The Joint Polar Satellite System (JPSS) Program Office is the supporting organization for the Suomi National Polar Orbiting Partnership (S-NPP) satellite that was successfully put into orbit on October 28, 2011. S-NPP carries the following sensors: VIIRS, CrIS, ATMS, OMPS, and CERES. These instruments study the Earth’s weather, oceans, and atmosphere. A team of scientists and engineers from all over the United States document, monitor and fix errors in software code or documentation with the algorithm change process (ACP) to ensure the success of the S-NPP mission by making sure that the best data products are being provided to users.

What is an Algorithm Discrepancy Report (DR)?

ADR records are records that document errors in software code or documentation that should be fixed to ensure the success of the S-NPP mission. Each discipline is assigned a JPSS Algorithm Manager (JAM) to help track their ADRs and work with the appropriate cal/val team to make sure that each ADR is being taken through the Algorithm Change Process (ACP) so that its issue is solved and the ADR is closed.

To accommodate the need for quicker turnarounds in the implementation of code fixes, we have developed the Accelerated Release Cycles (ARCs) that will take the place of the previous major and minor software builds. The ARCs began with the TTO of the MX 8.3 build in March 2014, and each subsequent ARC has gone operational approximately every ten weeks afterward.

External User Relationships

The chart to the right shows the various civilian and military organizations that access and benefit from S-NPP’s data products for scientific and educational applications.

With a free subscription, the public can access data from all five of S-NPP’s sensors from the Comprehensive Large Array-Data Stewardship System (CLASS) via their website:

http://www.class.ncdc.noaa.gov/

Each algorithm comes with a readme that provides specific guidance on how to use each data product. If users find discrepancies, they can contact the point of contact within each readme, who can submit an ADR to be put through the ACP.

Below are images taken by SNPP sensors for weather related applications.

Algorithm Change Process (ACP)

The calibration/validation (cal/val) team finds an error that is in need of correcting and an Algorithm Discrepancy Report (ADR) is submitted to document the issue.

DRs are reviewed at the Discrepancy Report Action Team (DRAT) meetings and the DR is either accepted to authorize work on fixing the issue, or rejected.

A fix is proposed and the change package is submitted for DPES functional and regression code testing to ensure that the proposed fix will not disrupt any other related code or documentation.

The Algorithm Engineering Review Board (AERB) reviews the proposed fix and the board members approve or reject the suggested change.

The document change is made or the updated code fix is implemented into the next available software build cycle.

Acronyms

ASRC: Arctic Slope Regional Corporation
ATMS: Advanced Technology Microwave Sounder
CERES: Clouds and the Earth’s Radiant Energy System
CrIS: Cross-Track Infrared Sounder
DPES: Data Products Engineering and Services
NJO: NOAA JPSS Program Office
OMPS: Ozone Mapping Profiler Suite
TTO: Transition to Operations
VIIRS: Visible Infrared Imaging Radiometer Suite