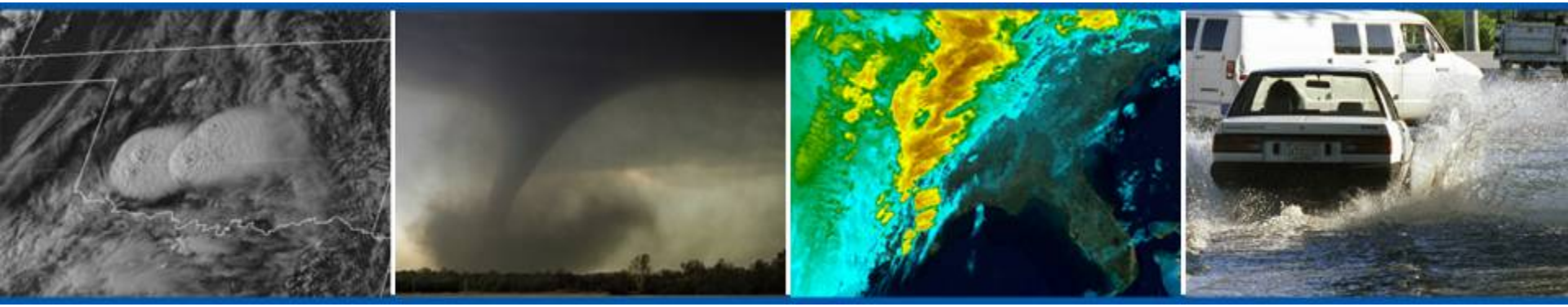
Cooperative Institute Director's Meeting



Alfred M. Powell, Jr.

Director

Center for Satellite Applications & Research

Satellite and Information Services

National Oceanic and Atmospheric Administration

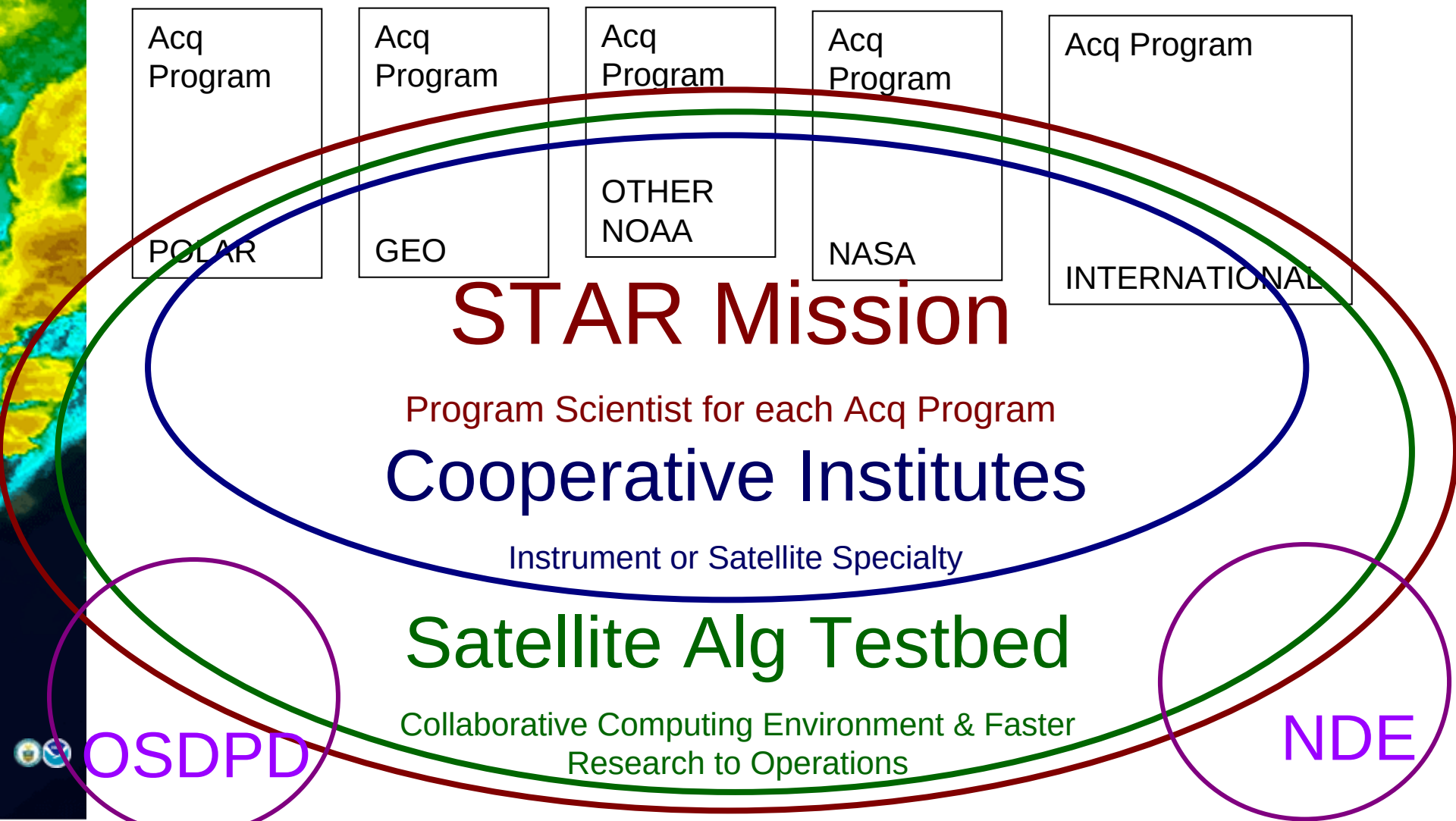
CICS at University of Maryland

18 June 2008

Topics

- Collaborations:
  - GOES-R, NASA, Cooperative Institute's and others
- Challenges
  - Personnel turnover in the next 5 years – succession planning
  - MOBY – Marine Optical Buoy
  - International Collaborations (Ukraine, China, India, Japan, Europe)
- Strategy for the Future
  - One primary initiative for STAR, many NOAA goal oriented ones
- Important STAR Briefings
  - **HES Briefing (2 part: OSSE and HES External Studies Summary)**
  - **National Calibration Center (NCC)**
  - NOAA General OSSE Capability
  - Satellite Algorithm Testbed (Collaborative Environment extension)
  - **Satellite Operational Algorithm Readiness Program (SOAR)**

SOAR PROGRAM (rough draft)



Critical STAR alternatives in PPBES

Title	Description	Goal Team(s)					Program
		EC	CL	WW	CT	MS	
4 OceanWatch	Ocean Remote Sensing: OSVW, MOBY, OC, Altimetry, CoastWatch, OceanWatch, SAR, Sea Surface Salinity			x			WWS (Marty Ralph)
Advanced Satellite Applications, Research and Product Processing	Atmospheric and Land Remote Sensing: Acquisition-Independent funds, Research Component and Cal/Val components via Satellite Algorithm, Application, Instrument and Validation Testbed and a Satellite Operational Algorithm Readiness office					x	SSG-SSV (Kathy Kelly)
Dedicated Data Assimilation	Accelerate and improve the quantitative use of research and operational satellite data in weather, ocean, climate and environmental analysis and prediction models.					x	EMP (TBD, Alan Leonardi/OAR)

In addition to these "top 3", there are 18+ initiatives we are involved in across the office and across all goal teams

Advanced Satellite Applications, Research and Product Processing Initiative

- This program provides a **Satellite Algorithm, Application, Instrument and Validation Test Bed** where federal and academic researchers will be able to access NOAA and non-NOAA operational satellite and in-situ data streams as well as the most promising satellite and in-situ data streams from research agencies. The Test Bed will have both competitive research opportunities and directed research opportunities. Competitive research activities will include the development of algorithms to remap, blend, intercalibrate and generate products from multiple satellite instruments, including algorithms to produce long-term climate data records consisting of current and past sensors, as well as the ability to quantify the readiness of an algorithm/application to provide operational benefits.

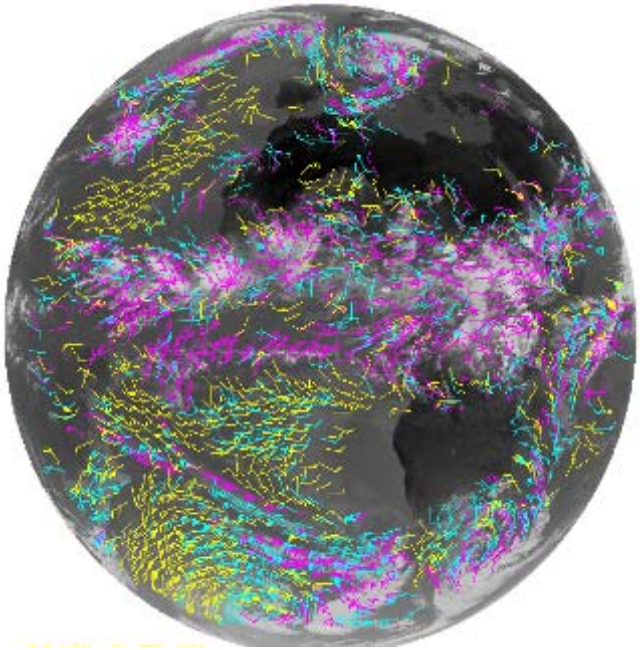
- This program provides a ***Satellite Operational Algorithm Readiness (SOAR) capability*** which will provide NOAA programs and acquisition offices a single point of contact to develop and transition satellite algorithms into operations. This will allow significant leveraging to occur across several acquisition programs, including the research activities of the Satellite Algorithm, Applications, Instrument and Validation Test Bed, to reduce costs and complexities of the current stovepipe approach

- This program provides an increase of capabilities to the current ***CAL/VAL Program***, and will leverage infrastructure from the Satellite Algorithm, Applications, Instument and Validation Test Bed . The increase to the *CAL/VAL Program* supports the NOAA component of a NOAA-NIST collaborative program and the next decade requirements of the international Global Space-based InterCalibration System (GSICS).

Algorithm Working Group

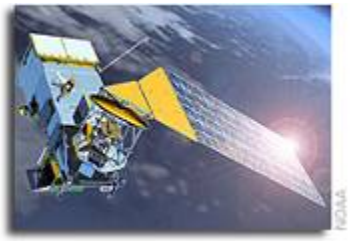
PURPOSE: To develop, test, demonstrate, validate and provide algorithms for end-to-end GOES-R Ground Segment capabilities and to provide sustained life cycle validation and product enhancements

- **Experienced:** Developed the algorithms for NOAA's satellite programs since their inception over 40 years ago
- **Knowledgeable:** Understand how to calibrate, validate and verify algorithms using techniques appropriate for instrument, product, and spectral characteristics
- **Efficient:** Capable of generating proxy data sets for all GOES-R instruments (ABI, GLM, Space Wx) for use in program activities
- **Coordinated:** Will develop, host, demonstrate, document, and deliver algorithms to meet program specifications
- **Consistent:** Established AWG management processes with a defined schedule that is aligned with GOES-R Program to provide status and track progress
- **On Track:** Demonstrated clear progress toward our algorithm development plan
  - 100% of algorithm design reviews have been completed
  - Numerous proxy and simulated datasets have been created
  - First versions of some product algorithms have been completed
  - First draft of ATBDs for all products will be completed by September 2008

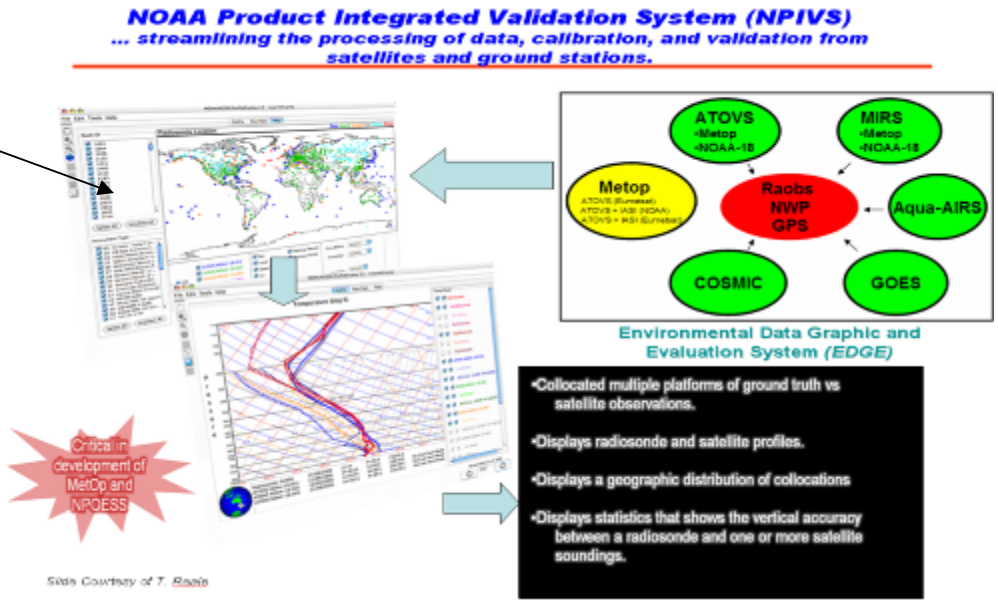


OUTCOME: Proven and demonstrated algorithms, monitoring and validations of instrument and product performance, algorithm enhancements, new applications and user preparation and training.

NPOESS Govt SDR and EDR Cal/Val

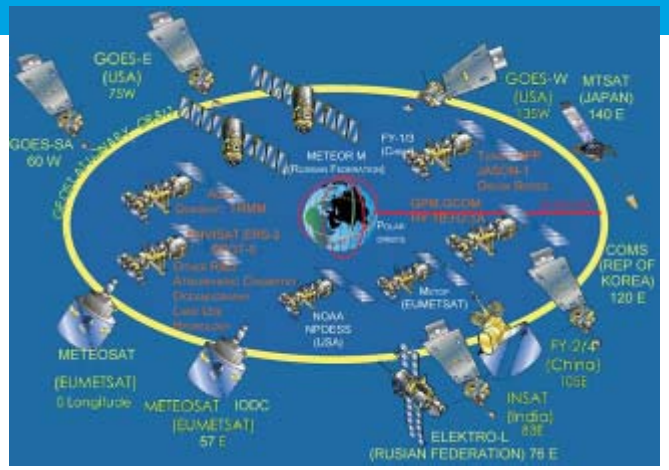


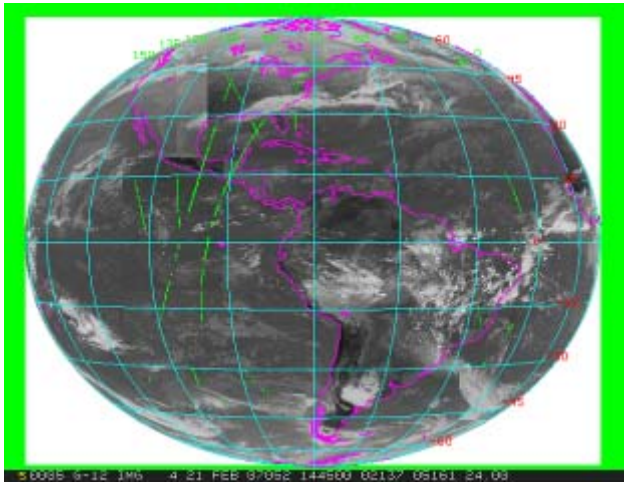
- STAR is involved in the newly IPO organized government led NPOESS Cal/Val effort
- Chris Barnet is the government lead for CrIS/ATMS EDR validation
  - Leveraging IASI and NDE
  - Related IGS tasks
- Larry Flynn leads OMPS SDR/EDR Validation.

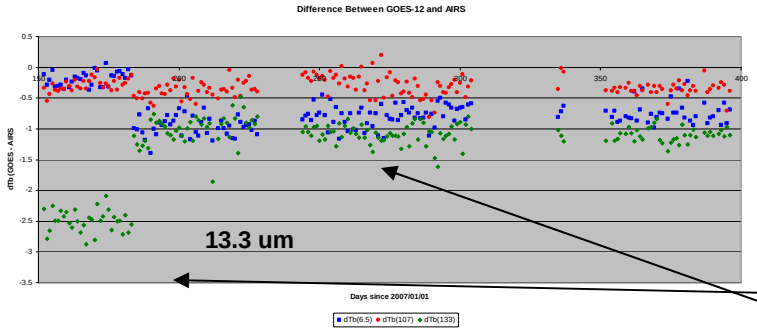


Global Space-based Inter-Calibration System (GSICS)

- Part of WMO Space Programme
  - GSICS Implementation Plan and Program formally endorsed at CGMS 34 (11/06)
- NOAA is the coordination center and chairs the GSICS executive panel
- Goal - Enhance calibration and validation of satellite observations and to intercalibrate critical components global observing system for weather and climate applications







Application example – AIRS collocated with GOES monitors the performance of GOES imager. Note large difference In time series before decontamination. Some channels difference become larger after decontamination (6.5, 10.7 um)

JCSDA Accomplishments

- JCSDA Strategic and Program Plans
  - MOU signed at last!
  - New agreed upon near term priorities and metrics
  - MOB endorsement for ocean data assimilation as part of program
  - New MOB chair to be appointed from DOD (Col Zettlemoyer)
  - Annual Science Meeting and SSC June 10-12
  - Deputy Director (Steve Goodman, Acting, handoff from Fuzhong Weng from Jim Yoe) until permanent Senior Scientist for Satellite Data Assimilation hired in STAR front office (ZP5)
- Funding extramural community and JCSDA partners
  - 11 FFO continued projects
  - 1 new GPS/RO project
  - 19 JSDI tasks
- Community Radiative Transfer Model (CRTM) Upgrade
  - Recognized as the significant JCSDA result that benefits all partners
  - TransitionZeeman splitting for DMSP sensors
  - Historical sensors for climate reanalysis
  - Snow and sea ice emissivity model resulting in positive impacts

Remember to discuss MEDEA

- Also sabbaticals

Briefings to be scheduled for Mary Kicza

- National Calibration Center
- Hyperspectral Environmental Sounder (HES)
  - HES OSSE Capability
  - HES ‘External Science’ Analysis Briefing
- Satellite Operational Algorithim Readiness Program (SOAR)
  - Cross-cutting program scientists and science teams

What is ?