Sounder PEATE Status

NPOESS Preparatory Project (NPP)

California Institute of Technology
Jet Propulsion Laboratory

April 28, 2011

This work was carried out at the Jet Propulsion Laboratory, California Institute of Technology under a contract with the National Aeronautics and Space Administration.
Topics

Sounder PEATE Staffing

Application Software and Processing System Status

Hardware Status

Plans for the Future
But first…

JPSS in the age of austerity.
An experiment in saving money through restructuring.
... JPSS formed out of the ashes of NPOESS – February 2010

- Effects all aspects of NPP program
- IPO is out
- All IPs are retained!
- GRAVITE is out … no it’s in, and they will provide IPs

- The role of the PSOE as a functional intermediary between the SDS/PEATEs and the Science Teams is out. … the connection is more direct!

- The role of the PEATES and Science Teams with the newly constituted JPSS Software Change Control Board is TBD!
The potential and importance of cultivating a synergistic relationship between the Sounder PEATE and the Sounder Science Team is more important than ever.  
- PSOE advocacy is gone
- JPSS / NOAA relationships w/ respect to Science Teams, SDS and PEATEs is still forming

The relationship between NOAA and JPSS appeared tenuous at last UC-NCF
Now... back to our regularly scheduled content.
Sounder PEATE Staffing

Task Manager
Steve Friedman

System Engineer
Ruth Monarrez

Configuration Manager
Vicky Myers

System Administrator
John Gieselman

Quality Assurance Engineer
Section 388 PPQA Team

Science Support
Evan Fishbein (science concepts and Science Team Rep)
Nikita Pougatchev (science - Retrieval Algorithm Support)
TBD (additional Science Support)

Sounder PEATE Science Software (SPSS)
Virgil Adumitroaie
Rodney Hoffman
Sung-Yung Lee (IDPS)
Evan Manning
Quyen Nguyen
Irina Tkatcheva
Andres Tamayo

Sounder PEATE Data Center (SPDC)
Brian Foster
Shakeh Khudikyan
Irina Tkatcheva

Software Integration and Test
Robert Ando
Andres Tamayo

Sounder PEATE Operations
Michael Starch

Sounder PEATE Data Center (SPDC)
Irina Tkatcheva

Database Administrator
John Burke
Current Sounder PEATE Operational Status

- Basic system features now available include:
  - Data ingest/archive
  - Granule maps (for MetOp-A: IASI, MHS, AMSU-A)
  - Calibration Subset (MetOp-A IASI)
  - Analysis PGE (IASI, CrIS)
  - Simultaneous Nadir Observation (SNO) – many platforms
  - SARTA and OSS as PGEs and stand-alone
  - Validation (RaObs) Match-up (basic)

- Supporting PGEs include
  - Augmentation
  - Concatenation
Currently operating with Build 6.1

- Supports many processing threads
- Capably supported NCT-3 Part 2 testing
  - Ingested and archived all products
  - Ran many PGEs in typical production threads
  - Previously ran SNOs for all IASI/AIRS (before IASI format change)

Current Development Areas:

- Wrapping-up Build 7
  - Full-spectrum IASI CalSubset
  - RaObs Match-up to IR (NPP, Aqua, MetOP-A)
- Starting Build 8 Development
  - Analysis (Aqua)
  - CalSubset basics for (CrIS) – MatLab and RTP3
NPP Sounder PEATE Status: 28 April 2011

AIRS Spring 2011 Science Team Meeting
SDR and EDR code support

- **Sourced codes ingested and archived**
  - IDPS production source code – Build 1.5.4 and earlier
  - Science software prototypes ingested and stored
  - IDPS code ported GRAVITE (Linux)
    - In the process of obtaining SDR code installation
    - Awaiting release of EDR code

- **Exercising the code:**
  - Science code modules run locally in stand-alone and as PGE
  - EDR IDPS code run on mini-IDPS
Example Sounder PEATE Production Threads

2011-04-01

- ECMWF Forecast
- RTP3 S PEATE Product
- RTP3 S PEATE Product
- RTP3 S PEATE Product
- RTP3 S PEATE Product
- Augmentation PGE
- Augmentation
- RTP3 S PEATE Product

- Various L1 Inputs Source HDF
- RTP3 S PEATE Product
- Various L2 Inputs Source FMT
- Computed Radiances from OSS and SARTA
- EDR+IPs

- Validation Match-Ups

- SNO Match-Up (RTP3) Source "AIRS"
- SNO Match-Up (RTP3) Source "GH5"

- Analysis Match-Up

- Simultaneous Nadir Observations

- GRIB L1 Input Source
- AIRS L1 Input Source
- RAObs (RTP3)
- RAObs (RT3)

- PREPBUFR to RTP3

- Augmentation can be exercised at any time.
Hardware Status
Facility Upgrades

• PEATE Processing System (partial list)
  • Development Server (1 Sun Blade - 16 processors)
  • Compute Servers (5 Sun Blades – 80 total processors)
  • Data Archive – 420 TB RAID (320 TB active)
  • Additional Storage – 200 TB RAID
  • System Backup (a true backup system)

• NPP Sounder Science Team may access the PEATE system to acquire data products in the archive or to utilize PEATE compute resources (when available)
  • To do so, you must obtain valid JPL LDAP User ID!
    – Contact Steve Friedman for details
Hardware Status

Current Configuration

Sounder PEATE FY11 Configuration

Operational Environment

*100 TB to be added soon for 420 TB Total

Notes:
Operating Systems:
All servers are CentOS 5.5, Linux except for the two archive servers and the User Storage Server which are Solaris 10 x86.

2011-04-28
Planned Work Activities

• **Code Development**
  • Finish code development for pre-launch
  • Planned code for post launch:
    • Calibration Subset (as soon as algorithm is refined)
    • Level 3 – goal w/in a year

• **Document features and capabilities (for Science Team)**

• **Support NCT4 (maybe NCT5) testing**
Software Development continues after launch:
- CrIS Calibration Subset (*first post-launch product*)
- Gridded “L3-like” Products (Daily, Multi-Day, Monthly)
- Specialized IPs, not included in standard EDR IP set
- Other unique products/tools requested by Science Team

Enhancing the IDPS Code Base:
- Investigate upgrades to existing code
- Upgrades (that improve EDR climate quality) submitted to the PSOE
- Investigate alternate retrieval algorithms, as needed

NASA’s current plans for the PEATES:
- Minimal Operational Life: 2 years after launch
- Compete follow-on via ROSES