedule and Performance

Cost – Key budget issues and risks are identified through analysis, variance analysis and needs analysis and these reviews and tracked by OSD management.

Schedule – The matrix annual operating plan is used to track key milestones. These milestones and schedules are developed by OSD.

Performance – Contract performance is monitored to support both budget and performance measurements.

2.3 Security

POES Ground System is supported by federal and contractor staff, government-owned equipment, and resides in a government facility. The contracted IT services are primarily for systems engineering support.
POES Ground System OA report, reports only Steady State (SS) activities, development, modernization and enhancement (DME) activities are tracked through separate reports. However, after development is completed, the POES Ground System provides IT security contractor support for at least twelve months after the system has transitioned to operational status.

The required security clauses have been inserted in the two IT services contracts by the Contracting Officer and independently verified by the Information Technology Security Officer (ITSO).

POES GS Certification and Accreditation (C&A) was completed on September 30, 2008. Security Control Testing was completed on May 19, 2008. The POES GS contingency plan was tested on January 15, 2008.

2.4 Performance Measures

Polar Acquisition Control System (PACS) Refresh- Completed Factory Acceptance Test (FAT) of the new HP Integrity PACS Telemetry Command Subsystem (TCS) and Communication Controller (CC). Installed and successfully acceptance tested the TCS and CC at SOCC. Wallops and Fairbanks Integrity TCS and CC will be installed and tested between October 2008 and April 2009. Multi-year project replacing the DEC/VAX/VMS systems at SOCC, Wallops, and Fairbanks with an HP Itanium/VMS system planned to be completed in December 2009.

Replacement Multi-mission Receiver Refresh- Acquisition completed. Fixed price contract awarded. Completed CDR and FAT. First Article Acceptance Test at Wallops is scheduled for December 2008. Critical Design Review (CDR) scheduled for October 2008. Task completion planned in FY09.

Replace Intelligent Multiplexer (IMUX) - IMUX digital data recorders were purchased and installed on three 13m antennas at Wallops and on three 13m antennas at Fairbanks. Procurement, integration, and testing at both CDAs in 2008. Awarded two years extended warranty at both CDAs.

3.0 Financial Performance

Major activities financed in FY08 included:

- Upgrade of 13 meter antennas at Wallops and Fairbanks
- Support to the JASON-2 launch in June 2008 and overall system End-to-End (ETE) testing of command and control functions, to ensure interoperability between NOAA and EUMETSAT facilities
- Building, installing, and testing two 5 meter antennas (Datron and Malibu) at Fairbanks for support to the COSMIC program.

- Replacing the VAX platform with an HP Integrity platform at SOCC and the CDAS.

For FY08, POES GS operational expenditures remain within the 10% monitoring threshold of the work plan budget.

4.0 Innovation to Meet Future Customer Needs

In FY08, work was performed on the following major tasks:

- Initial Joint Polar Satellite (IJPS) /Command Data Acquisition (CDA) and Satellite Operations Control Center (SOCC) Upgrades (CSU) transitioned to operational environment.
- Polar Acquisition and Commanding System (PACS) refresh with minimum impact when the existing software was ported to the new hardware
    - Replacing the Telemetry and Command System with new technology
- COSMIC support – downlink testing
- Intelligent Multipexor (IMUX) replacement digital data recorders were purchased, installed, and tested on the 13 meter antennas at Wallops and Fairbanks. Note: FY07 OA highlighted this innovation procedure.
- Contract awarded for replacement of multi-mission receivers on the 13 meter antennas.