



# Effective NPP Data Product Integration Achieved with the NPOESS Community Collaborative Cal/Val Program

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Cal/Val=Calibration/Validation | EDR=Environmental Data Record | IPO=Integrated Program Office | NPOESS=National Polar-orbiting Operational Environmental Satellite System | NGST = Northrop Grumman Space Technology | RDR=Raw Data Record | NPP = NPOESS Preparatory Project | RDR=Raw Data Record | SDR=Sensor Data Record | SME = Subject Matter Expert

## Objectives

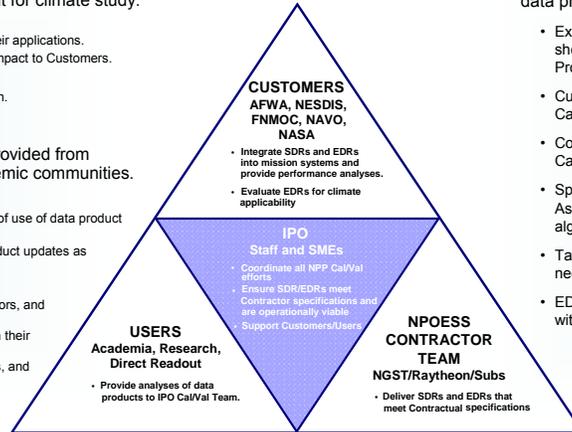
Accomplish the NPOESS Mission of providing environmental data to meet civilian requirements and military missions, and provide insight for climate study.

- Ensure Product Operational Viability.
  - Provide the NPOESS Customers with validated, useful data products for their applications.
  - Provide investigations into product defects and inconsistencies of specific impact to Customers.
- Provide Independent Verification of NGST results.
  - Provide technical insight and oversight of NGST implementation of algorithm.
  - Provide scientific validation of products.
  - Coordinate issue resolution to meet Program priorities.

Facilitate the fullest possible exploitation of the unique data provided from NPP/NPOESS by the science, commerce, climate, and academic communities.

- Support Data Integration for Mission Systems.
  - Provide Cal/Val beyond basic contractual compliance required for initiation of use of data product by primary mission systems.
  - Act as liaison between NGST and operational community to coordinate product updates as required.
- Support User Community.
  - Provide general Program information to all users about data products, sensors, and algorithms.
  - Provide technical support to broad research and development community in their assessment and exploitation of NPOESS data.
  - Support NASA and NOAA Climate initiatives by sharing data, software tools, and information as needed.

## The NPOESS Community includes Customers, Contractors, and Users



## Guiding Philosophy

Sensor Performance and Characterization are the cornerstone of all data products.

- Experience and resources from Past Operational and Science Missions should be fully exploited and incorporated in the NPP and NPOESS Programs.
- Customer and User Satisfaction is achieved through participation in the Cal/Val process.
- Community Proficiency with Operational Algorithms is essential to efficient Cal/Val and Community buy-in.
- Space-borne assets, Global models, Surface Networks and Data Assimilation provide a cost effective comprehensive view of sensor and algorithms performances.
- Targeted Campaigns and Special Studies will be planned and executed as needed.
- EDR Performance and corrective actions will be handled in accordance with established Program priorities.

## Activities Required Through Cal/Val Phases

Cal/Val Phase	Pre-Launch	LAUNCH	Early Orbit Check-out	Intensive Cal/Val	Long-Term Monitoring
RDR	RDR Development and Verification		RDR On-Orbit Verification	Establish Sensor Stability	Sensor Long-Term Monitoring
SDR	SDR Development and Verification		SDR Verification, Tuning, and Initial Validation	SDR Validation	SDR Detailed Validation & Maintenance
EDR	EDR Development and Verification		EDR Verification and Initial Validation	EDR Validation	EDR Detailed Validation & Improvement

## NPOESS Community Cal/Val Discipline Teams

As the cal/val program progresses through RDRs, SDRs, and EDRs, expertise needed will evolve from Contractor Sensor Engineers to Government Users. NGST is leading the RDR and SDR teams and the IPO is leading the EDR teams. The IPO Selected Cal/Val Product Area Discipline Leads in March 2008. These Leads have professionally recognized experience with remotely sensed satellite data and are considered highly qualified by their respective communities to lead their Discipline's cal/val effort. These Leads will form their own teams of SMEs and will work with the designated NGST Leads to plan, coordinate, and execute the activities of the entire cal/val team.

Sensor	SDR Leads	EDR Leads	Team
ATMS	Ed Kim, NASA/GSFC Bill Blackwell, MIT/LL Giovanni DiAmici, NGST	N/A	MIT/LL, NASA/GSFC, NGST, NOAA/STAR, USU/SDL
CERES	N/A (EDRs produced by NASA for NASA community)	N/A	N/A
CrIS	Denise Hagan, NGST Gail Bingham, USU/SDL	Chris Barnett, NOAA/NESDIS/STAR Denise Hagan, NGST	Aerospace, ITT, NGST, NOAA/JCSDA STAR, NASA/JPL GSFC LaRC, USU/SDL, Navy/NRL, UMBC, UWI
OMPS	Scott Janz, NASA/GSFC James Done, NGST	Larry Flynn, NOAA/NESDIS/STAR James Done, NGST	Aerospace, BATC, Harvard, NGST, NASA/GSFC, Navy/NRL, NOAA/STAR, Raytheon
VIIRS	Lushalan Liao, NGST Frank DeLuccia, Aerospace	Ocean – Bob Arnone, NRL; Patty Pratt, NGST Land – Jeff Privette, NOAA/NESDIS/NCDC; Alain Sei, NGST Cloud & Aerosol – David Starr, NASA/GSFC; Mike Plonski, NGST Imagery & Cloud Mask – Tom Kopp, Aerospace; Mike Plonski, NGST	Aerospace, AFWA, NASA/GSFC JPL, Navy/FNMOC NAVO, NRL, NGST, NIC, NIST, NOAA/NCDC STAR, ORNL, Raytheon, SDSU, UAZ, UMCP, UMIam, UWI



The Cal/Val Team is working with the Operational Customers to understand how NPP data will be used for Mission Success.

## Centrals are actively participating in the NPP Cal/Val Program

- Preparing product integration strategy and interaction to develop IPO understanding of data application and overall mission.
- Identifying NGST specifications that are not at the level of detail or stratification necessary for Mission Success.
- Reviewing Cal/Val plans, development of change integration process at NGST, and EDR Performance Assessments.
- Communicating identified issues with product generation, format, availability, etc. with IPO as needed.
- Participating in Discipline-specific Cal/Val teams, through Central SMEs, to exploit in-depth operational experience.
- Participating on Operational Algorithm Teams.

## Integration Achieved Through Participation