STAR JPSS 2015 Science Team Meeting Land / Cryosphere Breakout Session

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Objectives

- NOAA operational land and cryosphere products
  - Current operational products
  - Ongoing algorithm improvement efforts
  - Relationship with other JPSS land production systems i.e. NASA
- Product validation
  - Ongoing validation resources and preparation for JPSS-1
  - Leveraging resources with other NOAA, US and international activities
  - Coordinated validation approach
- System development and new programmatic directions
  - NOAA Enterprise System and non-NOAA assets
- NOAA Operational Applications
**Agenda (am)**

**Product overviews**
- 8:45 Surface reflectance – Belen Franch
- 9:00 Vegetation index EDR and NDE Green Vegetation Fraction – Marco Vargas
- 9:15 Vegetation Health – Felix Kogan
- 9:30 Land surface albedo – Bob Yu
- 9:45 Land surface temperature – Bob Yu
- 10:00 Active fire – Ivan Csiszar

**10:15 Break**
- 10:30 Surface type – Jerry Zhan
- 10:45 Sea ice characterization and thickness – Jeff Key
- 11:00 Sea ice concentration – Yinghui Liu
- 11:15 Sea ice surface temperature – Mark Tschudi
- 11:30 Binary snow cover – Peter Romanov
- 11:45 Snow fraction - Peter Romanov and Igor Appel
- 12:00 NASA SIPS Land Production and QA – Sadashiva Devadiga / Miguel Román

**12:15 Lunch break**
Product validation and long-term monitoring

- 1:00 Validation datasets and interagency / international coordination - Miguel Román
- 1:30 JPSS 1 land validation plan overview – Ivan Csiszar
- 1:45 GOES-R land validation activities and coordination with JPSS – Bob Yu
- 2:00 Land product characterization system – Kevin Gallo
- 2:15 Land long-term monitoring system – Lori Brown / Tony Reale

NOAA Enterprise system

- 2:30 Land / cryosphere enterprise product assessment– Ivan Csiszar / Jeff Key
- 2:45 Non-NOAA data sources for operational land / cryosphere applications: mission status, data access and plans Marco Vargas / Bob Yu / Jeff Key / Ivan Csiszar

3:00 Break

NOAA operational applications of JPSS land and cryosphere products

- 3:15 NCEP – Mike Ek
- 3:30 National Ice Center– Sean Helfrich

Open discussion and wrap-up

- 3:45 - 5:00 Overarching topics such as re-processing, gridding, CLASS RIP archives, Direct Broadcast, summary and action items
NOAA Operational Product Status

• Evaluation and update of the heritage IDPS algorithms is practically complete
  • Products achieved validated stage 1 as defined by the NOAA JPSS program
  • Only remaining IDPS code change package is aerosol / SR (to implement validated algorithm in operations)
  • Reactive maintenance continues
  • Long-term monitoring in place / transitioning to systematic production
• NOAA ESPC (NDE) operational implementation
  • Additional / added-value products
    ➢ Green Vegetation Fraction – fully operational
    ➢ Vegetation Health – transition to operations
    ➢ Active Fire – re-allocated to NDE – transition to operations
    ➢ Snow Fraction – in development
    ➢ Phenology (Risk Reduction) – in development
• JPSS Program Director’s direction letter on algorithm development
• Program Level CCR to re-direct all Priority 3 and 4 products to ESPC
• NOAA Enterprise Algorithm Development
  • Common algorithms / ground system implementation options to leverage resources and ensure best algorithm solutions
    ➢ Targets NOAA satellite assets i.e. JPSS and GOES-R
      » Often results in the implementation of GOES-R algorithms to process JPSS data
      » “Risk Reduction” algorithm package transitioning into operations
      » Land products not part of this effort, but assessment is ongoing

• Use of non-NOAA assets for critical NOAA missions
  • In some regards the extension of NOAA Enterprise development

• New directions and framework for the Science Team’s activities
  • Reactive maintenance and long-term monitoring of operational products
  • Algorithm development towards ESPC implementation of enterprise solutions; testbeds, demonstration products, active user involvement
  • Different review / TTO process / documentation – follow SPSRB process

• Algorithm deliveries to STAR Algorithm Integration Team (AIT)
Moving forward

- JPSS-1 (-> to be renamed to NOAA-20 once operational) preparation
  - Suite of algorithms include significant improvements
    - TOC NDVI, full fire mask and FRP – implemented for Suomi NPP
    - JPSS-1 test datasets are becoming available
  - JPSS-1 validation plans
    - draft plans delivered; review / feedback ongoing
    - final plans due December 31
- NOAA – NASA ST coordination and collaboration
  - Algorithm development
    - keep algorithms in sync (i.e. SR, Active Fire)
    - seeking common algorithm solutions where possible (i.e. LST)
    - different algorithm solutions where necessary
    - NASA-unique features (SDR, output format etc.) to be addressed
  - Validation
    - leveraging approaches and resources
- JPSS-2 and beyond assessment
User involvement and added value products

- Close linkages between code cal/val and risk reduction activities
  - Risk reduction is also a platform for further algorithm changes
- Close collaboration with critical NOAA users
  - NOAA NCEP and other modeling groups – data assimilation
  - National Ice Center, Hazard Mapping System, CPC etc.
- Key Proving Ground Initiatives
  - e.g. Fire and Smoke, Land Data Assimilation
  - Joint Center for Satellite Data Assimilation as testbed
- Direct Broadcast CSPP and IPOPP and algorithm updates
- Development of new / level-3 and beyond products
  - GVF in operation
  - Gridded/composited LST, albedo etc.; LAI/fPAR
- Reprocessing
  - ongoing for select VIIRS bands / products (i.e. ocean)
  - planning / implementation for additional SDR and products