

NPOESS Tools for Rapid Algorithm Updates

Kerry Grant

NPOESS Ground Segments Chief Engineer
Raytheon Company, Aurora, CO

Robert Hughes

NPOESS Algorithm and Data Products Deputy IPT Lead
Northrop Grumman Aerospace Systems, Redondo Beach, CA

Bonnie Reed

Cal/Val Scientist
General Dynamics - AIS, NPOESS Integrated Program Office

Gary Route

NPOESS IDPS Chief Engineer
Raytheon Company, Aurora, CO

Abstract

The National Oceanic and Atmospheric Administration (NOAA), Department of Defense (DoD), and National Aeronautics and Space Administration (NASA) are jointly acquiring the next-generation weather and environmental satellite system; the National Polar-orbiting Operational Environmental Satellite System (NPOESS). NPOESS replaces the current Polar-orbiting Operational Environmental Satellites (POES) managed by NOAA and the Defense Meteorological Satellite Program (DMSP) managed by the DoD. The NPOESS satellites carry a suite of sensors that collect meteorological, oceanographic, climatological, and solar-geophysical observations of the earth, atmosphere, and space. The ground data processing segment for NPOESS is the Interface Data Processing Segment (IDPS), developed by Raytheon Intelligence and Information Systems. The IDPS processes both NPP and NPOESS satellite data to provide environmental data products to NOAA and DoD processing centers operated by the United States government. Northrop Grumman Aerospace Systems Algorithms and Data Products (A&DP) organization is responsible for the algorithms that produce the EDRs, including their quality aspects.

As the Calibration and Validation activities move forward following both the NPP launch and subsequent NPOESS launches, rapid algorithm updates may be required. Raytheon

2010 IEEE International Geoscience and Remote Sensing Symposium

and Northrop Grumman have developed tools and processes to enable changes to be evaluated, tested, and moved into the operational baseline in a rapid and efficient manner. This presentation will provide an overview of the tools available to the Cal/Val teams to ensure rapid and accurate assessment of algorithm changes, along with the processes in place to ensure baseline integrity.

Bibliography

Poster: Grant, Kerry. "NPOESS Interface Data Processing Segment Product Generation." Poster presented at the American Geophysical Union 2009 Fall Conference, San Francisco, California, December 16, 2009.

Poster: Grant, Kerry; Heckman, Gary; Route, Gary; Mulligan, Joe; Ripley, Marge. "Features of the Deployed NPOESS Ground System." Poster presented at the American Geophysical Union 2009 Fall Conference, San Francisco, California, December 16, 2009.

Poster: Grant, Kerry; Reed, Bonnie; Hughes, Robert. "NPOESS Tools for Rapid Algorithm Updates." Poster presented at the American Geophysical Union 2009 Fall Conference, San Francisco, California, December 16, 2009.

Paper: Grant, Kerry; Musetto, Michael; Andreas, Nancy. "A Comparison Between AVHRR, MODIS, and VIIRS." Paper presented at the American Geophysical Union 2008 Fall Conference, San Francisco, California, December 19, 2008.

Poster: Grant, Kerry. "NPOESS Interface Data Processing Segment Architecture." American Meteorological Society 2009 Annual Meeting. Poster presented at the American Meteorological Society 2009 Annual Meeting, Phoenix, Arizona, January 14, 2009.