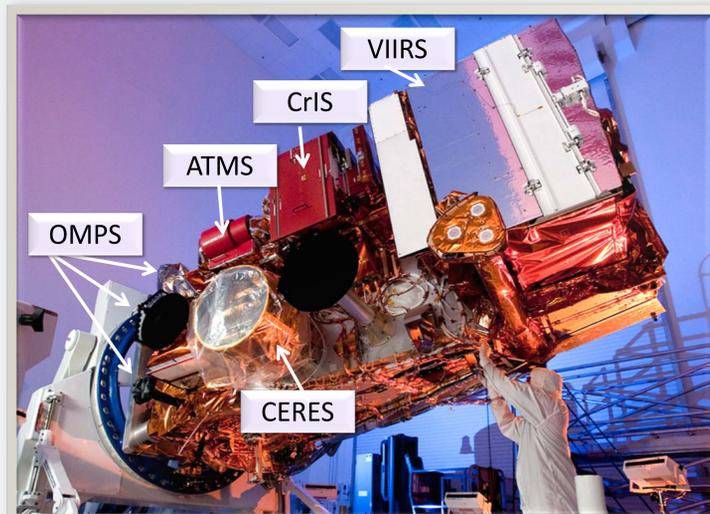




# The Joint Polar Satellite System (JPSS) Algorithm Change Process (ACP) and the Suomi National Polar Orbiting Partnership (S-NPP) Satellite's External Users



Ashley Griffin, ASRC, JPSS DPA



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.

## New Accelerated Release Cycles (ARCs)

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 will begin with the TTO of the MX 8.3 build, scheduled for the mid-march timeframe, and each subsequent ARC will TTO approximately every ten weeks.

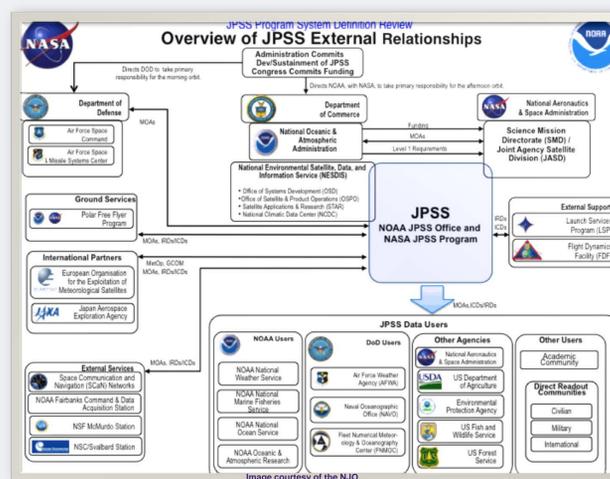
## External User Relationships

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 read me that provides specific guidance on how to use each data product. If users find discrepancies, they can contact the point of contact within each read-me, who can submit a DR to be put through the ACP.



## Product Enhancements

With the extensive information that we have accumulated while studying S-NPP's data products during the Intensive Cal Val (ICV) stage of the program, we are now able to explore the possibility of using the knowledge gained to enhance data products in the program's future satellite missions.

Enhancements are improvements or changes to the algorithm or data product that make it exceed JPSS-1 requirements or that change a product that is already meeting requirements. Enhancements may include:

- (1) improvements in science performance
- (2) changes to implementation that provide a long term benefit to the JPSS Program

Enhancements that are reviewed and deemed appropriate for development and implementation will be worked through the algorithm change process after approval.

The new satellites under development in the JPSS program that may benefit from our enhancements will be JPSS-1, which will launch in the 2nd quarter of FY17 and JPSS-2, which is set to launch in the 1st quarter of FY22.

## Algorithm Change Process (ACP)

The calibration/validation (cal/val) team finds an error that is in need of correcting and a Discrepancy Report (DR) 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  
 VIIRS: Visible Infrared Imaging Radiometer Suite