NOAA JPSS Monthly Program Office

AMP/STAR FY19 TTA

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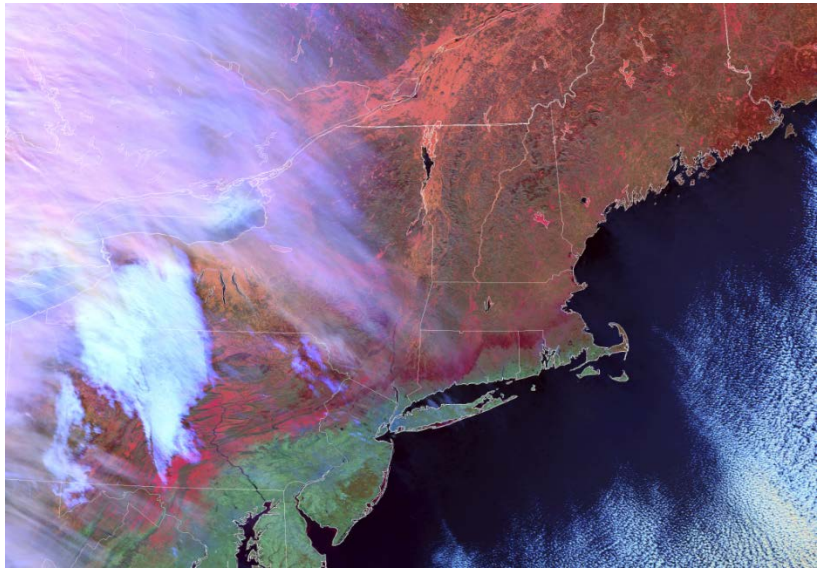
Highlights from the Science Teams



VIIRS Imagery Captures Northeast Ice Storm

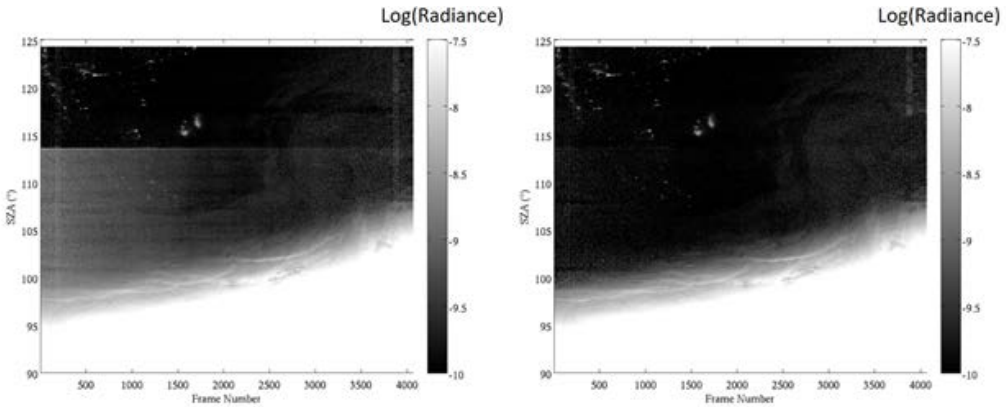
In late January an ice storm hit the northeast, coating portions of Connecticut in a thick layer of ice. A blog post by the VIIRS Imagery team captures the details of how the 1.6 um VIIRS band can be used to discriminate ice, which is reflective in the visible, but not the SWIR from snow. The image above of the Day Snow/Fog RGB shows the ice accumulation as a dark maroon band stretching through the state.

http://rammb.cira.colostate.edu/projects/npp/blog/index.php/uncategorized/ice-ice-baby/

New VIIRS Stray light Correction

The Operational S-NPP VIIRS DNB data production removes stray light by using the static stray light correction look up tables generated during 2014-2015. But a recent study by STAR scientists identified remnant stray light in the DNB image over the southern hemisphere. The remnant stray light can affect the night cloud reflectance and air glow data quality, and mask city lights.

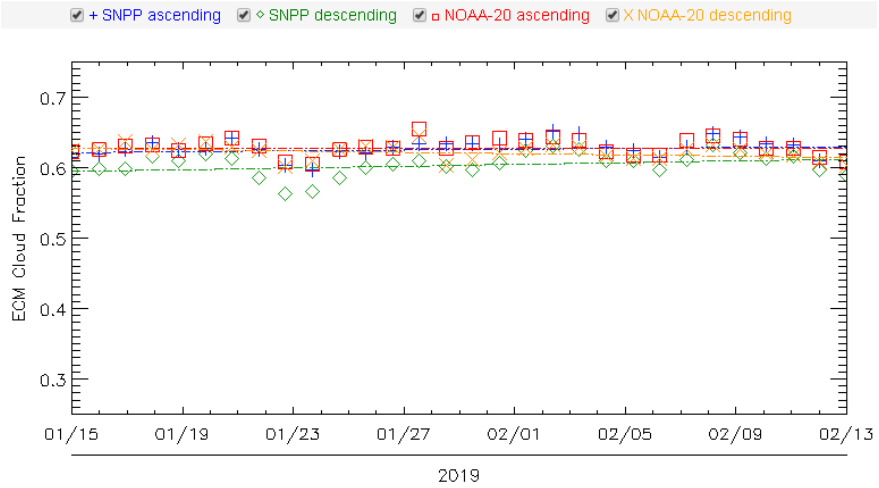
Recently, an improved stray light correction tool was further developed at STAR to remove the remnant stray light for S-NPP VIIRS DNB. This significantly reduces the residual stray light. The VIIRS SDR team will work with the JPSS program to implement the updated stray light correction scheme in the operational SNPP DNB data production.



(a) Current SNPP DNB Data at IDPS

(b) With new stray light correction developed by NOAA/STAR

Highlights from the Science Teams



New Cloud Product Monitoring Tool

The JPSS VIIRS Cloud Team at CIMSS has developed a new web page to monitor VIIRS cloud products (http://cimss.ssec.wisc.edu/clavrx/viirs_img/). The page was designed to help more quickly identify strengths and weaknesses in cloud products and to monitor any unnatural variations that may point to an error. To help identify outlier conditions, the page includes tools to monitor weekly, monthly, and seasonal trends in cloud products. The web site also includes visualization tools to display static imagery or animations of recent cloud products.

NPROVS Paper Accepted for Publication

A paper entitled "*On the accuracy of Vaisala RS41 versus RS92 upper-air temperature observations.*", Sun, B. S. Schroeder, A.Reale, M. Pettey, and R. Smith was accepted for publication in the Journal of Atmospheric and Oceanic Technology. The paper demonstrates the use of NPROVS in the assessment of ground truth radiosonde observations supporting the ongoing global transition from Vaisala RS92 to RS41 radiosonde instrument type.

This represents an expansion of the original NPROVS objective to assess derived satellite sounding product using radiosondes. The report includes results based on dual (simultaneous) RS41 and RS92 launches including subsets targeted with satellite overpass (some funded by JPSS) and routinely stored in NPROVS. These include fully characterized GRUAN radiosondes; GRUAN is currently transitioning their reference radiosonde from RS92 to RS41. The overall conclusion is that RS41 represents an overall improved moisture (relative humidity) capability along with improved temperature aloft associated with improved radiation induced error correction.

Highlights from the Science Teams

ACSPO passes ORR

ACSPO v2.60 data passed PO.DAAC operational readiness ORR on 25 Feb 2019 and have been officially released to the public on 27 Feb 2019. Four new DOI's have been minted by PO.DAAC, two for NPP (L2P, L3U) and two for N20 (L2P, L3U) products. Data can be accessed through Drive , OPeNDAP, THREDDS, and web services. Although 2.60 data have been available from PO.DAAC following their operational implementation in NDE on 7 Nov 2019, this official review and release marks an important milestone for both NOAA JPPS SST and NASA PO.DAAC Teams. The PO..DAAC remain the primary outlet for physical oceanography products in Group for Hi-Res SST (GHRSST) users in GHRSST data formats.

Ocean Color Paper Published

Drs. Xiaoming Liu and Menghua Wang are the authors for a paper just published in Remote Sensing. The complete citation of the paper is as follows: Liu, X. and M. Wang, "Filling the gaps of missing data in the merged VIIRS SNPP/NOAA-20 ocean color product using the DINEOF method".

Merging VIIRS ocean color products derived from the S-NPP and NOAA-20 significantly increases the spatial coverage of daily images. The two VIIRS sensors on the SNPP and NOAA-20 have similar sensor characteristics. Merging VIIRS SNPP and NOAA-20 ocean color data almost removes the gaps of missing pixels due to high sensor-zenith angles and high sun glint contamination, and also significantly reduces the gaps due to cloud cover. However, there are still gaps of missing pixels in the merged ocean color data.

In this study, the DINEOF method is applied on the merged ocean color data to completely reconstruct the missing pixels. Gap-filled daily Chl-a images reveal many large-scale, dynamic, and mesoscale ocean features that are invisible in the original SNPP or NOAA-20 images.

Accomplishments

- Delivery Algorithm Packages (DAPs) - Mission Unique Products:
    - ATMS SDR DAP (ATMS SNPP/J1 earth scene reflector emissivity correction in IDPS, ADR8632/CCR3971) delivered to DPES on 2/11/2019
    - OMPS SDR DAP (Update NOAA-20 OMPS Calibration Tables, ADR8816/CCR4303) delivered to DPES on 2/7/2019, re-delivered the DAP (fixed the naming convention issues) to DPES on 2/21/2019
    - Completed 2016 VIIRS V2 SDR reprocessing

- DAPs - Enterprise Products:
    - STAR submitted HISA DAP to OSPO for code review on 2/14/2019
    - GAASP emergency update DAP (fixed some typo's in the Longitude metadata in 4 of the netCDF template files) delivered to NDE on 2/11/2019
    - VIIRS Surface Reflectance Patch (fixed latitude/longitude logic so that the system doesn't record -999.3 values for the last scanline global attributes) delivered to NDE on 2/15/2019
    - STAR Ocean Color team delivered all NOAA-20 OCC data to CoastWatch
    - STAR VI and GVF Group Website (Beta Version) Released (https://www.star.nesdis.noaa.gov/smcd/viirs_vi_web/index.php)

- IDPS Builds Checkouts:
    - Submitted Mx5 I&T VIIRS SDR evaluation results on 2/7/2019, submitted STAR summary report on 2/15/2019, with OMPS detail report on ADR8784.

Accomplishments – JPSS Cal Val Supports

- NOAA-20/S-NPP Operational Calibration Support:
  - S-NPP Weekly OMPS TC/NP Dark Table Updates: 02/05/19, 02/12/19, 02/20/19, 02/26/19
  - NOAA-20 Weekly OMPS TC/NP Dark Table Updates: 02/05/19, 02/12/19, 02/20/19, 02/26/19
  - S-NPP Bi-Weekly OMPS NP Wavelength & Solar Flux Update: 02/12/19, 02/26/19
  - NOAA-20 Monthly VIIRS StrayLight LUTs Update: 02/12/19
  - S-NPP Monthly VIIRS LUT Update of DNB Offsets and Gains: 02/12/19
  - NOAA-20 Monthly VIIRS LUT Update of DNB Offsets and Gains: 02/12/19

- NOAA-20 Cal/Val Maturity Review
  - STAR submitted Feb-2019 Maturity Review presentation materials (for LST, LSA, and NCOMP products) to review panel members

- NOAA-20 products operational since 3/7/2019 (NDE 2.0.15 build)
  - All MiRS products, except SFR
  - Enterprise products: Cloud Mask, Cloud Phase/Type, Cloud Daytime Cloud Properties (DCOMP), Cloud Height, Cloud Base Height, Aerosol Optical Depth and Particle Size Parameter, Aerosol Detection, and Volcanic Ash
  - V8TOZ, and V8TOS
  - VIIRS Polar Winds
  - NUCAPS products: AVTP, AVMP, Ozone, OLR

Accomplishments - Transition to Operations and AMP

- SNPP/N20:
  - JPSS Transition to Operations Project Milestones since Dec 2018
    - S-NPP MIRS, S-NPP JPSSRR v2.0, S-NPP VIIRS Veg Health V 2.0 (1KM and 4KM), Reformatting Toolkit (Patch for ACSPO N20), S-NPP VIIRS Polar Winds V2.1, S-NPP NUCAPS 4.3 (1/31)
  - Termination of distribution of 18 of 42 IDPS-generated EDRs (12/18)
  - B Guenther submitted ADR 8998 “VIIRS SDR Data Set needed to understand coastal ocean color” to the DRAT on 2/20/2019 and is working to submit a CCR in order to obtain a cost estimate and approval to proceed.
- JPSS-2/3/4:
- Requirements/Engineering:
  - T Ibironke updated Software Requirements Specification Parameter File 8 (SRSPF) to reflect APID designations for JPSS-2 products that were written into the file. Additional work will be done to get the official copy of the SRSPF through the CM process.
  - B Reed reviewed the ESPDS ECRB package that included new requirements for a development/integration area for STAR and OSPO and forwarded the proposed changes to STAR and OSPO PALs for their review and comments. If/when this development area is implemented, algorithm changes and deliveries to NDE should become easier and faster.
- EPS-SG project support
  - Gathered draft data product requirements from LORWG (Nov 2018) and compiled into draft L1RD requirements and submitted to OPPA (2/19/2019)
  - Reviewed and submitted comments on OPPA’s draft L1RD (2/11/2019)
  - Developed strategy for estimating computing resources for data products (2/25/2019)
- Other
  - Several AMP members (J. Weinrich, J Evans, B Reed, A Griffin, L Dunlap) participated and/or presented at the 2019 American Meteorological Society conference in Phoenix, AZ on Jan 6-11. Bonnie Reed and Jeff Weinrich also presented at the JPSS Short Course on Jan 6. J Evans presented, “Elements of a Scalable Infrastructure for Weather Forecaster Access to JPSS Data,” and presented it in Session 5B, “Special Session on JPSS Series Satellite System—Part II.”
  - Coordination with NWS: In December 2018/January 2019, J Evans has been supporting NWS forecaster in the evaluation of JPSS products by supplying product / algorithm details for AMSR-2 Sea Surface Winds, VIIRS Active Fires, and VIIRS Imagery.

Upcoming Cal/Val Maturity Reviews

- March 21, 2019 (February/March Maturity Review):
  - Beta/Provisional Maturity:
    - Nighttime Cloud Optical and Microphysical Properties (NCOMP)
  - Provisional Maturity:
    - Land Surface Temperature
    - Surface Albedo
    - Surface Reflectance
    - Green Vegetation Fraction
    - Vegetation Index
    - Vegetation Health

- April Maturity Review:
  - Provisional Maturity:
    - Cryosphere products: Snow Cover, Sea Ice, IST
    - Snow Fall Rate
  - Validated Maturity:
    - Sea Surface Temperature

- May Maturity Review:
  - Validated Maturity:
    - Cloud products: ECM, Cloud Phase/Type, ACHA, CBH, DCOMP, and NCOMP
    - Aerosol product: AOD, and ADP
    - Volcanic Ash
    - VIIRS Polar Winds

Upcoming Milestones/Deliveries

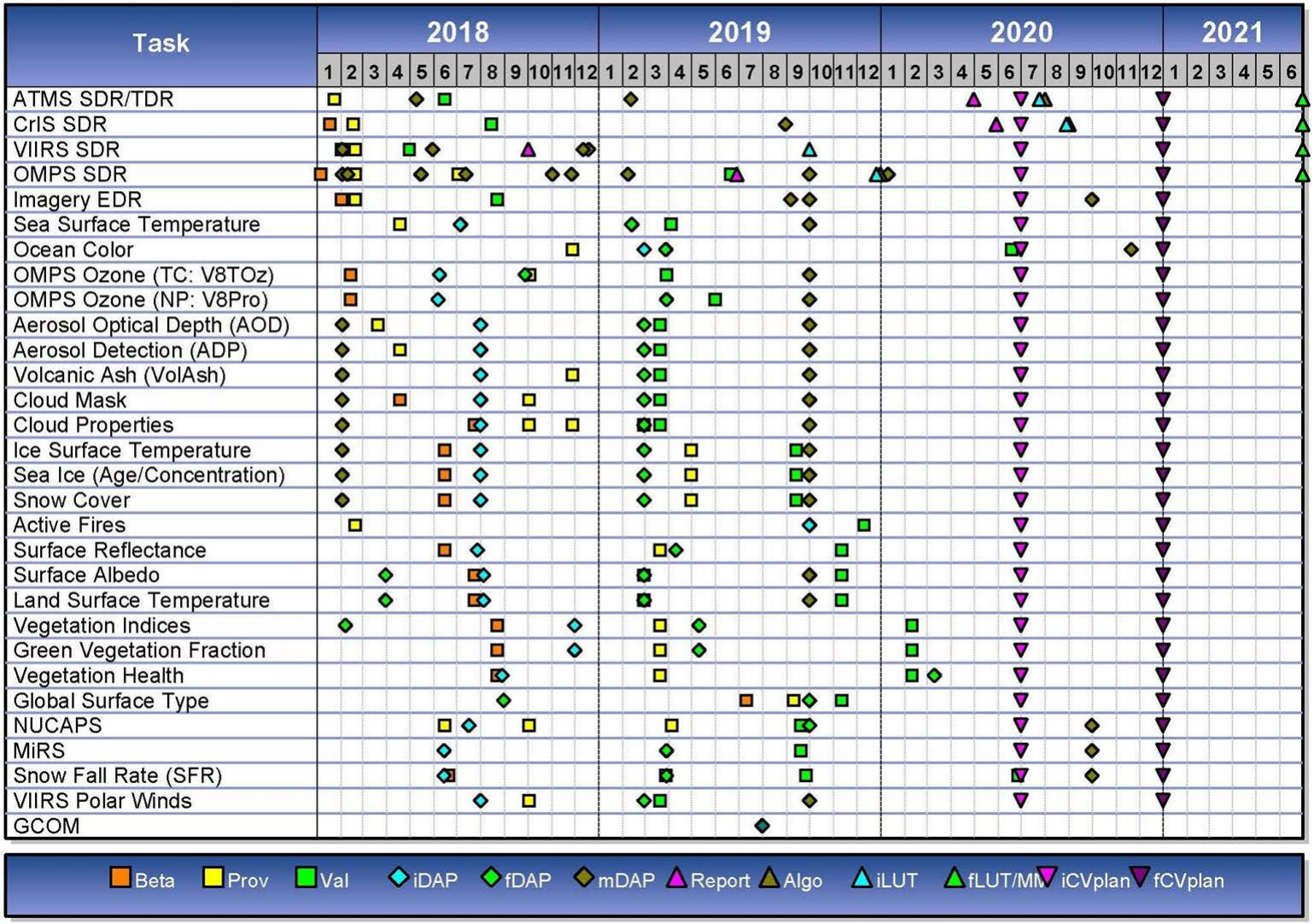
- JSTAR Code/LUT Deliveries:

  – DAP to DPES:
    - May-19: OMPS LUTs delivery (for validated maturity)
    - Aug-19: CrIS Polarization correction (ADR8760)
    - Sep-19: TC Imagery

  – NOAA-20 Algorithm DAP to NDE:
    - Mar-19: EPS algorithms (Clouds, Cryosphere, Aerosol, Volcanic Ash, LST/LSA), VIIRS Polar Winds – Final DAP
    - Mar-19: MiRS/SFR – final DAP
    - Apr-19: Ocean Color code DAP to CoastWatch
    - Apr-19: Surface Reflectance, V8Pro – Final DAP
    - May-19: NVPS (VI & GVF) – Final DAP
    - Aug-19: SST - ACSPO 2.70
    - Sep-19: NUCAPS – Final DAP
    - Sep-19: I-band Active Fires

STAR JPSS Schedule

STAR JPSS Schedule: TTA Milestones



FY19 STAR JPSS TTA Milestones

FY19 TTA Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Algorithm Updates DAPs/LTM				
ATMS TDR/SDR: Reflector emissivity correction (code & PCT update)	Sep-19	Sep-19	02/11/19	
CrIS SDR: Polarization correction algorithm implementation	Sep-19	Sep-19		
VIIRS SDR: J2 Pre-launch sensor characterization report	Oct-18	Oct-18	10/01/18	
VIIRS SDR: GEO parameter side dependence	Mar-19	Mar-19	12/11/18	
OMPS SDR: J2 Pre-launch sensor characterization report	Jun-19	Jun-19		
NOAA-20 EDR Final DAPs (JRR, SST)	Jun-19	Jun-19	02/12/19: ACSPO 2.61	
NOAA-20 EDR Final DAPs (MIRS, NUCAPS)	Sep-19	Sep-19		
AST18 (Annual Surface Type)	Sep-19	Sep-19		
Updated GCOM/AMSR-2 GAASP package deliver to NDE	Jul-19	Jul-19		
ICVS-Application Website (Severe Weather Watch with JMAPPER)	Sep-19	Sep-19		

FY19 STAR JPSS TTA Milestones

FY19 TTA Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 Cal/Val				
Validated Maturity: NOAA-20 CrIS SDR	Oct-18	Oct-18	10/02/18 (Review Date) 08/14/18 (Effective Date)	
Validated Maturity: NOAA-20 OMPS SDR	Dec-18	Jun-19		Flight tables upload delayed due to gov shutdown
Provisional Maturity: NOAA-20 EDR Products (JRR/VPW/Trace Gas)	Oct-18	Oct-18	**10/02/18: Provisional Maturity:** Cloud Mask, Cloud Phase/Type, Cloud Height (CTT/CTP/CTH), Cloud Base Height, Polar Winds, NUCAPS (Ozone/CO/OLR), OMPS Ozone (V8TOz) **11/27/18: Provisional Maturity:** Volcanic Ash, Daytime Cloud Optical and Microphysical Properties (DCOMP)	
Provisional Maturity: NOAA-20 EDR Products (LST/LSA/Vegetation)	Mar-19	Mar-19		
Provisional Maturity: NOAA-20 EDR Products (OC)	Apr-19	Apr-19	11/27/18: Ocean Color Beta/Provisional Maturity	
Validated Maturity: NOAA-20 EDR Products (JRR/VPW)	Jun-19	Jun-19		
Validated Maturity: NOAA-20 EDR Products (SST)	Jun-19	Jun-19		
Validated Maturity: NOAA-20 EDR Products (MIRS, NUCAPS)	Sep-19	Sep-19		

FY19 STAR JPSS TTA Milestones

FY19 TTA Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Operational Support				
S-NPP: Weekly OMPS TC/NP Dark Table Updates	Weekly	Weekly	**10/02/18, 10/10/18, 10/16.18, 10/23/18, 10/30/18, 11/06/18, 11/14/18, 11/20/18, 11/27/18, 12/04/18, 12/11/18, 12/18/18, 01/02/19, 01/08/19, 01/15/19, 01/23/19, 01/29/19, 02/05/19, 02/12/19, 02/20/19, 02/26/19**	
S-NPP: Bi-Weekly OMPS NP Wavelength & Solar Flux	Bi-Weekly	Bi-Weekly	**10/10/18, 10/23/18, 11/06/18, 11/20/18, 12/04/18, 12/18/18, 01/02/19, 01/15/19, 01/29/19, 02/12/19, 02/26/19**	
S-NPP: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	**10/16/18, 11/14/18, 12/13/18, 01/15/19, 02/12/19**	
NOAA-20: Weekly OMPS TC/NP Dark Table Updates	Weekly	Weekly	**10/02/18, 10/10/18, 10/16.18, 10/23/18, 10/30/18, 11/06/18, 11/14/18, 11/20/18, 11/27/18, 12/04/18, 12/11/18, 12/18/18, 01/02/19, 01/08/19, 01/15/19, 01/23/19, 01/29/19, 02/05/19, 02/12/19, 02/20/19, 02/26/19**	
NOAA-20: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	**10/16/18, 11/14/18, 12/18/18, 01/15/19, 02/12/19**	
NOAA-20: Monthly VIIRS Stray Light LUT Update	Monthly	Monthly	**10/16/18, 11/14/18, 12/18/18, 01/15/19, 02/12/19**	

FY19 STAR DAP and JPSS PSDI Milestones

S-NPP Enterprise Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
S-NPP: Enterprise Processing System (Aerosol, Volcanic Ash, Clouds, and Cryosphere)				
-- Final DAP	Nov-17	--	11/21/17	Completed
S-NPP: Vegetation Indices				
-- Initial DAP	Jan-18	--	6/17/18	Completed
-- Final DAP	Jan-18	--	2/6/18	Completed
-- Delta DAP	Jan-18	--	3/15/18	Completed
-- Operations	Aug-17	--	9/26/18	Completed
S-NPP: Land Surface Temperature and Land Surface Albedo				
-- Initial DAP	Feb-18	--	11/15/17	Passed Code Review: Feb-2018
-- Final DAP	Feb-18	--	4/2/18	Completed
-- ORR	May-18	--	11/9/18	Completed
-- Operations	Jul-18	Apr-19		
S-NPP: Vegetation Health (VH-1km)				
-- Initial DAP	Nov-17	--	11/13/17	Completed
-- Final DAP	Nov-17		11/13/17	Completed
-- ORR	Nov-17	--	10/05/18	Completed
-- Operations	Dec-17	--	01/31/19	Completed
S-NPP: Vegetation Health (VH-4km)				
-- Final DAP	Nov-17	--	11/13/17	Completed
-- ORR	Nov-17	--	10/05/18	Completed
-- Operations	Dec-17	--	01/31/19	Completed

Note: All Blue schedule slips on this and the following milestone slides are a result of the Government shutdown and “replan”.

FY19 STAR DAP and JPSS PSDI Milestones

S-NPP Enterprise Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
S-NPP: ATMS Snowfall Rate				
-- Final DAP	Jun-18	--	06/14/18	Completed
-- CDR	Dec-18	--	6/20/2018	Completed
-- SCR	Jan-19	--	6/20/2018	Completed
-- ARR	Feb-19	--	6/20/2018	Completed
-- ORR	Apr-19	--	11/02/19	Completed
-- Operations	Jun-19	--	01/31/19	Completed
S-NPP: OMPS Limb Profiler Products				
-- Initial DAP	TBC	TBC		
-- Final DAP	TBC	TBC		
-- EDR and SDR ORR	Dec-16	May-19		
-- Operations	Mar-17	Jul-19		

FY19 STAR DAP and JPSS PSDI Milestones

NOAA-20 Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20: ACSPO SST				
-- CDR	Oct-16	--	10/27/16	Completed
-- Initial DAP	Nov-17	--	11/16/17	Completed
-- Final DAP	Jul-18	--	7/5/18	Completed
-- SCR	Aug-18	--	Waived	Waived
-- ORR	Mar-19	--	Waived	Waived
-- Operations	Apr-19	--	11/6/18	Completed
NOAA-20: Active Fires				
-- Initial DAP	Oct-18	--	11/21/17	Completed
-- Final DAP	Oct-18	--	11/21/17	Completed
NOAA-20: OMPS Ozone: V8TOS				
-- Initial DAP	Jun-18	--	06/01/18	Completed
-- Final DAP	Jun-18	--	06/01/18	Completed
-- ORR	Jul-18	--	12/02/18	Completed
-- Operations	Aug-18	Mar-19		
NOAA-20: OMPS Ozone: V8TOz				
-- Initial DAP	Jun-18	--	05/04/17; 06/08/18	Completed (v3r0; v3r1)
-- Final DAP	Jun-18	--	09/27/18	Completed (LUT only)
-- ORR	Jul-18	--	12/02/18	Completed
-- Operations	Aug-18	Mar-19		
NOAA-20: OMPS Ozone: V8Pro				
-- Initial DAP	Jun-18	--	06/02/17	Completed (v3r0)
-- Final DAP	Apr-19	--	06/06/18	Completed (v3r2)
-- ORR	Jul-18	May-19		
-- Operations	Aug-18	Jun-19		

FY19 STAR DAP and JPSS PSDI Milestones

NOAA-20 Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20: MiRS				
-- CDR	Oct-16	--	10/27/16	Completed
-- Initial DAP	Aug-18	--	06/14/18	Completed
-- SCR	Jun-18	--	6/1/18	Completed
-- ARR	Sep-18	--	4/18/18	Completed
-- Final DAP	Dec-18	Mar-19		
-- ORR	Feb-19	--	Feb-19	Completed
-- Operations	Mar-19	Mar-19		
NOAA-20: NUCAPS including CrIS OLR				
-- CDR	Oct-16	--	10/27/16	Completed
-- Initial DAP	Aug-18	--	07/16/18	Completed
-- SCR	Aug-18	--	01/25/19	Completed
-- Operations (Temp/H20 profiles)		Mar-19		
-- ARR	Sep-18	Sep-19		Dates relate to CO2 and CH4 components
-- Final DAP	Apr-19	Dec-19		Dates relate to CO2 and CH4 components
-- ORR	Jun-19	Dec-19		Dates relate to CO2 and CH4 components
-- Operations	Jul-19	Jan-20		Dates relate to CO2 and CH4 components
NOAA-20: Surface Reflectance				
-- CDR	Oct-16	--	10/27/16	Completed
-- Initial DAP	Aug-18	--	07/27/18	Completed
-- SCR	Oct-18	Mar-19		Current NPP algorithm also runs for J1. No software updates needed so far (or even expected) for J1. Completed?
-- ARR	Nov-18	Apr-19		
-- ORR	Feb-19	Jul-19		
-- Final DAP	Apr-19	Apr-19		
-- Operations	Jun-18	Aug-19		

FY19 STAR DAP and JPSS PSDI Milestones

NOAA-20 Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20: VIIRS Polar Winds				
-- CDR	Oct-16	--	10/27/16	Completed
-- Initial DAP	Aug-18	--	07/31/18	Completed
-- SCR	Jul-18	--	07/31/18	Completed
-- Final DAP	Aug-18	--	07/31/18	Completed
-- ARR	Nov-18	--	10/02/18	Completed
-- ORR	Dec-18	--	Waived	Waived
-- Operations	Fev-19	Mar-19		
NOAA-20: Enterprise Processing System :Aerosol, Volcanic Ash, Clouds, and Cryosphere				
-- Initial DAP	Aug-18	--	07/31/18	Completed
-- CDR	Oct-16	--	10/27/16	Completed
-- SCR	Mar-18	--	10/25/18	Completed
-- Operations (Clouds, Aerosols)		Mar-19		
-- ARR	Aug-18	Mar-19		
-- Final DAP	Jan-19	Feb-19		
-- ORR	Aug-18	Jun-19		
-- Operations	Oct-18	Jul-19		
NOAA-20: Enterprise Processing System: Global Gridding LST, and LSA				
-- Initial DAP	Aug-18	--	08/04/18	Completed
-- CDR	Mar-18	--	10/22/18	Completed
-- TRR	Jul-18	Apr-19		
-- SCR	Sep-18	Jul-19		
-- ARR	Dec-18	Aug-19		
-- Final DAP	Jan-19	Feb-19		
-- ORR	Mar-19	Nov-19		
-- Operations	Jun-19	Dec-19		

FY19 STAR DAP and JPSS PSDI Milestones

NOAA-20 Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20: Vegetation Health				
-- CDR	Oct-16	--	10/27/16	Completed
-- Initial DAP	Aug-18	--	08/28/18	Completed
-- SCR	Oct-18	--		Completed
-- ARR	Feb-19	Mar-19		
-- Final DAP	Mar-20	Mar-20		
-- ORR	Apr-19	Jun-19		
-- Operations	May-19	Jul-19		
NOAA-20: Green Vegetation Fraction				
-- Initial DAP	Nov-18	--	TBC	Completed
-- Final DAP	May-19	May-19		
-- CDR	Oct-16	-	10/27/16	Completed
-- SCR	Oct-18	--		Completed
-- ARR	Feb-19	May-19		
-- ORR	Apr-19	Aug-19		
-- Operations	Jun-19	Sep-19		
NOAA-20: Ocean Color				
-- Initial DAP	Nov-18	Nov-18		Need Update
-- Final DAP	Mar-19	Mar-19		Need Update
-- Updated DAP	Nov-20	Nov-20		Need update
-- CDR	Oct-16	-	10/27/2016	Completed
-- SCR	Jan-19	Dec-19		
-- ARR	Mar-19	Mar-20		
-- SRR	Apr-19	Apr-20		
-- ORR	Apr-19	Apr-20		
-- Operations	Jun-19	Jun-20		

FY19 STAR DAP and JPSS PSDI Milestones

NOAA-20 Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20: Vegetation Indices				
-- Initial DAP	Nov-18	--	TBC	Completed
-- Final DAP	May-19	May-19		
-- CDR	Oct-16	-	10/27/2016	Completed
-- SCR	Dec-18	--		Completed
-- ARR	Feb-19	May-19		
-- ORR	May-19	Aug-19		
-- Operations	Jun-19	Sep-19		
NOAA-20: ATMS Snowfall Rate				
-- Initial DAP	Jun-18	--	06/14/18	Completed
-- Final DAP	Dec-18	--	TBC	Completed
-- CDR	Dec-18	Apr-19		
-- SCR	May-19	Mar-19		
-- ARR	Jun-19	Apr-19		
-- ORR	Aug-19	Jun-19		
-- Operations	Oct-19	Aug-19		
NOAA-20: Microwave Tropical Cyclone Products				
-- Initial DAP	TBC	Apr-19		
-- Final DAP	TBC	Jun-19		
-- CDR	Oct-16	-	10/27/2016	Completed
-- SCR	Apr-19	Apr-19		
-- ARR	Oct-19	Oct-19		
-- ORR	Dec-19	Dec-19		
-- Operations	Feb-20	Jan-20		

FY19 STAR DAP and JPSS PSDI Milestones

NOAA-20 Blended Product Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20: Blended Products Blended Ozone				
-- Initial DAP	TBC	TBC		Need Update
-- Final DAP	TBC	TBC		Need Update
-- SCR	Aug-17	TBD		No update provided
-- ORR	Jul-18	TBD		
-- Operations	Oct-18	TBD		
NOAA-20: Blended Products Blended SST				
-- Initial DAP	TBC	TBC		Need Update
-- Final DAP	TBC	TBC		Need Update
-- SCR	Aug-18	TBD		No update provided
-- ORR	May-19	TBD		
-- Operations	Jun-19	TBD		
NOAA-20: Blended Products Blended Biomass Burning				
-- Initial DAP	TBC	TBC		Need Update
-- Final DAP	TBC	TBC		Need Update
-- SCR	Oct-18	TBC		No update provided
-- ORR	Jun-19	May-19		
-- Operations	Jul-19	Jun-19		
NOAA-20: Blended Products Blended Snow and Ice				
-- Initial DAP	TBC	TBC		Need Update
-- Final DAP	TBC	TBC		Need Update
-- SCR	Aug-18	Feb-19		No update provided
-- ORR	May-19	Apr-19		
-- Operations	Jun-19	May-19		

FY19 STAR DAP and JPSS PSDI Milestones

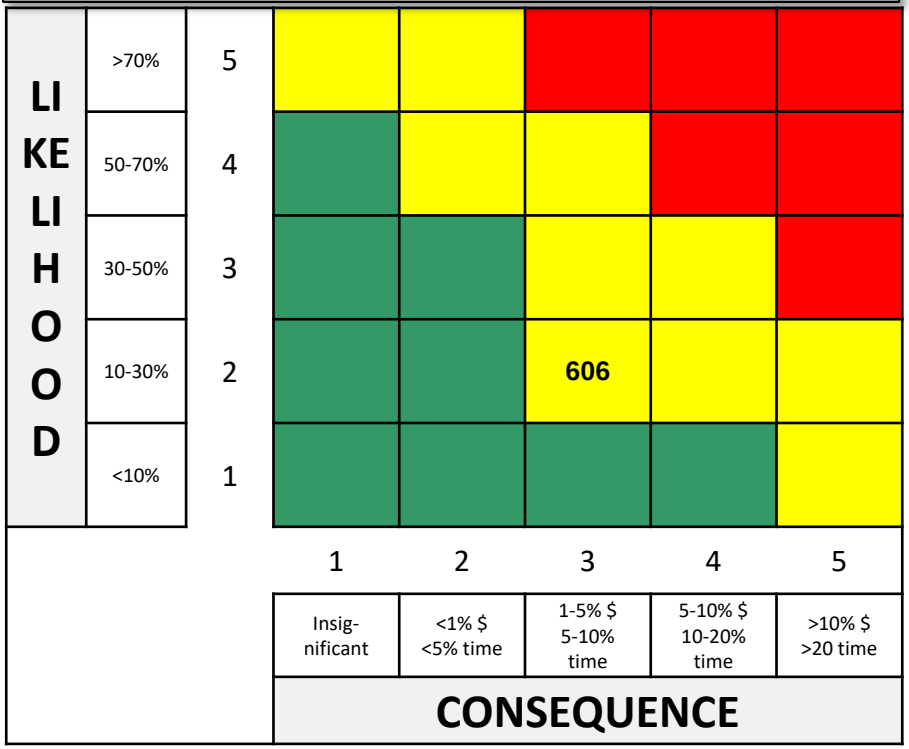
NOAA-20 Blended/Derived Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20: Products Blended Hydro Products				
-- Initial DAP	TBC	Jul-19		
-- Final DAP	TBC	Nov-19		
-- SCR	Jun-18	--	9/20/2018	Completed
-- ARR/ORR	Dec-18	Apr-19		
-- Operations	Jan-19	May-19		
Enhanced TOAST with S-NPP OMPS Limb Profiles				
-- Initial DAP	TBC	TBC		Need Update
-- Final DAP	TBC	TBC		Need Update
-- CDR	Jan-17	Jun-19		
-- SCR	Apr-17	Jun-19		
-- ORR	May-17	Jul-19		
-- Operations	Jun-17	Aug-19		
Upgrade to the Multi-platform Satellite Tropical Cyclone Surface Wind Analysis Product				
-- Initial DAP	TBC	Oct-19		
-- Final DAP	TBC	Feb-20		
-- PDR/CDR	Dec-17	--	1/26/2018	Completed
-- UTRR	Apr-18	--		Waived
-- SCR	May-18	Sep-19		
-- ARR	Oct-18	Nov-19		
-- ORR	Jan-19	Feb-20		
-- Operations	May-19	Mar-20		

FY19 STAR DAP and JPSS PSDI Milestones

NOAA-20 Blended/Derived/Other Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Upgrades to the ADT Product				
-- Initial DAP	TBC	Apr-19		
-- Final DAP	TBC	Jun-19		
-- PDR	Jul-17	--	8/23/2017	Completed
-- CDR	Jul-17	--	8/23/2017	Completed
-- SCR	Jun-18	--	2/25/19	Completed
-- ARR	Oct-18	May-19		
-- ORR	Apr-19	Aug-19		
-- Operations	Jun-19	Sep-19		
Microwave and Diurnal Corrected Blended SST w/ AMSR-2				
-- ORR	Nov-16	ON HOLD		
-- Operations	Nov-16	ON HOLD		
Product Monitoring Phase IV (JPSS RR, VIIRS AF)				
-- Initial DAP	TBC	TBC		Need Update
-- Final DAP	TBC	TBC		Need Update
-- SRR/ORR	Jun-18	Nov-19		
-- Operations	Jul-18	Dec-19		
Product Monitoring VI (NDE J1)				
-- Initial DAP	TBC	TBC		Need Update
-- Final DAP	TBC	TBC		Need Update
-- CDR	Dec-16	--	04/17/18	Completed
-- TRR	Sep-17	Jul-19		
-- SCR	Jun-19	Jul-19		
-- ORR	Aug-19	Nov-19		
-- Operations	Sep-19	Dec-19		
Interactive Multisensor Snow and Ice Mapping System V3				
-- dORR	Jul-17	--	Dec-18	Completed
-- Operations	Jan-18	Apr-19		Scheduled for MAR SPSRB

JPSS PSDI Risk and Issues Summary

Risk Matrix



Criticality

- High
- Med
- Low

L x C Trend

- Increasing (Worsening)
- Unchanged
- Decreasing (Improving)

Approach

M – Mitigate
W – Watch
A – Accept
R – Research

JPSS PSDI Risk Information

L x C Trend	Risk #	Rank	Approach	Risk Title
↓	606	1	M	Interactive Snow/Ice Product Operational Transition

JPSS PSDI Issue Summary

Issue #	Issue Title
602	Availability of NDE 2.0 development/test system accessible to STAR

JPSS PSDI Risks

As of: Mar 11, 2019

Y	606	Rank 1	MITIGATE	DATE	
RISK STATEMENT			**APPROACH/PLAN**	**PLANNED**	**COMPL**
If the new version of the Interactive Snow/Ice Product (IMS) does not complete user required output file reformatting development and successful transition to operations, THEN new and enhanced data products will not be realized by the Numerical Weather Prediction (NWP) community.			1. Develop and deliver the GRIB2 reformatting software for the IMS product output.	Mar 2018	2-28-2018
			2. Integrate reformatting toolkit with the IMS algorithm on the integration string of the operational system	Jul 2018	
			3. Promote IMS enhanced algorithm to operations	Mar 2019	

STATUS: OPEN

- 7/12/2017: New Risk
- 8/9/2017: No formal schedule has been provided by the project lead on the additional development required to output the ice/snow products in GRIB2. The Satellite Product Managers will reach out to the developers to help define this timeline.
- 9/27/2017: No update
- 10/17/17: STAR (Wolf) has agreed to deliver GRIB2 code that the IMS project needs and Kevin Berberich has agreed to cover the integration work under the SMOMS contract. Expect ORR in 6 months. Vacancy for this position is expected to be filed by the end of the calendar year.
- 12/04/17: Learned NIC is providing funding to previous OSPO PAL (Helfrich) to complete and deliver the IMS V3.
- 12/13/2017: Project lead is expected in a couple months (OSPO offer made to candidate). Learned NIC is providing funding to previous OSPO PAL (Helfrich) to complete and deliver the IMS V3.
- 1/17/18: NIC has hired John Woods to work on snow/ice products. Bonnie and Arron met with him and will work with him to get up to speed.
- 2/14/18: Bonnie met with John Woods late Feb, evaluating current IMS system and users. STAR/ASSISTT developed/delivered the GRIB2 converter tool software in late Feb.
- 3/14/18: John Woods is coming up to speed as the Snow/Ice PAL and Sean Helfrich has agreed to deliver delta ORR by July 2018.
- 4/18/18: John Woods and Sean Helfrich are working towards completing IMS V3 and are preparing for the required delta ORR.
- 5/11/18: Monitoring IMS progress towards delta ORR and Operations.
- 6/20/18: Delta ORR planned for Aug and Operations planned for Sep 2018.
- 7/11/18: No update
- 8/10/18: No update. Schedule from 6/20/18 update is still valid.
- 9/12/18: Spoke with PAL and STAR lead, new date for dORR will be mid-October which will push Operations to November assuming successful dORR. Will keep watching.
- 11/13/18: dORR is scheduled for end of NOV; Operations in Jan 2019
- 12/10/18: dORR occurred 12/4; expected to TTO in Jan 2019.
- 12/10/18: IMS going to SPSRB March 2019; expected to TTO by end of month.

JPSS PSDI Issues

As of: Mar 11, 2019

R	# 602	Created: 13 Mar 2017		DATE	
PROBLEM/ISSUE		**PROGRAMMATIC IMPACT**	**ACTION**	**PLANNED**	**COMPL**
Availability of NDE 2.0 development/test system accessible to STAR		If there is no NDE 2.0 development/test system accessible by STAR (similar to SADIE for NDE 1.0), THEN delivery of DAPs or DAP fixes could be delayed or inefficient resulting in delays to project schedule and delays to getting products to users.	1. Confirm requirements for development/test system	Oct 2017	Nov 2017
			2. Investigate with STAR the root causes of short or long delays with integration	Jun 2018	Jun 2018
			3. Improve communication among JPSS, OSGS, STAR, OSPO.	Jun 2018	Jul 2018
			4. Investigate interim solutions to mitigate impacts of not having a SADIE-like systems	Jul 2018	In progress
			5. Gather requirements for a SADIE-like system to address STAR and OSPO needs.	Aug 2018	In progress
			6. Put together cost estimate to meet requirements	Sept 2018	
			7. Consult with OSGS, JPSS, and GOES-R if funding is available and worth funding (cost-benefit analysis)	Nov 2018	

SUMMARY ASSESSMENT

	Sep	Oct	Nov
TECHNICAL	G	G	G
COST	G	G	G
SCHEDULE	R	R	R
BUDGET	G	G	G
PRO-GRAMATIC	Y	Y	Y

CURRENT STATUS -

- 01/2018: Promoted to Issue
- 02/14/18: ESPDS agreed to provide a status and summary of functionality of the DEV system after the 30 day test is completed.
- 3/8/18: Met with OSGS, OSPO, and STAR on 2/23/2018. OSGS (Bethune) agree to draft requirements and gather ROM and work with JPSS, GOES-R, and OSGS on funding.
- 4/18/18: No update
- 5/11/18: No update
- 6/20/18: Algorithm developers provided impact assessments of the lack of a development environment.
- 7/11/18: No update
- 8/7/2018: Per Brandon Bethune, the requirements are going through the ESPDS change process now to be baselined and will be part of the development environment tech refresh (build out at NSOF) later this fall. Solers is currently holding meetings with security to define the interface to STAR for and overall security controls which may alter the design. Once this is complete we will have a better schedule for the instantiation of the NSOF dev environment including STAR's access.
- 9/12/18: No update
- 11/13/18: No update
- 12/10/18: No Update
- 03/11/19: ESPDS/NDE is proposing new requirements to address STARs need in the March ECRB cycle.

JPSS PSDI Risks

As of: Mar 11, 2019

G	449	Rank 6	MITIGATE	DATE	
RISK STATEMENT			**APPROACH/PLAN**	**PLANNED**	**COMPL**
If solution to the AWIPS DD-PDA issue drives major changes on the NESDIS production/distribution, then operational use of products by NWS will be delayed and NESDIS may be required to fund major upgrades for PDA or NDE.			1. Confirm existing PDA capabilities for Polar Data	Jun 2017	Jun 2017
			2. Fully understand & document NWS AWIPS requirements for Polar Data	Dec 2018	
			3. Determine if an upgrade to PDA or NDE is necessary to meet NWS needs.	Jun 2019	
			4. Develop new solution.	Aug 2019	
			5. If changes are required on the NESDIS side, seek funding for the approved solution.	Sep 2019	

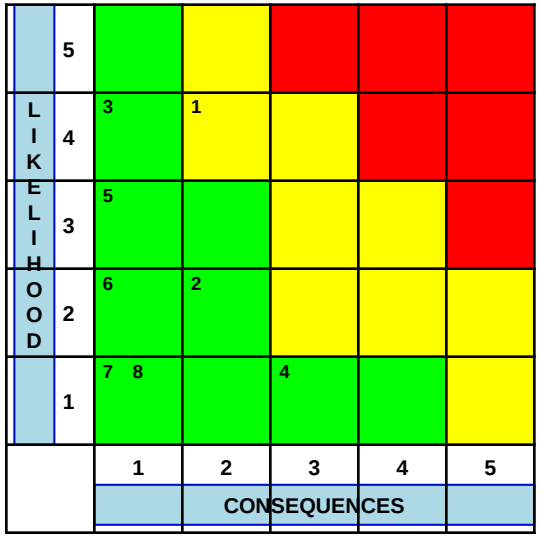
STATUS: OPEN

- 3/1/2017: New Risk
- 4/17/2017: John Evans is continuing to work with NWS, however; progress is slow due to NWS focusing on the distribution of KPPs to AK. Continuing to stay involved in NWS AWIPS DD meetings and John has offered to lead the integrated work team to come to a resolution to the requirement issue. Bi-weekly meetings among JPSS, OSGS, and NWS are to start 6/9.
- 6/14/2017: Started bi-weekly meetings with OSGS and the NWS, goal being to update the ConOps, develop requirements, consider technical solutions, and bring results to management for decision. A timeline for this activity is additionally being developed.
- 7/12: Biweekly meetings continue with a focus on reviewing existing requirements and CONOPs documents(both approved and unapproved) and reviewing the product priority lists from NWS.
- 8/9/2017: Biweekly meetings continue. Clear plans from NWS on dissemination of Alaska KPPs has been developed. Technical subgroups are kicking-off to review product-by-product considerations. It has been noted that because some JPSS products are so small already, no specialized, dynamic tailoring may be necessary (TBC through the subgroups).
- 9/27/2017: Last IWT meeting on 9/22 demonstrated progress in analyzing individual polar products for tailoring needs. Services sub-team also stood-up to investigate possible technical solutions to meeting NWS needs.
- 10/17/17: With both AWIPS-DD development and ESPDS development tightly constrained under current contract / task commitments, progress on new operational capabilities for polar data access has been slow. However, recent technical discussions of a prototype (/ pilot / pathfinder) data service standing in for PDA for polar data have helped to expose possible new opportunities for near-term progress. These include hosting a server in a commercial cloud or the ESPC VTLab (thus not tightly coupled to the operational PDA service), and connecting AWIPS-DD to it as a new data source (to avoid encumbering the current AWIPS-DD task connecting to PDA). An assessment of benefits vs. costs, and a clear tie back to mission requirements, will be necessary for NWS and NESDIS to authorize development effort.
- 11/08/17: No update.
- 12/13/2017: At 12/1 IWT, ESPDS presented current capabilities in PG and the possibility of a web service to meet NWS needs. Work continues to understand NWS needs for polar data and documenting requirements that would then be delivered to OSGS.
- 1/17/2018: JPSS/AMP is nearly ready to submit a CCR to the JPSS Program CCB for a requirements change to meet this need for NWS. This should kick-off an engineering and cost study.
- 2/14/2018: JPSS is not fielding any Level 1 requirements changes at this point. However, JPSS will be requesting a cost estimate from OSGS on some possible short-term and long-term solutions. Once we have the cost estimate and engineering assessment, the SPM will engage with JPSS management on a path forward.
- 3/14/18: No Update
- 4/18/18: No Update
- 5/11/18: J Evans draft NESDIS service requirements at end of April. Expect to share with NWS and OSGS for input by end of June.
- 6/13/18: Interim proposal by John Evans has been discussed at IWT meeting. Will be setting-up meeting with Benjie Spencer to discuss further the long-term planning, requirements, design, and solution.
- 7/11/18: IWT meetings are continuing. Possible implementation approaches were briefed at the JPSS Director's Forum on 7/11/2018. Overall guidance was for the IWT to continue working toward a recommendation, which then needs to be provided to OSAAP for approval/allocation/funding/prioritization.
- 8/9/2018: Near-term solution agreed-to with NWS to request NDE create thinned data products for dissemination to AWIPS. Briefed PGR IPT on 87, and follow-up meeting scheduled for later in Aug.
- 9/12/18: No update
- 11/13/18: No update
- 12/10/18: No update
- 03/11/19: No Update

March 2019 AMP/STAR RMB Risk Summary

Status as of: 03/07/2019

Rank Risk ID	Summary	LxC Trend	Aprch
1 AMP-15-006	Continued Generation of IDPS EDRs	4x2 ⇔	M
2 AMP-18-003	J2 APID Changes to Accommodate New S/C Bus	2x2 ⇔	W
3 AMP-17-004	Operational Data Flow to AWIPS-II	4x1 ⇔	M
4 AMP-16-005	Block 2.0 Algorithm Change Process & delivery of changes.	1x3 ⇔	W
5 AMP-18-008	Data Product Requirements for OMPS-Limb	3x1 ⇔	M
6 AMP-19-001	Algorithm testing & delivery impacts due to lag between IDPS and G-ADA moving to the Cloud	2x1 NEW	W
7 AMP-18-004	NWS GFS FV3 Model Upgrade Impacts	1x1 ⇔	W
8 AMP-18-006	Impact on Testing Ability Due to Major Build Upgrades	1x1 ⇔	W
9 AMP-18-007	Loss of Raytheon CommonCM server impacts Algorithm Development, Tracking, and ADL Delivery		



Criticality
HIGH
MED
LOW

Approach
A – Accept
M – Mitigate
W – Watch
R – Research

LxC Trend
⇩ – Decreasing (Improving)
⇧ – Increasing (Worsening)
⇔ – Unchanged
NEW – Added this month

March 2019 AMP/STAR RMB

Status as of: 03/07/2019

Rank	Risk ID	Risk Statement	Approach	Status
1 ⇔ Continued Generation of IDPS EDRs **Expected Closure:** 10/2019	AMP-15-006	**Given that:** we are transitioning to production of EDRs on ESPC systems **There is a possibility that:** the IDPS-generated EDRs will continue running for an extended period of time **Resulting in:** additional maintenance and sustainment costs.	**Mitigate**	3/7/19: LST/LSA may make the next promotion from NDE I&T to NDE Ops scheduled for April 2019. There remains a NUCAPS Low-Resolution Cloud product on IDPS still being used that will delay transition of all products until the September/October 2019 timeframe. This delay has no consequence on the level of this risk. The expected closure date has been changed accordingly. 2/25/19: LST/LSA products were put back on NDE I&T for testing on 2/22/19.

March 2019 AMP/STAR RMB

Status as of: 03/07/2019

Rank	Risk ID	Risk Statement	Approach	Status
2 ⇔ J2 APID Changes to Accommodate New S/C Bus	AMP-18-003	**Given that:** J2 has a new S/C Bus manufacturer and some new APIDs compared to J1 and S-NPP **There is a possibility that:** the SDR algorithms will need to be updated to accommodate new RDR format/structure **Resulting in:** additional unplanned work for Ground.	**Watch**	3/7/19: Risk Owner has been transitioned from Cole to Tomi. The next JPSS-2 S/C Bus FSW (FSW5) is expected to be released during the Summer 2019. This FSW version is expected to be the first compatible with the instruments and will likely include a better idea of the APID to VCID map. 3/6/19: According to the MOST team, the S/C CTDB is still pretty immature, so the details we need to confirm APID to VCID mapping and content are not currently available. That being said, the MOST is committed to making sure the proper information gets into the S/C telemetry RDR and will ensure that it is all mapped to VC0.

March 2019 AMP/STAR RMB

Status as of: 03/07/2019

Rank	Risk ID	Risk Statement	Approach	Status
3 Operational Data Flow to AWIPS-II ⇔	AMP-17-004	**Given that:** AWIPS data flow issues (esp. AWIPS Data Delivery (DD) to PDA interface) are not resolved, **There is a possibility that:** Many JPSS data products will remain inaccessible to the NWS AWIPS II system for forecaster use after NWS' June 2020 target date **Resulting in:** under-utilization of JPSS data products by the NWS forecasting community.	**Mitigate**	3/7/19: NWS has confirmed and demonstrated partial AWIPS-DD capability to fetch products from PDA, and ingest & display them in AWIPS. TOWR-S and the Raytheon AWIPS team are configuring AWIPS to parse and display several NetCDF gridded products. Meanwhile forecasters are evaluating the AMSR2 Sea Surface Winds and cryosphere products from VIIRS and ATMS MiRS for operational deployment.

March 2019 AMP/STAR RMB

Status as of: 03/07/2019

Rank	Risk ID	Risk Statement	Approach	Status
4 ⇔ Block 2.0 Algorithm Change Process & delivery of changes.	AMP-16-005	**Given that:** The CFCR is not available for "outside users" to load updated, approved algorithms (code, documents, tables) **There is a possibility that:** algorithm changes and table updates will be inefficient (slowed) **Resulting in:** an impact to the quality of the data products.	**Watch**	03/06/19: No changes to report. 02/07/19: No changes to report; progress significantly impeded by 35-day Federal Government Shutdown.

March 2019 AMP/STAR RMB

Status as of: 03/07/2019

Rank	Risk ID	Risk Statement	Approach	Status
5 ⇔ Data Product Requirements for OMPS-Limb **Expected Closure:** 10/2020	AMP-18-008	**Given that:** There are no JPSS (or NOAA) data product requirements for OMPS-L **There is a possibility that:** benefits/impacts analysis from users based on NPP data products may demonstrate the need for NOAA processing of OMPS-L from JPSS-2/3/4 **Resulting in:** Additional funding needed for delivering the algorithm, product generation/distribution/archive, and calval of the products.	**Mitigate**	3/4/19: STAR and ESPDS working through some issues with OMPS-L running on I&T. 2/7/19: OMPS-LP was promoted to NDE I&T string on Thursday 1/31.

March 2019 AMP/STAR RMB
NEW

Status as of: 03/07/2019

Rank	Risk ID	Risk Statement	Approach	Status
6 NEW Algorithm testing & delivery impacts due to lag between IDPS and G-ADA moving to the Cloud **Expected Closure:** 12/2020	AMP-19-001	**Given that:** IDPS will be in the cloud prior to G-ADA being in the cloud, **There is a possibility that:** algorithm change testing and implementation may take longer (not sure why?) **Resulting in:** delays to implementation of algorithm changes.	**Watch**	3/6/19: Based on limited understanding from Ground Project as of February 2019, we believe that there is a real possibility that IDPS will be migrated to the Cloud prior to G-ADA being available in the Cloud (with proper training, etc). From John (possible consequence?): If G-ADA is on-premise but IDPS is in the cloud, differences in computing hardware may introduce small discrepancies in algorithm results (even if all codes, inputs, ancillaries, etc. are identical). So promoting algorithms from G-ADA to the cloud-based IDPS may require additional verification steps to ensure consistency of results (& to assess / bound the differences). (It's also possible that differences in memory sizes, network bandwidths, or disk access speeds might also change algorithm outcomes (race conditions); but hopefully none of the algorithms are that fragile.)

March 2019 AMP/STAR RMB

Status as of: 03/07/2019

Rank	Risk ID	Risk Statement	Approach	Status
7 NWS GFS FV3 Model Upgrade Impacts ⇔	AMP-18-004	**Given that:** the NWS plans to upgrade the GFS FE3 Model resolution in the second quarter of FY19 **There is a possibility that:** SDR gridding granulation of the ancillary data files could change **Resulting in:** the failure of some EDR products.	**Watch**	3/7/19: The Risk Owner has been changed from Cole to Arron. Although all steps have been taken to mitigate this risk, the risk will remain open until the new GFS FV3 model is implemented. Implementation has been delayed until April 2019. 2/25/19: At the IDPS Splinter on 2/20/19 Raytheon relayed that they had completed further GFS FV3 Model Upgrade testing. Additionally, the AMP Team Lead confirmed that all IDPS EDRs would continue to operate without issue once the upgrade is made so no further action is required on this front.

March 2019 AMP/STAR RMB

Status as of: 03/07/2019

Rank	Risk ID	Risk Statement	Approach	Status
8 ⇔ Impact on Testing Ability Due to Major Build Upgrades	AMP-18-006	**Given that:** DPES has had issues installing major Block/Build updates in the past on G-ADA **There is a possibility that:** this could occur again in the future (Block 2.2) **Resulting in:** delays to testing of instrument code and table updates.	**Watch**	3/6/19: Risk Owner changed from Cole to Jeff.

March 2019 AMP/STAR RMB

Status as of: 03/07/2019

Rank	Risk ID	Risk Statement	Approach	Status
9 ⇔ Loss of Raytheon CommonCM server impacts Algorithm Development, Tracking, and ADL Delivery	AMP-18-007	**Given that:** The Common Configuration Management System (CCMS, or commonly called CommonCM) server hosted by Raytheon will be decomissioned by July 31, 2018 (delayed to October 31, 2018) **There is a possibility that:** Stakeholders (including AMP, IDPS, GRAVITE, FTS, and STAR) will no longer have access to VOBs (IDPS and CPERT source code), ADL software releases, latest PCRs (regularly synced),or ADRs (PCRs need to be synced to ADRs) **Resulting in:** Our inability to write or track ADRs and track PCRs for algorithm changes, loss of access to source code until the CDRL is delivered to NASA around TTO (6-8 week delta), and loss of electronic delivery of ADL (2 week delay).	**Watch**	3/7/19: Common CM has been fully transitioned. NASA SEIT is providing oversight, so this risk now has good Ground visibility. Level 3 requirements need to be written and put on contract to enable the full functionality of the Common CM but all issues impacting the AMP have been resolved or have workarounds in place. Therefore, this risk can be closed.

Color code:

Green: **Completed Milestones**

Gray: **Non-FY19 Milestones**

ATMS SDR

February, 2019

Accomplishments / Events:

- Further evaluated reflector emission correction and processing coefficient table update results
- Verified ATMS reflector emission correction and PCT update results that independently produced by ASSIST to go through pre-operational assessment process
- Prepared ATMS reflector emission correction and PCT update sample data user assessment result briefing report and presented it to NJO management and OSPO operational implementation team
- Discussed the evaluation of ATMS geolocation error by using 2D lunar scan observations
- Improved ATMS bias monitoring package using RO data to improve the inter-sensor comparison capability
- Reviewed and discussed ATMS Algorithm Theoretic Basis Document (ATBD) update draft to reflector the lasted update in ATMS calibration algorithm

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

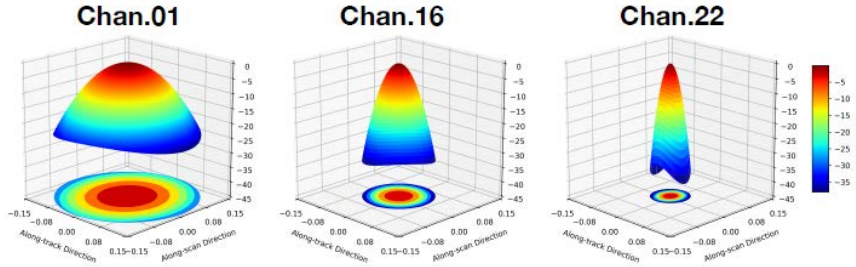
Issues/Risks:

None

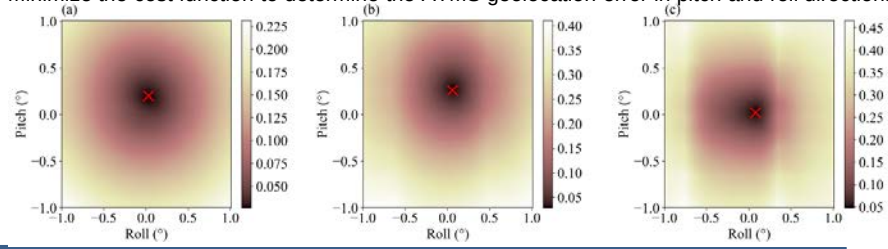
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual ATMS TDR/SDR performance report	Aug-19	Aug-19		
J2 pre-launch test data (TVAC) review/analyze	Sep-19	Sep-19		
Reflector emissivity correction DAP (PCT and code update, ADR8632/CCR3971)				
Technical Interchange Meeting (TIM)	Feb-19	Feb-19		
DAP to ASSISTT	Feb-19	Feb-19	01/31/19	
DAP to DPES	Mar-19	Mar-19	02/11/19	
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19	02/11/19	
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:

Normalized antenna response interpolated by 2D Gaussian function



Minimize the cost function to determine the ATMS geolocation error in pitch and roll directions



CrIS SDR

February, 2019

Accomplishments / Events:

- Completed Polarization Correction Evaluation Activities: 1) Generation of 2-days of SNPP/NOAA-20 CrIS SDR data at NSR/FSR in HDF and BUFR format. 2) Format evaluation of CrIS SDR data in HDF format. 3) First evaluation of the CrIS Polarization Correction using NUCAPS/CLIMCAPS.
- A scene and spatial-dependent empirical correction over LWIR is proposed to reduce the CrIS inter-FOV variability for the benefit of the CrIS SDR User community. Figure **(a)** shows the impact of applying the correction to the 668.125 cm^{-1} channel. An inter-FOV variability less than 0.1K is observed.
- New threshold values for the lunar intrusion (LI) algorithm have been proposed based on an analysis of the Deep Space (DS) spectrum variation found over false alarm cases (Figure **(b)**). Evaluation results based on several focus days with and without LI events show significant LI false alarms reduction.
- Excess noise has been identified on the NOAA-20/CrIS LWIR FOV5 when instrument performs Earth Scene (ES) observations (Figure **(c)**). Potential root source is being associated to the A/D quantization noise. FOV5 is more sensitive due to its low PGA gain and higher differential A/D nonlinearity. On-orbit diagnostic interferograms will be used to test this hypothesis.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

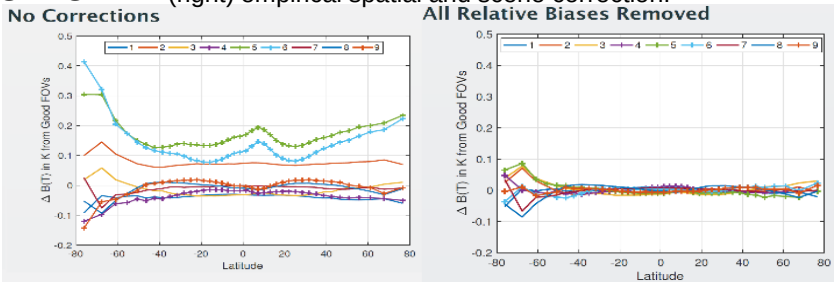
Issues/Risks:

- On February 18, 2019A FTE positions has been advertised at ESSIC.
- On February 19, 2019 the STAR CrIS SDR Team received a new machine, rhw1304.

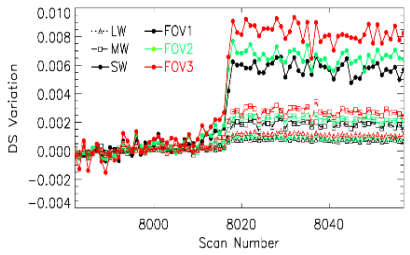
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual CrIS SDR performance report	Aug-19	Aug-19		
J2 pre-launch test data (TVAC) review/analyze	Sep-19	Sep-19		
Polarization correction algorithm implementation DAP (ADR8760)				
Technical Interchange Meeting (TIM)	Feb-19	Feb-19	12/19/18	TIM 1
DAP to ASSISTT	Jul-19	Jul-19		
DAP to DPES	Aug-19	Aug-19		
Turn off Spike detection and Correction Algorithm due to false alarms (ADR8819/CCR4201)			12/18/18	
Turn off Truncated Spectrum CrIS Data (ADR8761)	Sep-19	Sep-19		OSPO/User
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19	02/13/19	
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Jul-19	Jul-19		

Highlights:

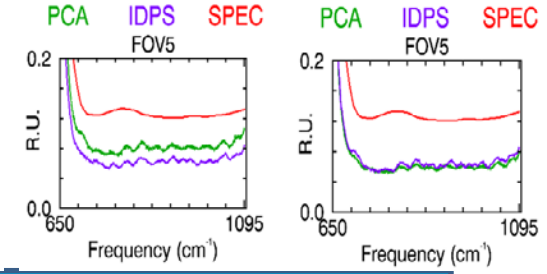
(a) NOAA-20/CrIS inter-FOV variability before (left) and after (right) empirical spatial and scene correction.



(b) S-NPP/CrIS DS variation for a false alarm LI event on 01/04/2019.



(c) NOAA-20/CrIS LWIR FOV5 noise derived from ES (left) and ICT (right) observations.



VIIRS SDR

February, 2019

Accomplishments / Events:

- Delivered for deployment in IDPS operations updated, NOAA-20 and S-NPP DNB offset and gain ratio LUTs generated using new moon calibration data from Feb. 4, 2019
- Delivered for deployment in IDPS operations an updated NOAA-20 DNB stray light correction LUT generated from Feb. 2019 data
- Analyzed events timeline, data gaps, and calibration status after VIIRS reset on 2/1/19
- Calculated lunar F-factors using data collected during the NOAA-20 and S-NPP roll maneuvers on Feb. 15, 2019, satisfactory agreement with the solar F-factors
- Investigated the NPP solar calibration anomaly that occurred on 2/24/19 after a spacecraft attitude disturbance shortly after 21:15 UTC
- Investigated and clarified DNB aggregation mode (zone) ordering in VIIRS SDR LUTs: submitted a new ADR that asks for relevant corrections in the JPSS documentation
- In preparation for the IAM planned for 3/6/19, calculated time series of LTAN for NOAA-20 and S-NPP: both remain within one minute from 1:25 pm

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

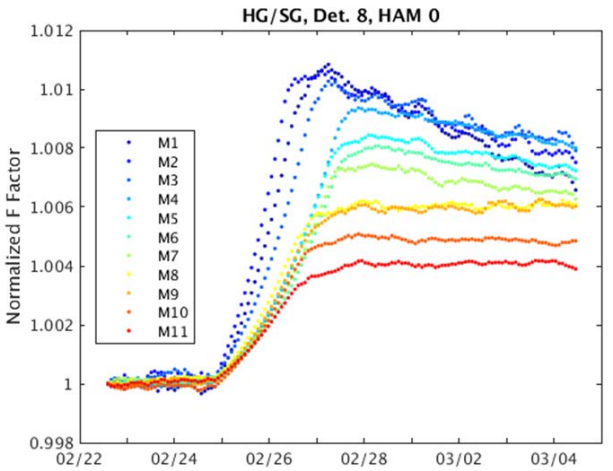
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

none

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual VIIRS SDR performance report	Aug-19	Aug-19		
J2 pre-launch test data (TVAC) review/analyze	Sep-19	Sep-19		
J2 Pre-launch sensor characterization report			10/01/18	
J2 Launch-ready LUTs (initial delivery)	Sep-19	Sep-19		
Comprehensive solution for VIIRS Geo SCE SideB HAM mirror LUT Missing (code and LUTs, ADR8788/CCR4185)	Dec-18	Dec-18	12/11/18	
Remove COEFF-A and COEFF-B LUTs (ADR8785/CCR4148)	Mar-19	Mar-19	12/18/18	
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19	02/07/19	
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:



S-NPP VIIRS solar calibration anomaly and recovery after February 24, 2019

OMPS SDR

February, 2019

Accomplishments / Events:

- Regular weekly dark deliveries for OMPS sensors were made.
- Regular bi-weekly OMPS-NP wavelength table deliveries were made for S-NPP.
- Flight table uploads were successful
- A TIM was held to discuss missing scans in NOAA-20 OMPS SDR products. It is expected that the missing scans problem will be fixed with the MX5 TTO in March.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic			X		
Schedule			X		

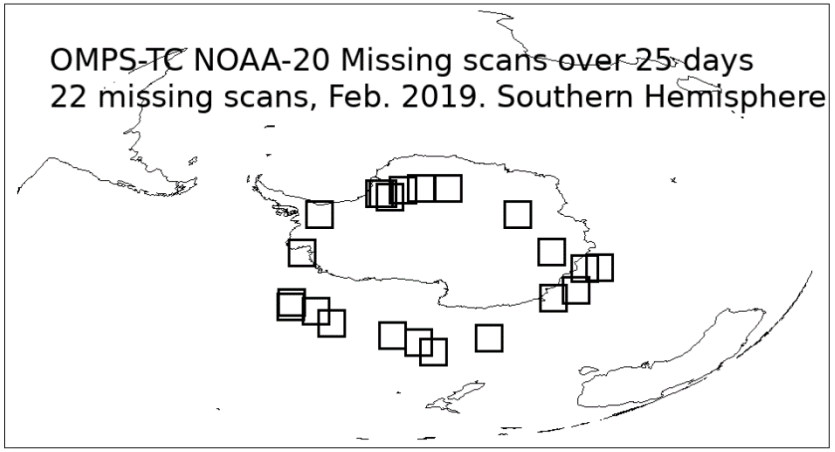
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Problem with OMPS-NP non-linearity. Continuing problem with OMPS-TC and OMPS-NP Sample tables.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Jun-19	Jun-19		
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual OMPS SDR performance report	Aug-19	Aug-19		
J2 pre-launch test data review/analyze	Sep-19	Sep-19		
J2 Pre-launch sensor characterization report	Jun-19	Aug-19		PSR changed
OMPS NM/NP Mismatch for FOVs (ADR8617/CCR4137)			11/01/18	
Update NOAA-20 OMPS Calibration Tables (ADR8816)	Dec-18	Dec-18	02/07/19	Govt. shutdown
OMPS NP Transient Smear Correction (ADR8709/CCR4138)	Dec-18	Dec-18	11/26/18	
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19	02/15/19	
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:



The missing scans problem for NOAA-20 OMPS is illustrated. The pattern of missing scans falls just out of range with the McMurdo ground contact

SDR Reprocessing

February, 2019

Accomplishments / Events:

- Completed 2016 VIIRS V2 SDR reprocessing as requested by STAR aerosol group, and the data delivery is on-going
- VIIRS V2 SDR reprocessing for the remaining 2012-2017 is ongoing, and will be completed by July, 2019 (on schedule)
- VIIRS Reprocessing data distribution is discussed between STAR VIIRS SDR and ICVS teams, based on the size of dataset request, different options are available
- Investigation and development of a straightforward user-friendly S-NPP reprocessing data distribution interface is ongoing
- Technical supports are continuously provided to users

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Finish 2016 VIIRS V2 reprocessing	Feb-19	Feb-19	Feb-19	N/A
Upgrade the reprocessing data dissemination interface	May-19	May-19		
Finish the remaining VIIRS V2 reprocessing	July-19	July-19		
Reprocessed data maturity review	Aug-19	Aug-19		
Reprocessing paper/report	Sep-19	Sep-19		
Engineering assessment of transitioning reprocessed ATMS data from STAR to NCEI	Dec-19	Dec-19		

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Highlights: 2016 S-NPP VIIRS V2 Reprocessing SDR

- **Reprocessing Script and ADL Version**
  - ADL Block 2, ADL_5_3_I2_1_01_00
  - Parallelization fully using bamboo super computer at CICS/UMD
  - Takes about 15 hours processing one month VIIRS SDR data (18 nodes)
- **Data files and Format**
  - Data files (GITCO, GMTCO, GDNBO, SVDNB, SVM01-SVM16 SVI01-SVI05, IVOBC)
  - Data Format (GZIP Compressed HDF 5, the same as current IDPS data format)

VIIRS V2 Reprocessing SDR Data Volume

File Type		Data Volume			
	File	Daily	Monthly	Yearly	Yearly Total
GEO	GITCO	96 GB	2.9 TB	35 TB	125 TB
	GMTCO	26 GB	0.78 TB	8.5 TB	
	GDNBO	45 GB	1.4 TB	16.7 TB	
RAD	IMG	84 GB	2.5 TB	31 TB	
	MOD	79 GB	2.4 TB	29 TB	
	DNB	9 GB	273 GB	3.3 TB	

ICVS

February, 2019

Accomplishments / Events:

- Updated VIIRS F-factor trending product and generate high resolution short term trending plots for ICVS
- Finished developing PCA-based CrIS spectral NEdN trending modules to monitor CrIS instrument stability
- Developed CrIS and VIIRS NRT and long term trending health status monitoring parameters according to NASA flight project requests
- Produced hurricane WUTIP vertical structure 3D animation from MiRS and VIIRS data for severe weather watch
- Developed NOAA-20 and S-NPP VIIRS double difference comparison package through VIIRS and ABI inter-sensor comparison results
- Developed CrIS Dwell RDR data reader program to start monitoring high resolution CrIS health status and performance
- Prepared Joint Satellite Conference meeting abstracts
- Supported JPSS/SMCD weekly/monthly reports

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
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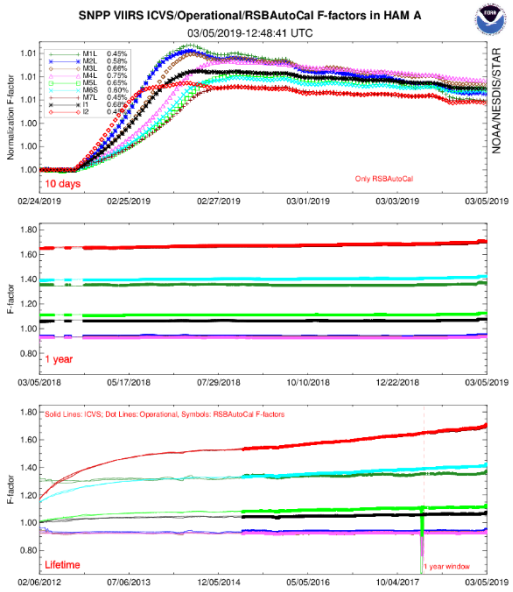
Issues/Risks:

None

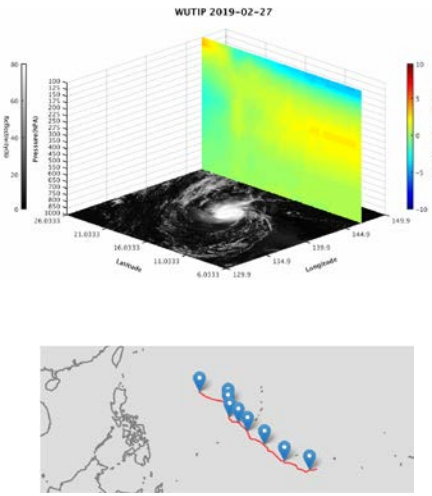
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
ICVS-Application: ICVS Severe Weather Watch (iSEW) System (Severe Weather Watch with JMAPPER) (Beta Version)	Dec-18	Dec-18	Dec-18	
ICVS User's Manual and Technical Report Version 1	Mar-19	Mar-19		
ICVS Module initialize and Development (each instrument on both SNPP and NOAA-20): • Global (POES) Inter-Sensor Comparison Modules • VIIRS/CrIS &GOES ABI Comparison Module • Global O-B and Double Difference Bias Modules • RDR/SDR Operational Data Missing Granule Modules • CrIS/VIIRS geolocation monitoring module implementation and improvement • CrIS FOV(R)-To-FOV(R) Difference modules • CrIS Relative (Absolute) Spectral Difference Modules	Jun-19	Jun-19		
ICVS Module development and update: • Inter-Sensor Comparison Module update • O-B and DD Bias Module Update • ICVS Geolocation Accuracy Trending Modules • Enterprise ICVS Cloud/Clear Flag Modules • ICVS SDR Spectral Analysis Modules • ICVS Severe Weather Watch (iSEW) Update	Sep-19	Sep-19		
JPSS-ICVS System Standardization and ICVS Annual Performance Review	Sep-19	Sep-19		

Highlights: Significantly contribute to STAR SDR Teams

S-NPP VIIRS F-factor



Hurricane WUTIP 3D Temperature Profiles over VIIRS Image



VIIRS Imagery

February, 2019

Accomplishments / Events:

- The **Imagery and Geo Teams** have the code changes nearly ready for Terrain Correction (TC) implementation for EDR Imagery, switching away from/dropping ellipsoid geo-locations:
  - The ADL experts (ASSISTT, NASA Geo, Raytheon, and CIRA) are finalizing the code changes needed.
  - No changes in output files or file names, so no impact on VIIRS SDRs or other VIIRS EDRs.
  - V. Mickles is organizing a CDR for 14 March, for which slides are being prepared with science team contributions from D. Hillger (StAR) and code change contributions from W. Chen (ASSISTT).
  - A dry run for this CDR will be held on 6 March, the day after the regular Imagery Team meeting (5 March).

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

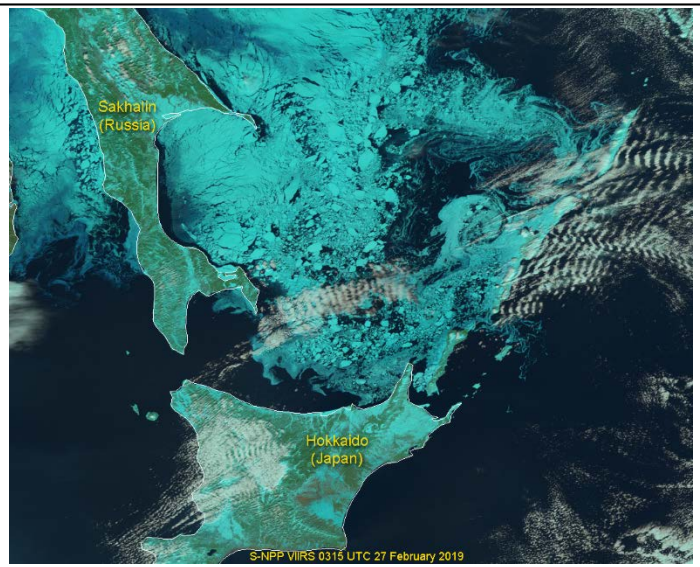
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual VIIRS Imagery performance report	Aug-19	Aug-19		
N20 NCC LUT update	Sep-19	Sep-19		
Terrain-Correction geo-locations for VIIRS Imagery EDRs (ADR8239)				
Design Review	Mar-19	Mar-19		
Algorithm Readiness Review (ARR)	Sep-19	Sep-19		
DAP to DPES	Sep-19	Sep-19		
Run ADL locally (@ CIRA, to allow code testing/changes)	Mar-19	Mar-19		
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Mar-19	Mar-19	02/15/19	
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:



VIIRS Natural-color RGB image of the sea ice off the northern Japanese island of Hokkaido. S-NPP (03:15 UTC, 27 February 2019). Low clouds are white and snow-covered land and sea ice are cyan.

Clouds

February, 2019

Accomplishments / Events:

- Nighttime Cloud Optical Properties submits its Provisional Maturity Review
- Paper revised on use of NUCAPS and VIIRS Enterprise Cloud products.
- ACHA modifications continue to improve performance in Arctic night for support of Polar Winds.
- NOAA-20 Tuning nears completion

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

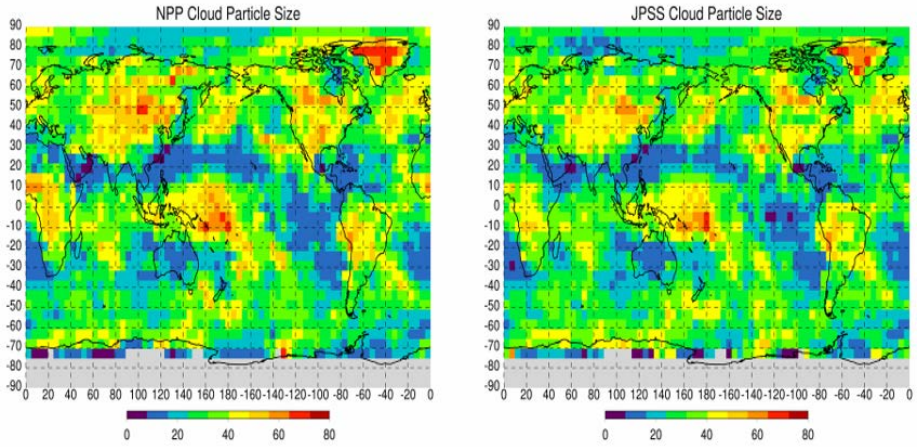
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta/Provisional Maturity: NCOMP (N20 Cal/Val)	Feb-19	Feb-19		ppt ready
Provisional Maturity: DCOMP (N20 Cal/Val)	Nov-18	Nov-18	11/27/18	
Provisional Maturity: Cloud Mask, Cloud Phase (Beta & Provisional), ACHA (CTT/CTP/CTH), CBH			10/02/18	
Validated Maturity (N20 Cal/val)	May-19	May-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19		
Algorithm update DAP to ASSISTT: ▪ Cloud Mask: Develop new LUTs that support multi-dimension classifiers and provide full meta-data ▪ Cloud Phase/Type: Optimize cloud phase thresholds for NOAA-20 ▪ ACHA: improving multilayer ACHA by analysis of calipso observed cloud behavior to support Polar Winds ▪ CCL: Separate CCL from ACHA processing	Mar-19	Mar-19		
Algorithm update DAP to ASSISTT: ▪ Cloud Mask: Implement DNB ▪ ACHA: Work on surface emissivity issues that are impacting 8.5 micron clear-sky BT ▪ CBH: Leverage GOES-RR to target characterization of overlapping cloud assess CBH performance for multi-layer cloud systems ▪ DCOMP9: Incorporate improved surface reflectance for DCOMP channels ▪ DCOMP: Implement gross phase correction for DCOMP pixels that fail (thin cirrus over stratus is a common issue) ▪ NCOMP: extend NCOMP cloud optical depth range to include larger values by including a neural net approach	Sep-19	Sep-19		

Highlights: SNPP/JPSS NCOMP Particle Size



Cloud Effective Particle Sizes (CEPS) from SNPP (left) and NOAA-20 (right). CEPS values and features across the globe look very similar. Material taken from the NCOMP Provisional Maturity Review.

Aerosol

February, 2019

Accomplishments / Events:

- Generated scripts and analytical programs for comparing AOD trends from both NOAA 20 and NPP satellites. There are a total of four different products to consider: both EPS and IDPS products from NPP and NOAA 20. By comparing the trends from these outputs we can investigate NOAA 20 aerosol products. The datasets currently being used are those produced by the long monitoring tool, which collects the data from various AERONET stations around the world, and measures average AOD near these stations. Even though EPS AOD data has no public access, the data from I&T stream is being used.
- One year worth of NOAA-20 aerosol detection product was generated by running the algorithm off-line and compared to CALIPSO and AERONET to prepare for provisional/validated maturity reviews
- NOAA-20 I&T EPS AOD product is continuously being evaluated to prepare for provisional/validated maturity reviews. Gaps in data have been found and reported to ASSIST. ASSIST is investigating the source of data dropouts

Overall Status:

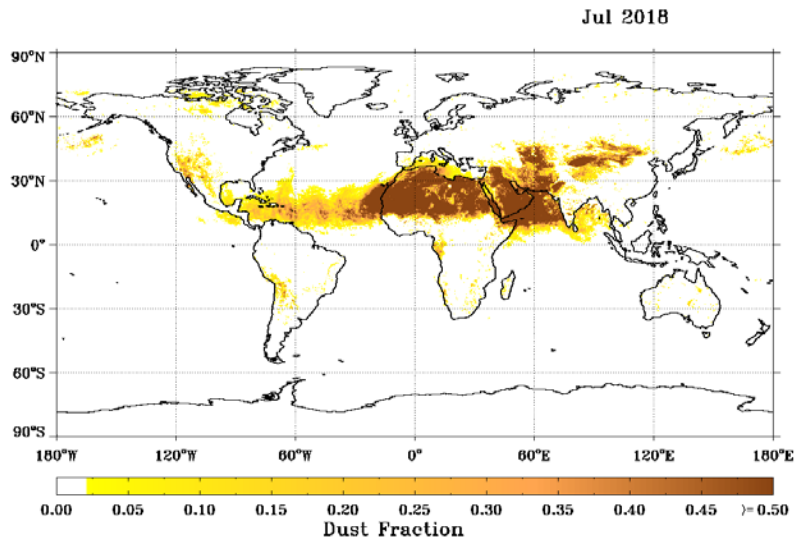
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity (N20 Cal/Val))	May-19	May-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19		
Algorithm update DAP to ASSISTT: ▪ Revise the output quality flags (grouped based on the retrieval quality) ▪ AOD: Update internal tests (e.g., sea ice, heavy aerosol etc.) for SNPP and NOAA-20 ▪ ADP: algorithm updates to the IR-visible path (thresholds and quality flag determination)	Mar-19	Mar-19		
Algorithm update DAP to ASSISTT: ▪ Algorithm update for heavy aerosol retrievals over dark land surface (high reflectance might trigger the retrieval over bright land) ▪ AOD: Update the bright surface reflectance database ▪ ADP: algorithm updates to improve (improve correct detection and minimize false detection) over bright surfaces using spectral surface reflectance data base	Sep-19	Sep-19		
Enhancements to AerosolWatch website to add NOAA-20 data	Jun-19	Jun-19		



NOAA-20 Dust distribution for July 2018 based on off-line algorithm

Volcanic Ash

February, 2019

Accomplishments / Events:

- Added to list of known NOAA-20 observations of non-trivial ash clouds
- Continue to perform validation of NOAA-20 ash observations (see Figure)
- Continued to develop and test algorithm improvements through incorporation with CrIS measurements.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

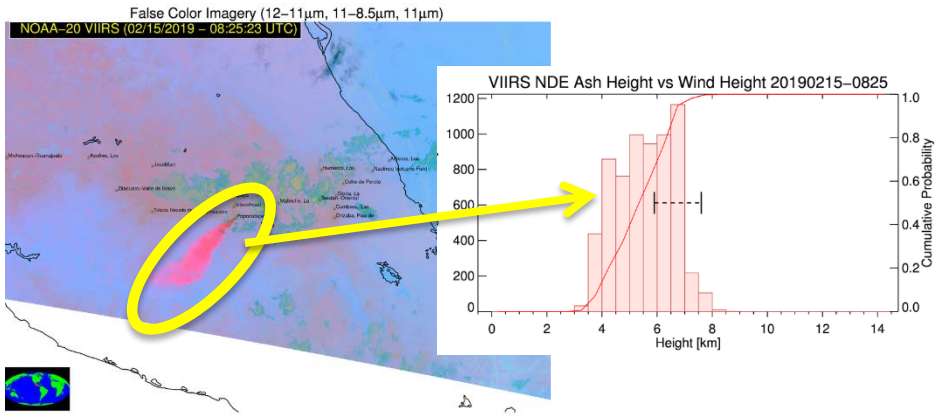
Issues/Risks:

Validated maturity risk is related to number volcanic ash cases observed by NOAA-20 that can be validated using wind advection approach and/or CALIPSO co-locations.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta Maturity (N20 Cal/Val)	Nov-18	Nov-18	11/27/18	
Provisional Maturity (N20 Cal/Val)	Nov-18	Nov-18	11/27/18	
Validated Maturity (N20 Cal/Val)	May-19	May-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19		
Incorporation of CrIS	Sep-19	Sep-19		
Comparison of volcanic ash products with validation data	Sep-19	Sep-19		
Submit user request for the VOLCAT capability (implementation)	Mar-19	May-19		May slip 1-2 months due to shutdown

Highlights:

NOAA-20/Wind-Height Comparisons



NOAA-20 volcanic ash height retrievals were validated using the wind-height inferred truth data for an ash cloud from Popocatepetl on Feb.15, 2019. (Same technique described in provisional review.) The NOAA-20 ash heights agree well with the wind derived truth.

Cryosphere

February, 2019

Accomplishments / Events:

The latest NOAA-20 NDE VIIRS sea **ice thickness** product has been validated using an ice mass balance buoy deployed by the Cold Regions Research and Engineering Laboratory. **The NOAA-20 and CRREL buoy ice thicknesses agree very well**, with a mean thickness of 95.67 cm for the NDE product and 87.56 cm for the buoy, with an RMSE of 17.77cm. Day 271 is almost certainly an outlier, as ice thickness would not change so drastically over a three-day period. For some days there is no VIIRS ice thickness retrieval due to cloud cover.

Ice motion estimates from synthetic aperture radar (SAR) images of sea ice are in a testing and coding phase. Given the increased coverage of SAR over polar regions, sequential SAR images of sea ice allow for all-weather high-resolution sea ice motion by feature tracking, improving ice motion derived from VIIRS and AMSR2.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

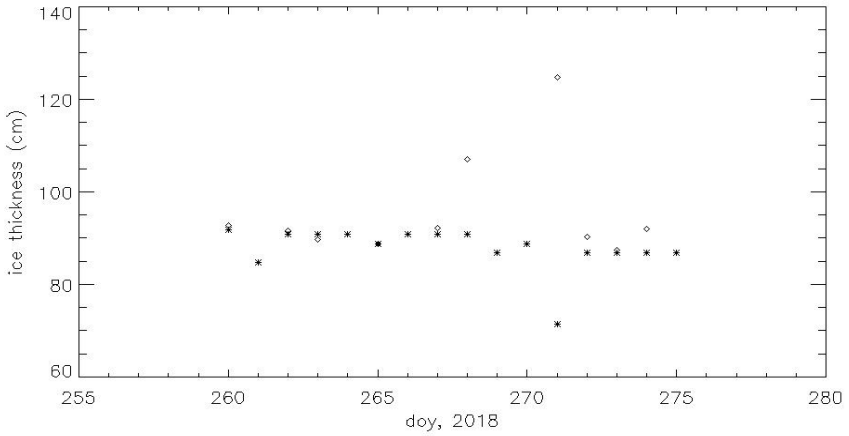
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Apr-19	Apr-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19		
Offline Products: ▪ Snow: Establish routine generation of global gridded binary and fractional snow cover products on a daily basis ▪ IST: Begin routine production of I-band IST algorithm using only the 11 um I-band channel ▪ Ice Concentration: Start generating an I-band resolution product with available I-band IST	Sep-19			
Algorithm Cal/Val: ▪ Snow: Compare N20 Snow with SNPP, MODIS, and IMS snow data. Provide an in-depth evaluation of the Binary Snow product over different surface cover types, topography and geographical regions ▪ IST: Compare N20 IST with SNPP, MODIS, IceBridge, and IABP IST ▪ Ice Concentration: Compare N20 ice concentration with NPP, MODIS, SAR, Landsat, SENTINEL-1&2, and IceBridge data ▪ Ice Thickness: ValidateN20 ice thickness with NPP, IceBridge, CryoSat-2, SMOS, and ICESat-2 products	Sep-19			
Algorithm Updates: ▪ Modify/add quality flags if needed ▪ Ice Concentration: Improve tie-point processing for marginal ice zone ▪ **Ice Thickness**: • Ice growing/melting and dynamic adjustment factors • Snow depth climatology and interface temperature between ice and snow • Use weekly or bi-weekly running mean temperature	Sep-19			

Highlights:



*NOAA-20 and CRREL buoy ice thickness, Sep 17 – Oct 2, 2018. Buoy thickness is the * value, NOAA-20 thickness are diamonds.*

Active Fires

February, 2019

Accomplishments / Events:

- Worked on improvements to the land-water mask granulation scheme
- Provided material for the iMET training series on product status, performance and examples from the 2018 fire season
- Worked on proposed I-band transition to operations issues
- The User Request for the I-band product was submitted on February 7 and approved on February 15
- Worked with NCEP on data access for operational smoke model input
- Submitted abstracts to the 2019 Joint Satellite Conference and Pecora 21 / ISRSE 38
- Worked on improved data visualization

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

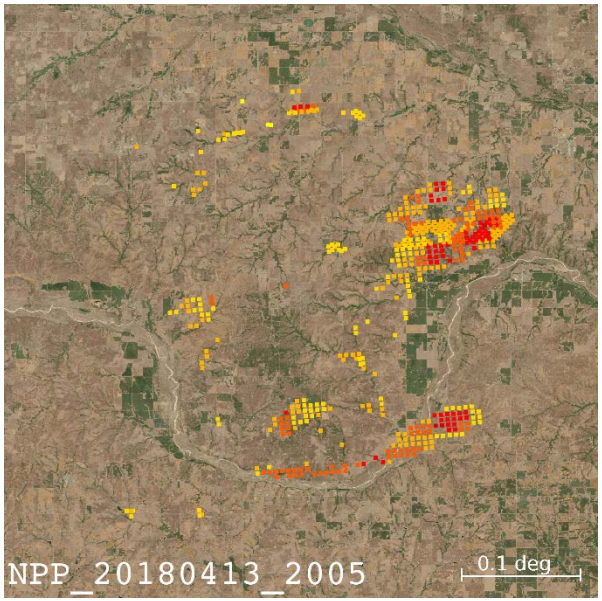
None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
S-NPP / NOAA-20 data analysis	Sep-19	Sep-19		
I-Band Active Fires algorithm development and Cal/Val				
User request for I-Band Active Fires	Mar-19	Mar-19	Feb-19	
Delta design review for I-band AF (Beta Maturity)	Apr-19	Apr-19		
Algorithm readiness review for I-band AF (Provisional Maturity)	Sep-19	Sep-19		
I-Band AF DAP deliver to NDE	Sep-19	Sep-19		

Highlights:

Improved visualization of fire radiative power (FRP) from the I-band product over a static Landsat-based background image. The image illustrates significant variability of FRP within the fire fronts, at high spatial detail.

Rhea Fire, OK, April 13, 2018.



Credit: Marina Tsidulko, IMSG@STAR

Surface Reflectance

February, 2019

Accomplishments / Events:

- Worked with the NASA team members to perform AERONET-based validation of the NDE-generated product
- Evaluated the performance of all quality flags
- Delivered code fix to avoid granule dropouts due to missing geospatial data in the last scan of the granule
- Continued working with the Vegetation Index team on downstream product evaluation
- Communicated with the NOAA CoastWatch team on their application of the surface reflectance product

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Feb-19	Mar-19		Validation data issues
Final DAP (N20 Algorithm Adjustment)	Apr-19	Apr-19		
S-NPP / NOAA-20 data analysis	Sep-19	Sep-19		

Highlights:

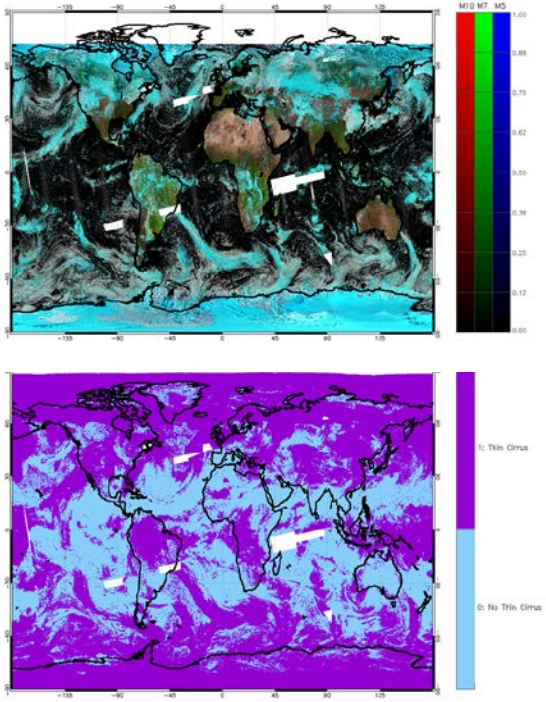
An example of the performance of the Thin Cirrus Flag (QF7, Bit 4) of the NDE NOAA-20 Surface Reflectance product.

Top: VIIRS M10-M7-M5 False Color image

Bottom: Thin Cirrus Flag

February 13, 2019

Credit: Mike Wilson, IMSG@STAR



Surface Type

February, 2019

Accomplishments / Events:

- Downloaded and processed VIIRS observations acquired in February 2019 to create daily mosaics (up to the writing of this report)
- Generated monthly composites for the first four months of 2018. Composites for the remaining months will be generated in the next few weeks.
- Developed and submitted abstracts on the research of VIIRS Surface Type to the following conferences:
  - IGARSS 2019 to be held on July 28 – August 2, 2019
  - Joint meeting of the 21st Pecora Conference (Pecora 21) and the 38th International Symposium on Remote Sensing of Environment (ISRSE-38) to be held on October 6 – 11, 2019

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule	X				

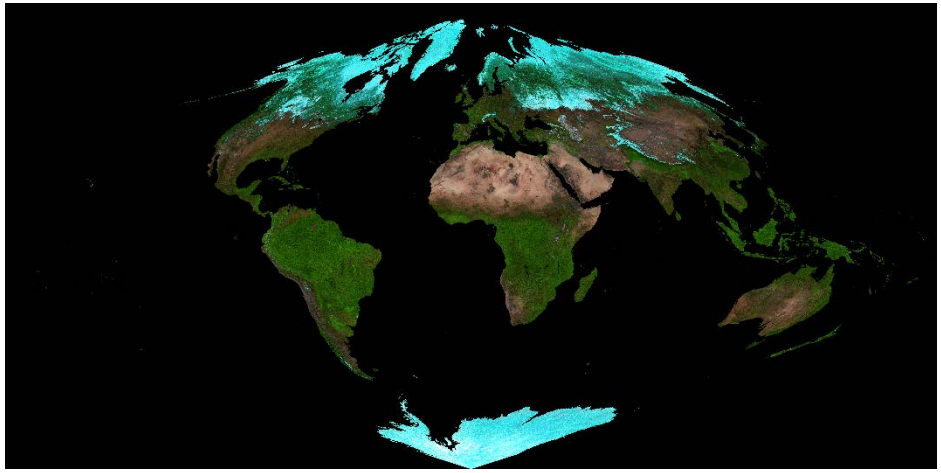
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta Maturity (N20 Cal/Val)	Jul-19	Jul-19		
Provisional Maturity (N20 Cal/Val)	Sep-19	Sep-19		
Annual performance report	Aug-19	Aug-19		
AST18 (Annual Surface Type):				
Complete monthly composites of global gridded VIIRS data (9 land bands + thermal bands) for VIIRS AST18 based on 2018 VIIRS data	May-19	May-19		
Generate VIIRS AST18 based on 2018 VIIRS data using SVM algorithm	Aug-19	Aug-19		
Comparison of AST18 with surface type validation data (Accuracy statistics of the new AST18 and LWM)	Sep-19	Sep-19		
Delivery of AST18 (available for users through STAR FTP)	Sep-19	Sep-19		
Communicate with EDRs and ASSISTT teams on switching to use VIIRS AST	Mar-19	Mar-19	Mar-19	

Highlights:



A global monthly composite created using all VIIRS observations acquired in March 2018 provided a near cloud free view of all land area of the globe. Green and cyan indicate vegetation and snow/ice cover in this composite.

Land Surface Temperature

February, 2019

Accomplishments / Events:

- Finalized the J1 provisional maturity review ppt file. Updated the readme file. (Highlights, slide 2, 3,4)
- Revised the combined gridded LST/LSA product ATBD including the gridded LST and gridding tool sections
- Finalized the gridded LST algorithm software package. The code has been modified following NDE requirements. The software package has been delivered and tested in ASSIST. The preparation for the unit test readiness review is ready. (slide 5 and 6)
- Finished the draft version of a manuscript titled “Enterprise LST algorithm development and its evaluation with NOAA 20 data” and modified following the comments from the internal review.
- Submitted an abstract “Enterprise LST Product Status and Its Readiness “ to Pecora 21/ISRSE 38.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

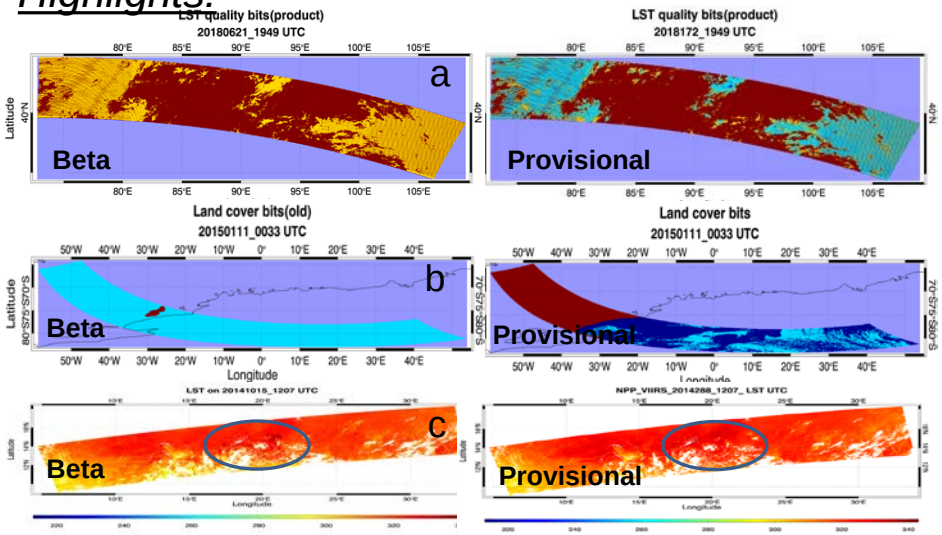
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Schedule change due to the government shutdown

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Operational Readiness Review (ORR	Nov-18	Nov-18	11/16/18	
Provisional Maturity (N20 Cal/Val)	Feb-19	Feb-19	ready	Impact of Shutdown
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19		Impact of Shutdown
NOAA-20 LUT update	Apr-19	Apr-19		
Cal/Val tool development (SNPP & J1 comparison)	Apr-19	Apr-19		
Deep-dive analysis software package for the anomaly watch	Sep-19	Sep-19		
Global gridded LST				
Critical Design Review (CDR)			10/23/18	
Unit Test Readiness Review (UTRR)	Feb-19	Feb-19	scheduled	03/12/19
Initial DAP to NDE	Mar-19	Mar-19		
Algorithm Readiness Review (ARR)	Jul-19	Jul-19		
Final DAP to NDE	Jul-19	Jul-19		

Highlights:

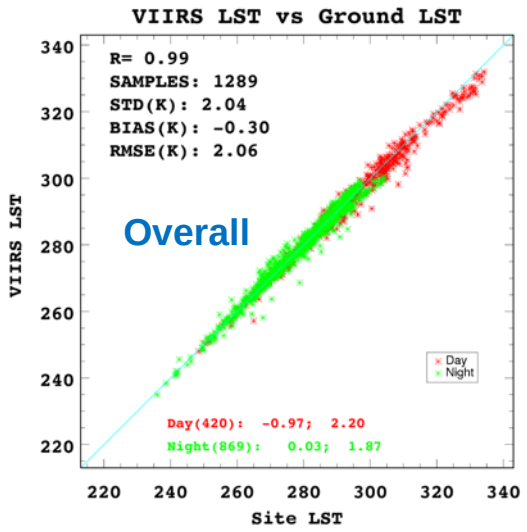


N20 VIIRS LST EDR Improvements from beta to provisional: fixed nighttime quality flag issue(a); snow cover input switch to VIIRS snow /ice EDR(b) ; LST discontinuity mitigation (c)

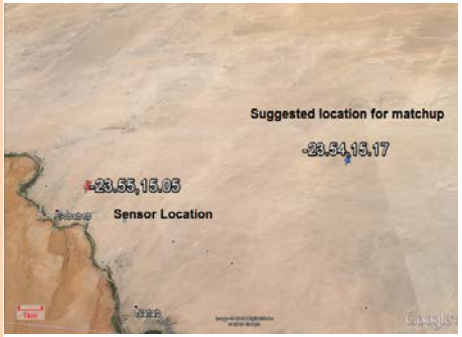
Land Surface Temperature

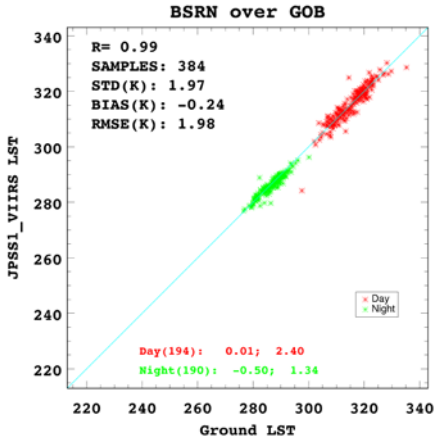
February, 2019

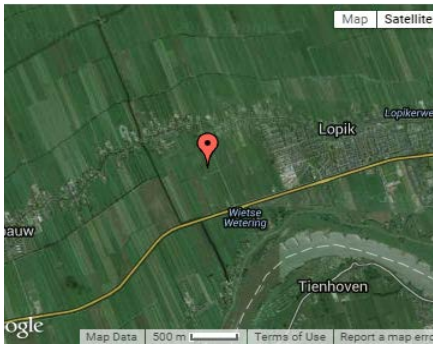
Ground Data Validation

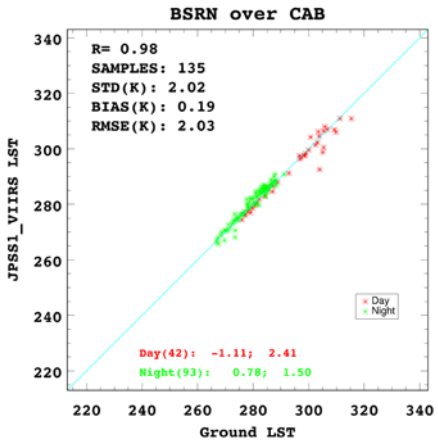


Site Name	count	bias	std	Count (day)	Bias (day)	Std (day)	Count (night)	Bias (night)	Std (night)
BON	163	0.47	1.38	39	0.48	1.95	124	0.47	1.15
TBL	193	-0.20	1.45	59	0.10	1.56	134	-0.33	1.39
DRA	245	-2.08	1.55	103	-2.06	1.89	142	-2.09	1.25
FPK	200	-0.41	1.47	69	-0.72	1.75	131	-0.24	1.28
GWN	200	0.52	3.01	66	-2.75	2.30	134	2.14	1.73
PSU	80	0.55	1.71	17	1.30	1.46	63	0.35	1.73
SXF	208	0.10	1.54	67	-0.19	1.68	141	0.23	1.45
All	1289	-0.30	2.04	420	-0.97	2.20	869	0.03	1.87







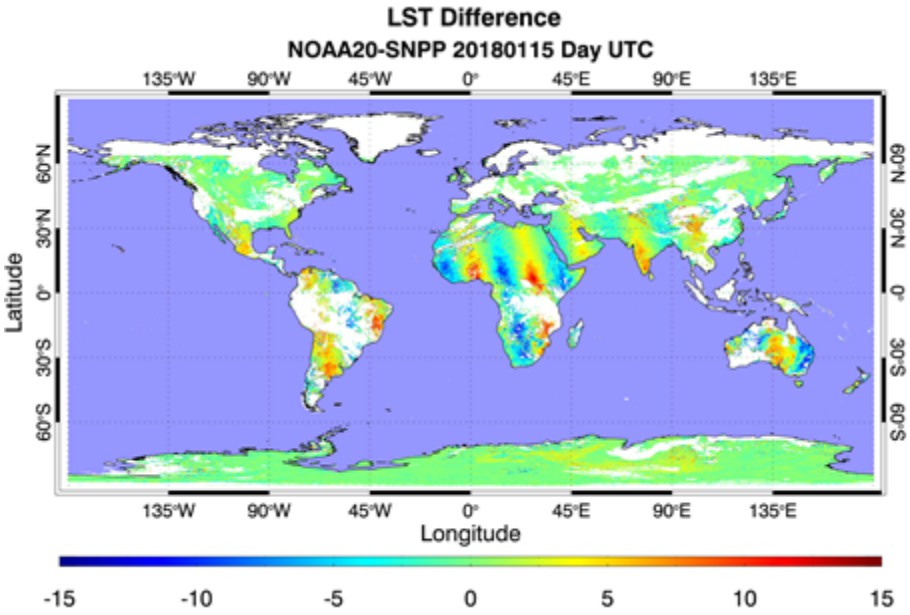


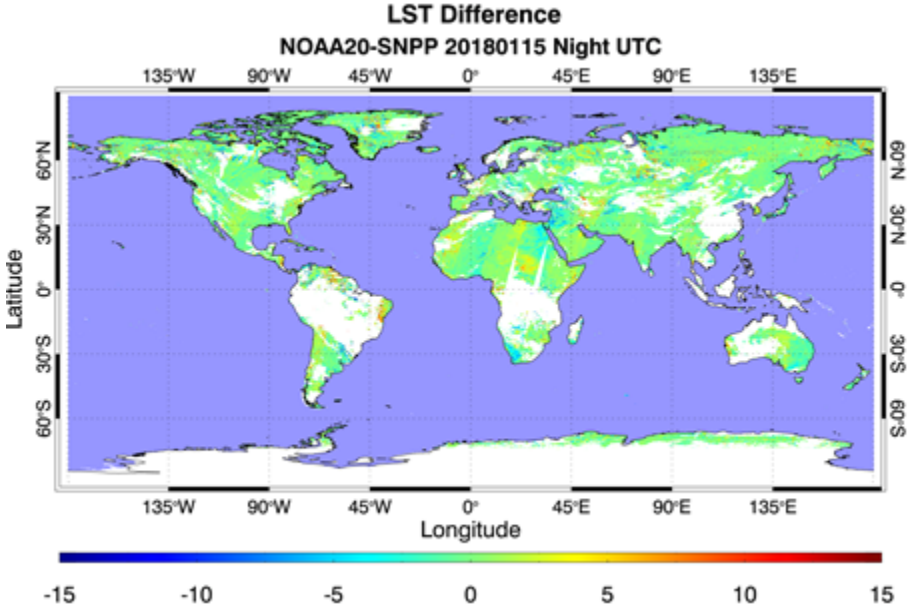
N20 VIIRS LST validation results with respect to SURFRAD observations (top) and BSRN observations(bottom). Data from January 5, 2018 to December 31, 2018 were used in the validation.

Land Surface Temperature

February, 2019

Cross satellite Comparison





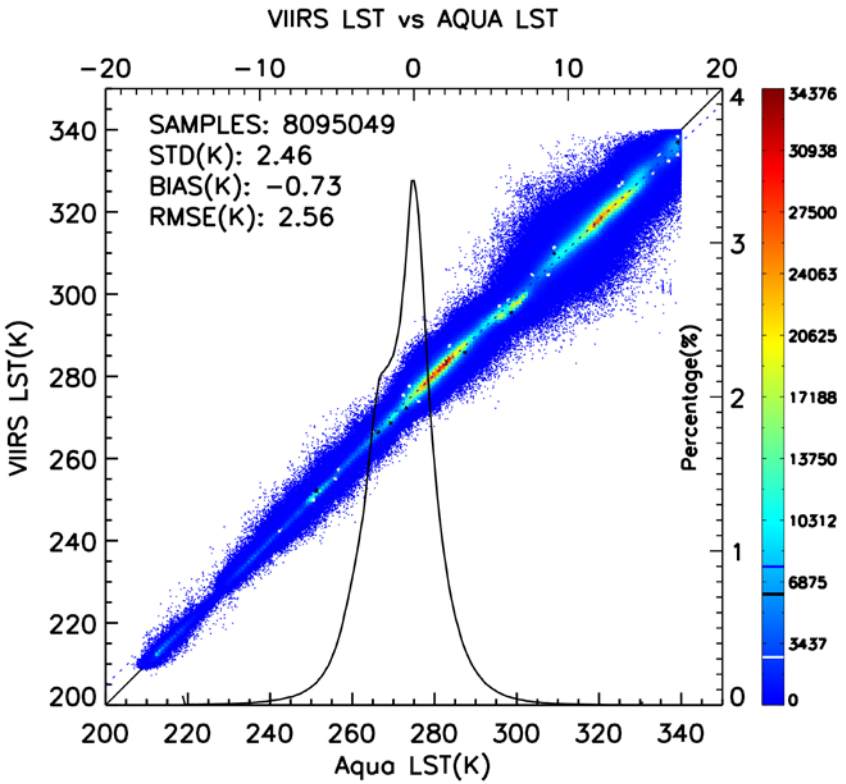
- NOAA20 and SNPP LST were generated using the latest LUT
- Two days in each month of 2018 were selected for comparison
- LST difference for day (Left) and night (Right) were presented

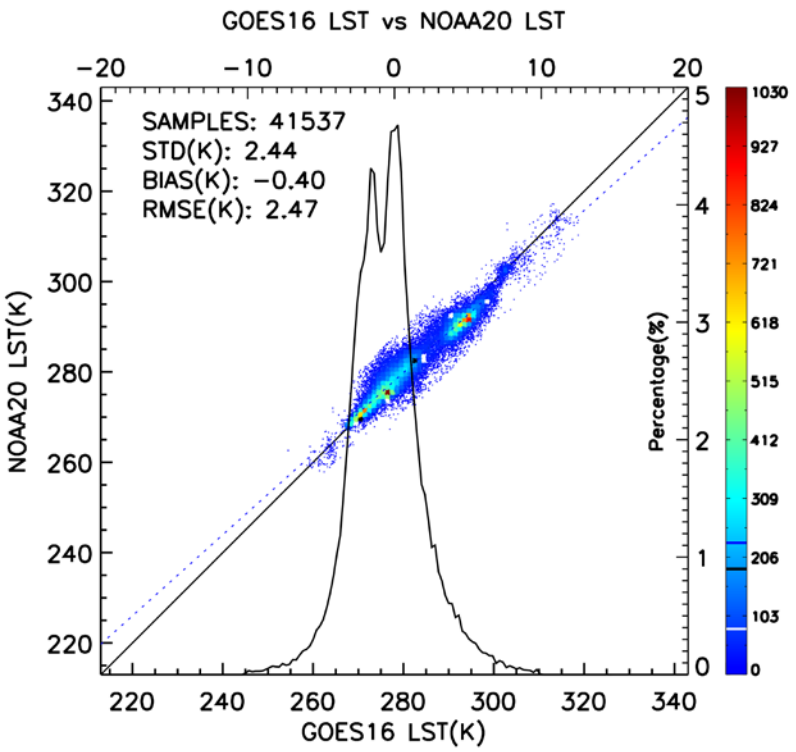
- Daytime LST difference presents a stripe pattern particularly at mid and low latitude whereas nighttime LST is not very obvious
- LST difference is small at high latitude area for both daytime and nighttime

Land Surface Temperature

February, 2019

Cross satellite Comparison

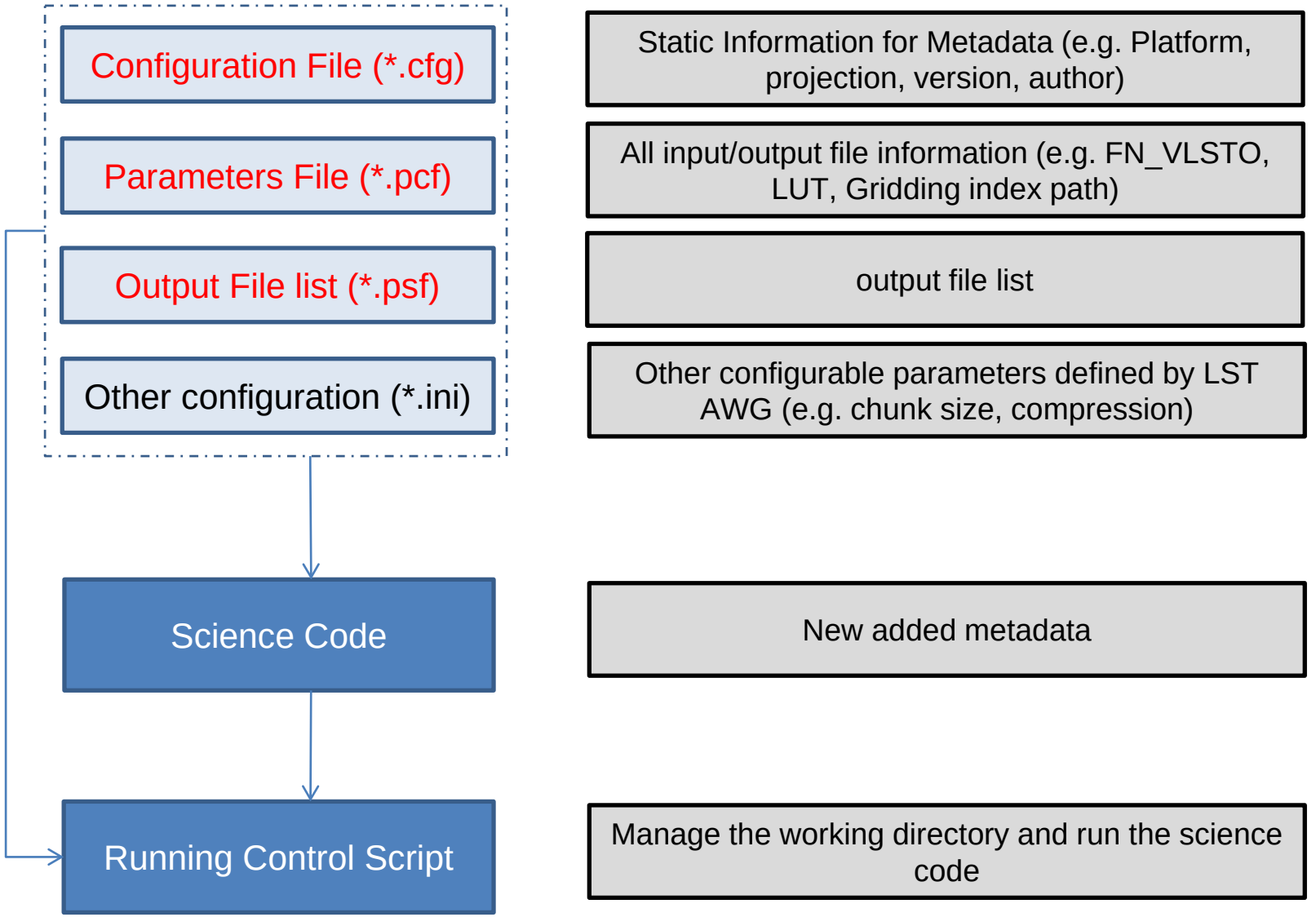




N20 LST is compared with MYD21, the latest MODIS LST product in version 6. About 40 SNOs scenarios were selected. It represents the LST difference over Africa, Australia, US, mid-north Asia, South America, Greenland and South pole area. It covers every month from February, 2018 to November, 2018.

N20 LST is compared with GOES 16 ABI LST over CONUS. Three days GOES 16 LST data on April 15, 17 and 28, 2018 were used for the cross comparison.

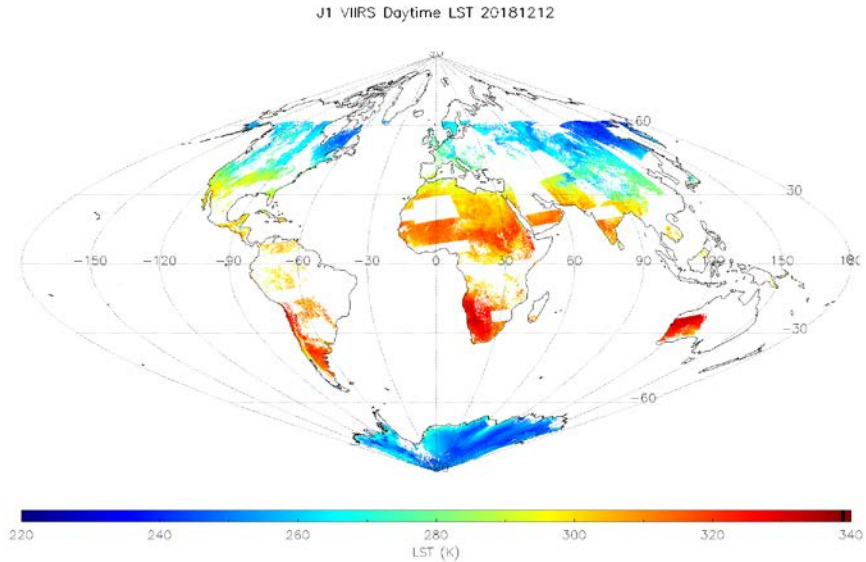
Gridded LST Code running structure update

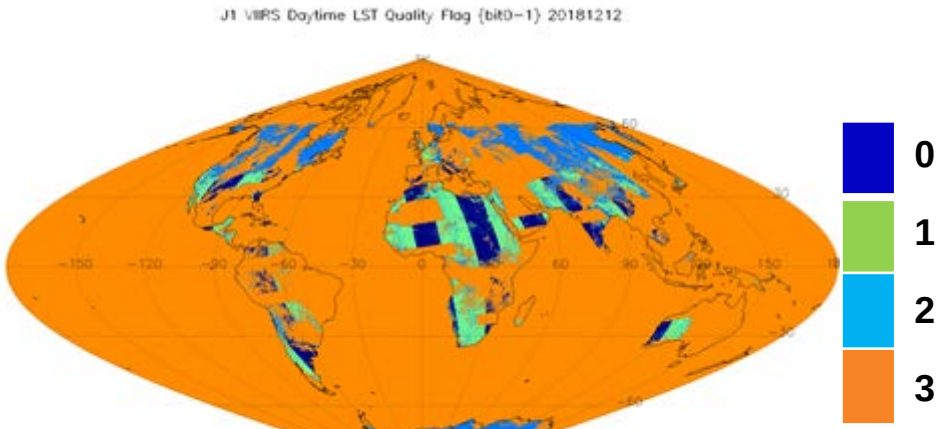


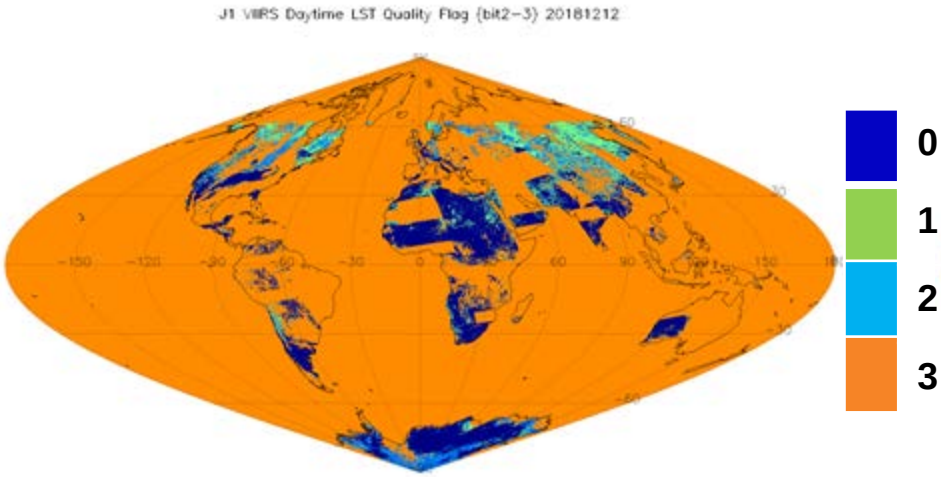
Gridded LST code configuration and running sequence

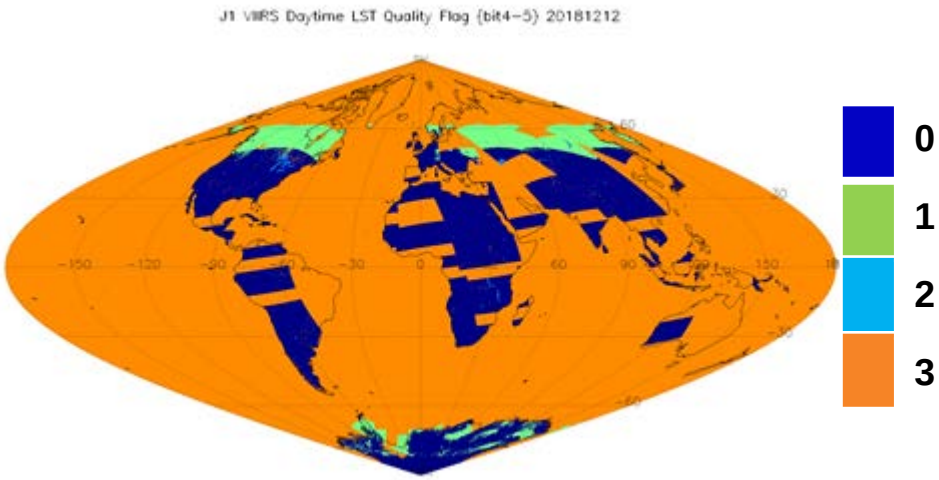
Land Surface Temperature

February, 2019









An example of gridded daytime LST and its quality flag map (bitmap)

Surface Albedo

February, 2019

Accomplishments / Events:

- Delivered the NOAA-20 VIIRS LSA Provisional Review Slides and Readme file
- Drafted the Level-3 gridded VIIRS LSA ATBD, and sent out for internal review
- Validated the S-NPP LSA NRT output and summarized the findings in slides for Feb 2019 DAP delivery (***highlight***)
- Reported the inconsistency of LSA file naming conventions between framework and NDE; and the framework has updated to be the same as NDE
- Delivered the Level 3 Gridded albedo code to framework after polishing the configure file according to NDE standard
- Tested the land LSA LUTs developed for NOAA-20 VIIRS Spectral Response Function and planned to deliver them to framework (***Slide #1***)
- Delivered an abstract to AMS Joint Meeting on VIIRS LSA evaluation
- Wrote the project annual report to be submitted to CICS

Overall Status:

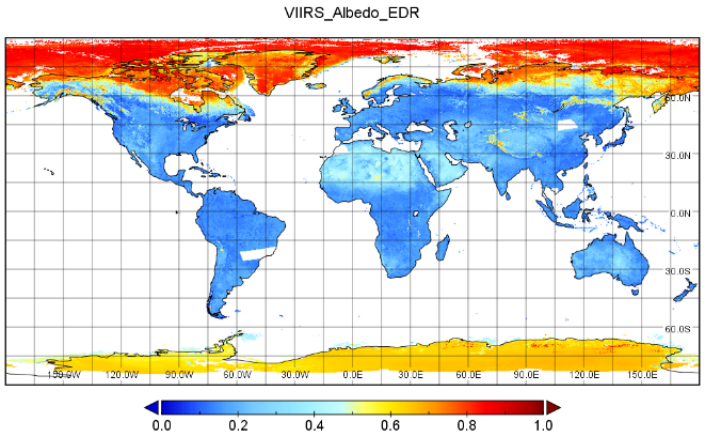
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

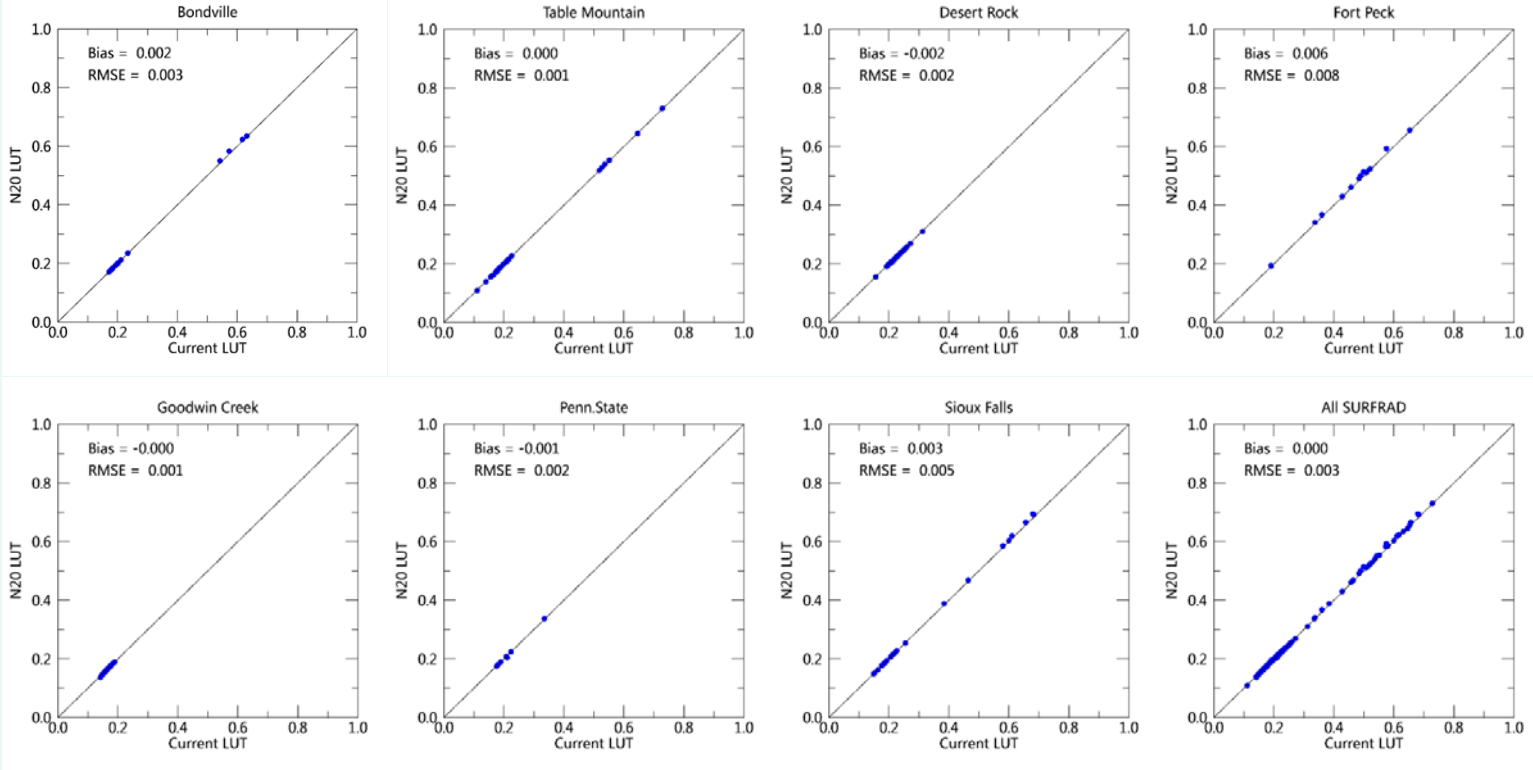
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Feb-19	Mar-21	ready	
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-21		
NOAA-20 LUT update	Apr-19	Apr-19		
New 1-km albedo climatology dataset delivery	Apr-19	Apr-19	Sep-18	Submitted to AIT for Jan 2019 DAP
Cal/Val tool development (SNPP & J1 comparison)	Apr-19	Apr-19		
Deep-dive analysis software package for the anomaly watch	Sep-19	Sep-19		
Global gridded LSA				
Critical Design Review (CDR)			10/23/18	
Unit Test Readiness Review (UTRR)	Mar-19	Mar-19	scheduled	03/12/19
Initial DAP to NDE	Mar-19	Mar-19		
Algorithm Readiness Review (ARR)	Jul-19	Jul-19		
Final DAP to NDE	Jul-19	Jul-19		

Highlights: S-NPP VIIRS L2 LSA of Feb 2019 DAP



S-NPP VIIRS LSA product in NRT will use the latest updated code in Feb 2019 DAP. In this version, the sea-water pixels has been filtered, and the sea-ice albedo climatology has been updated.

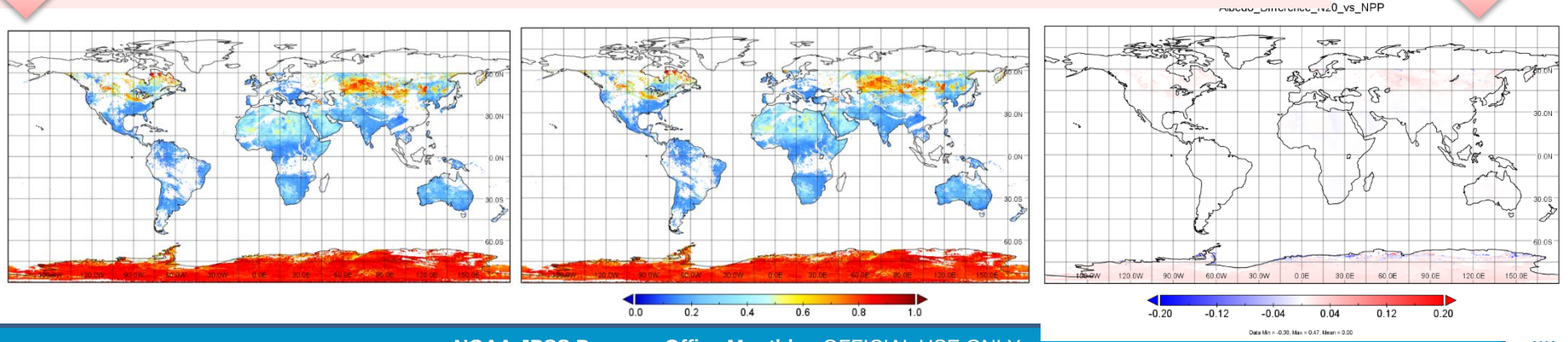
New N20 LUT v.s Current SNPP LUT for NOAA-20 LSA production



Current SNPP LUT generates nearly the same LSA results with new developed N20 LUT over the seven SUFRAD sites (Bias = 0, RMSE = 0.003).

- Snow surface show slight positive differences (N20>SNPP), with Bias of 0.01 and RMSE of 0.02.
- Generic surface displays many cases of significant differences, likely due to incorrect snow mask information.

LSAs for SNPP and for NOAA-20 generate close LSA values over global regions on Jan 6th, 2018 (Bias = 0.01, RMSE =0.02).



Green Vegetation Fraction

February, 2019

Accomplishments / Events:

- Prepared GVF validation data from Landsat 8 and validation tool to process the GVF validation data for provisional maturity review
- Produced NOAA-20 VIIRS GVF test data from Dec 01, 2018 to Feb 23, 2019 for the provisional maturity review
- STAR VIIRS VI & GVF group website (Beta Version) is just released
- Updated the visualization website for providing better VIIRS GVF access to users in the following website. https://www.star.nesdis.noaa.gov/smcd/viirs_vi_web/landwatch.php

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

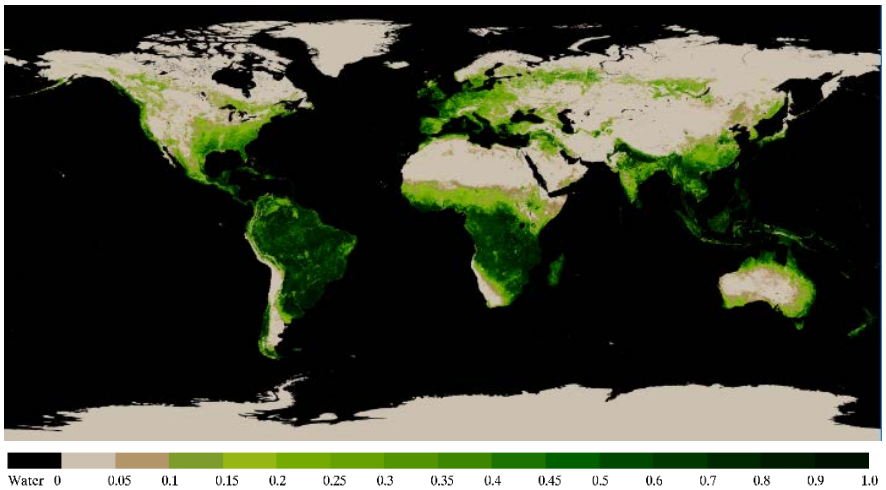
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

The government shutdown seriously impacted the NOAA-20 VIIRS GVF provisional review, and it will be rescheduled to March 19, 2019

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Mar-19	Mar-19		
Initial DAP (N20 Algorithm Adjustment)	Nov-18	Nov-18	11/30/18	11/15/18 to ASSISTT
Final DAP (N20 Algorithm Adjustment)	May-19	May-19		
NVPS algorithms optimization and improvement	Apr-19	Apr-19		
Cal/Val tool development (SNPP & J1 comparison)	Jun-19	Jun-19		
Deep-dive analysis software package for the anomaly watch	Sep-19	Sep-19		

Highlights:

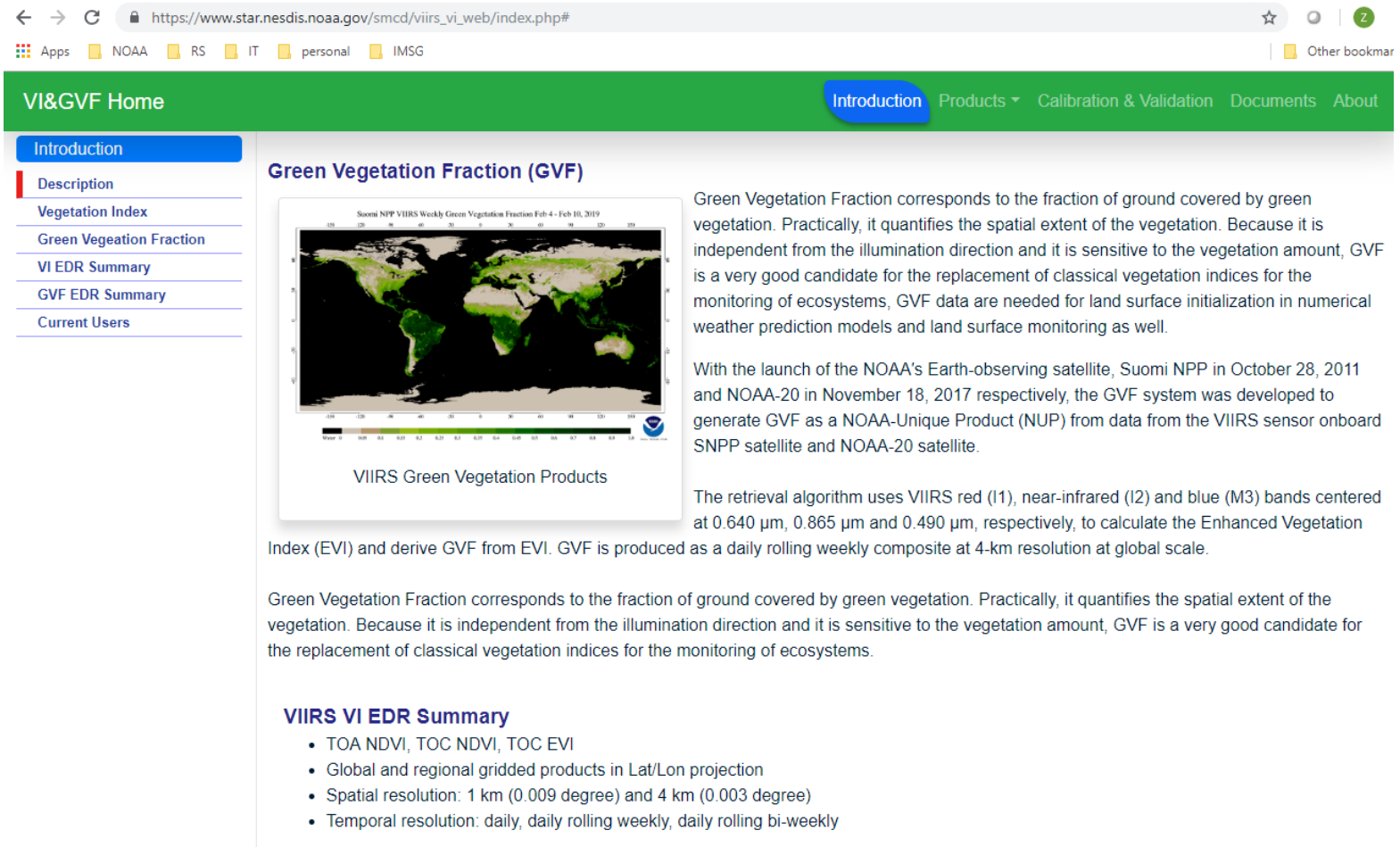


NOAA-20 Weekly GVF Feb 19-25, 2019

Landsat 8 data for NOAA-20 GVF validation

- Prepared GVF validation data from Landsat 8 and validation tool to process the data for provisional maturity review
  - Downloaded and processed 22 scenes of Landsat 08 reflectance data over EOS validation core sites with different land cover types
  - Developed C/C++ programs to process the Landsat 08 data and derive GVF data from Landsat classification maps for NOAA-20 GVF validation
  - Produced NOAA-20 VIIRS GVF test data from Dec 01, 2018 to Feb 23, 2019 for the provisional maturity review

STAR VI and GVF Group Website (Beta Version) Released



NOAA VIIRS VI & GVF group website (Beta Version) was just released for internal users. The figure above is a screenshot of main page of the VIIRS VI & GVF group website. Any comments and suggestions will be highly appreciated. Since the website is still under construction, the released beta version is mainly for soliciting comments and advices from internal users. The website can be found in the following link (https://www.star.nesdis.noaa.gov/smcd/viirs_vi_web/index.php).

Vegetation Index

February, 2019

Accomplishments / Events:

- Processed and transferred updated surface reflectance (SR) granules covering AERONET sites for SR validation to NASA SR team
- Testing the impact of updated biweekly composite algorithm in VIIRS VI operational code on VIIRS VI product
- Validating NOAA-20 VIIRS VI product using MODIS
- STAR VIIRS VI & GVF group website (Beta Version) is just released

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

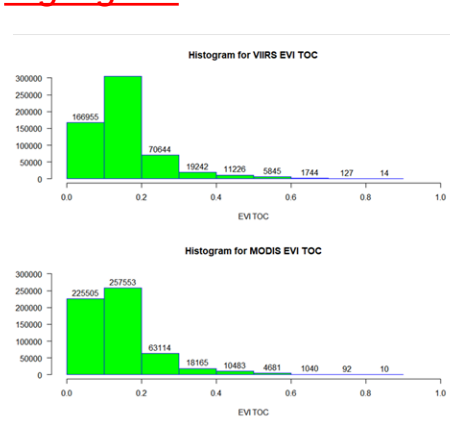
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

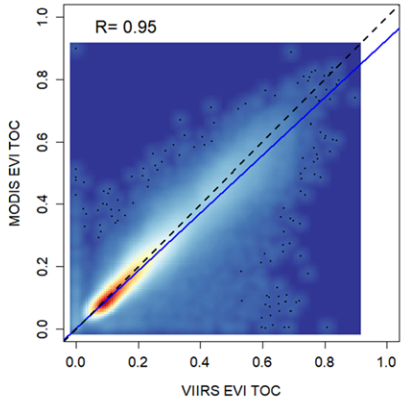
Issues/Risks:

The government shutdown seriously impacted the NOAA-20 VIIRS VI provisional review, and it will be rescheduled a month later (March 19, 2019)

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Mar-19	Mar-19		
Initial DAP (N20 Algorithm Adjustment)	Nov-18	Nov-18	11/30/18	11/15/18 to ASSISTT
Final DAP (N20 Algorithm Adjustment)	May-19	May-19		
NVPS algorithms optimization and improvement	Apr-19	Apr-19		
Cal/Val tool development (SNPP & J1 comparison)	Jun-19	Jun-19		
Deep-dive analysis software package for the anomaly watch	Sep-19	Sep-19		

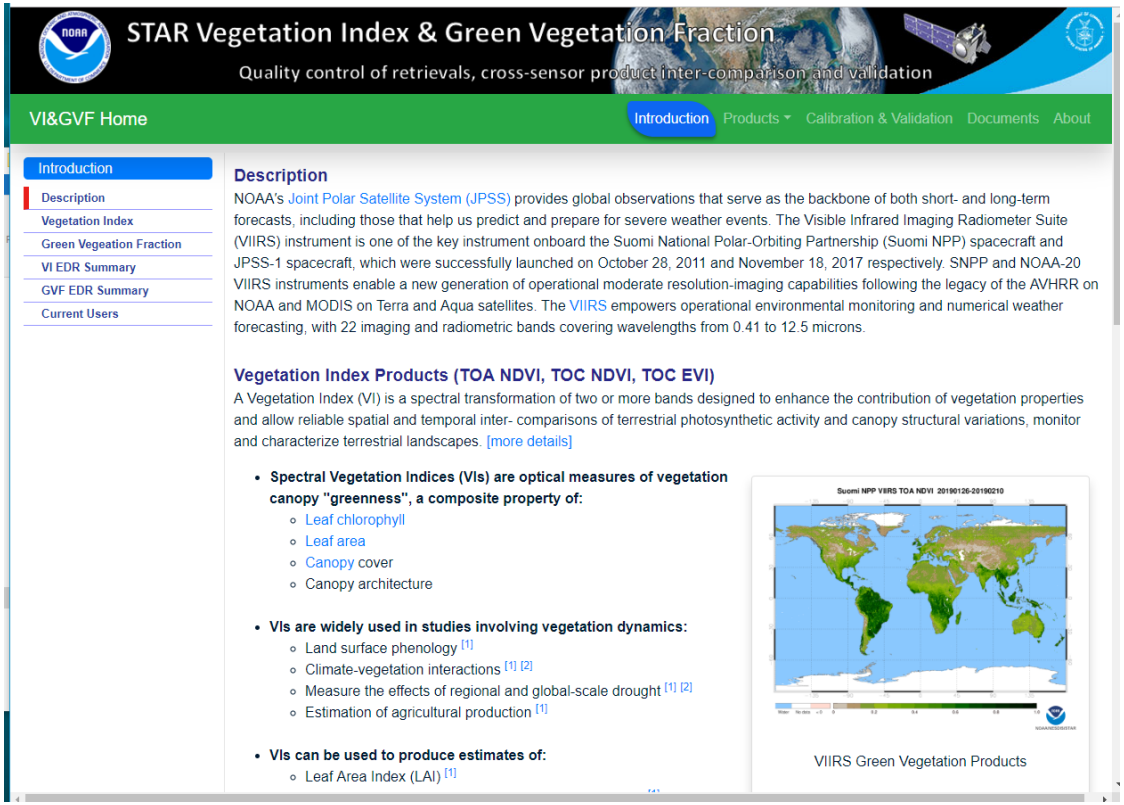
Highlights:





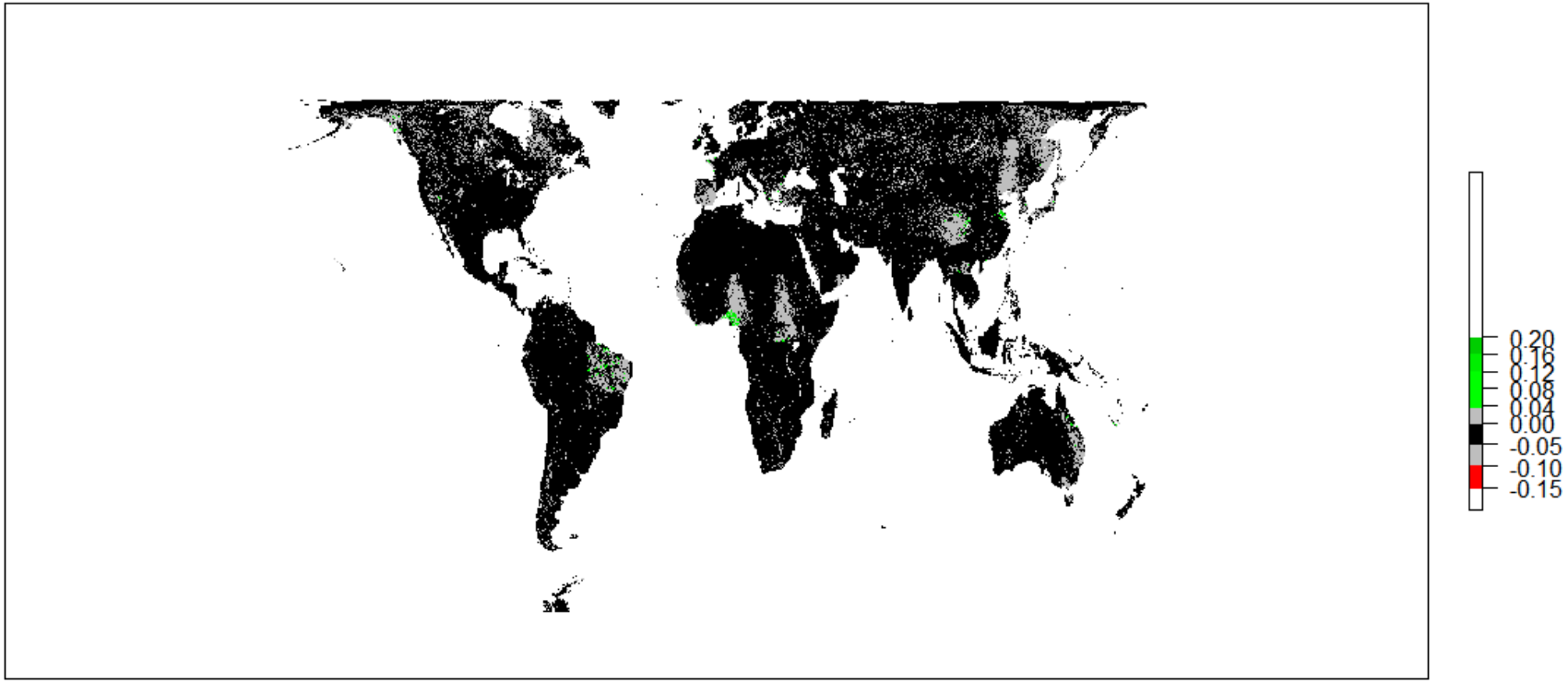
To validate NOAA-20 VIIRS VI product, MODIS VI product (i.e., MYD13 C1 product) was employed for a comparison. Preliminary results based on a testing data acquired between January 09 and January 24, 2019 showed a highly consistent trend. Not only their histogram demonstrates similar patterns, but scatter plot suggests that NOAA-20 VIIRS VI product is highly consistent with those acquired by MODIS AQUA based VI product.

STAR VI and GVF Group Website (Beta Version) Released



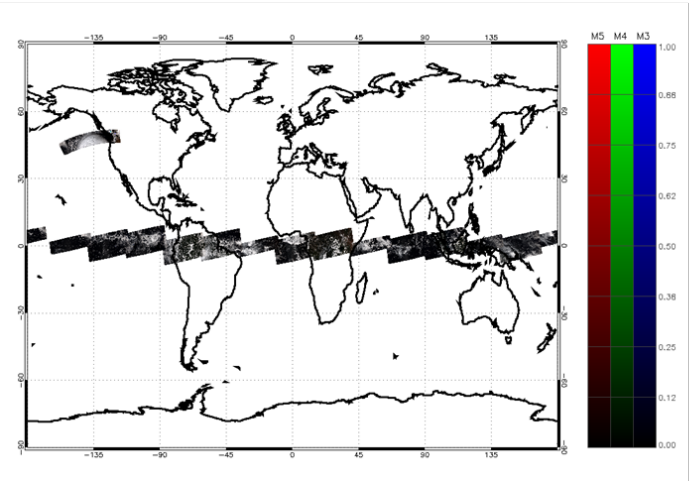
NOAA VIIRS VI & GVF group website (Beta Version) was just released for internal users. The figure above is a screenshot of main page of the VIIRS VI & GVF group website. Any comments and suggestions will be highly appreciated. Since the website is still under construction, the released beta version is mainly for soliciting comments and advices from internal users. The website can be found in the following link (https://www.star.nesdis.noaa.gov/smcd/viirs_vi_web/index.php).

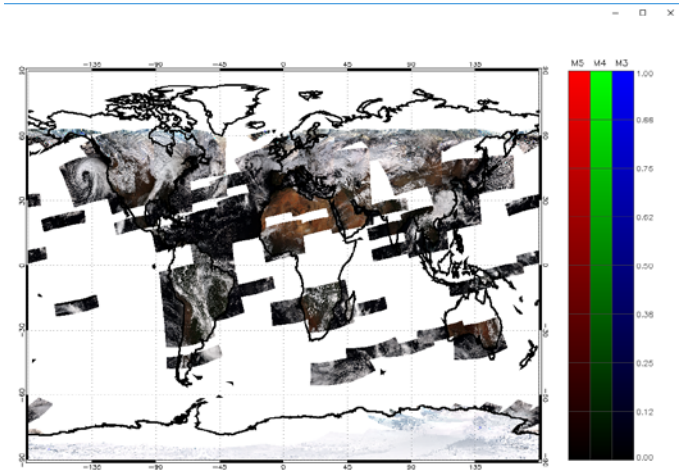
Evaluation of the Updated Biweekly Composite Algorithm



To improve the processing speed of VIIRS VI operational code, VIIRS VI team adopted an efficient strategy to produce the VIIRS daily rolling biweekly VI composite. However, preliminary test found noticeable differences in some heavily forested regions (e.g., Amazon, West Africa and Southern China). As a result, further test will be required to identify the potential causes for the differences

NOAA VIIIRS SR Granules Delivered for SR Product Validation





To prepare NOAA NOAA-20 VIIRS Surface Reflectance (SR) provisional review, we delivered SR granules covering AERONET sites to SR validation team through FTP. However, a bug was found in selecting SR granules, which leads to very limited SR granules (24 (left figure) out of 532 granules) selected. VIIRS SR team quickly fixed the bug, reproduced SR granules(after correction,154 granules (right figure) were selected), and delivered them to SR validation team.

Vegetation Health

February, 2019

- *Accomplishments / Events:*
- Compared weekly composite 2019) with 2018 NDVI & BT (500m x 500m) from NOAA-20 and S-NPP (see Fig week 9). The match is good.
- Developed verification tool to test NOAA-20 VH data.
- Tested algorithm to adjust climatology
- Submitted abstract to PECORA, AMS meetings
- Communicated with users about VIIRS performance

Overall Status:

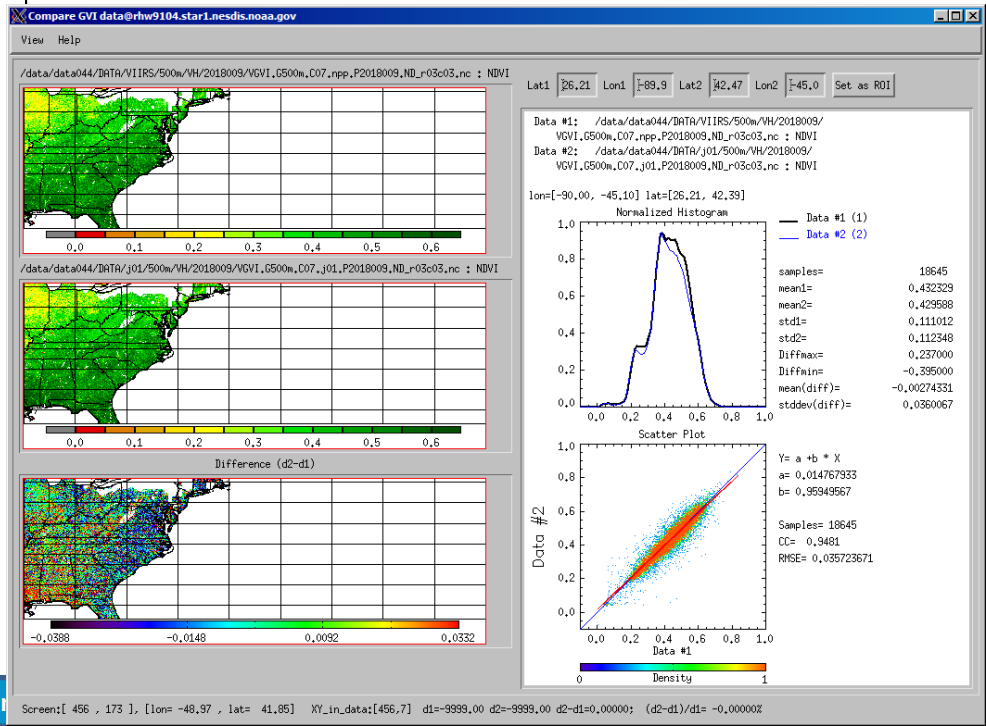
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Feb-19	**Mar-19**		03/21/19
S-NPP / NOAA-20 data analysis	Sep-19	Sep-19		
Cal/Val tool development (SNPP & J1 comparison)	Sep-19	Sep-19		



Ocean Color

February, 2019

Accomplishments / Events:

Drs. Xiaoming Liu and Menghua Wang just published "Filling the gaps of missing data in the merged VIIRS SNPP/NOAA-20 ocean color product using the DINEOF method," in *Remote Sensing*.

3 External Cal/Val teams reported progress:

- ZhongPing Lee et at from U. Mass Boston
- Ken Voss from U. Miami
- Sherwin Ladner et al from NRL at Stennis

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Big jumps in NOAA-20 SDR have impacted the schedule for validation of NOAA-20 MSL12 ocean color EDR

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta Maturity (N20 Cal/Val)	Nov-18	Nov-18	11/27/18	
Provisional Maturity (N20 Cal/Val)	Mar-19	Mar-19	11/27/18	
Init N20 DAP to CoastWatch (data)	Feb-19	Feb-19	Feb-19	
Init N20 DAP to CoastWatch (code)	Apr-19	Apr-19		
Vicarious calibration for VIIRS-NOAA-20 using MOBY in situ data	Dec-18	Dec-18	Dec-18	
NOAA-20 polarization effect correction validation, evaluation, and analysis	Jun-19	Jun-19		
Cal/Val team complete the fourth VIIRS cruise report and in situ data analyses (e.g., improve in situ data quality)	Jun-19	Jun-19		
In situ data collections including NOAA dedicated cruise in May 2018 and continue Cal/Val for VIIRS ocean color EDR, report	Aug-19	Aug-19		

Highlights: New publication from Liu and Wang in Remote Sensing

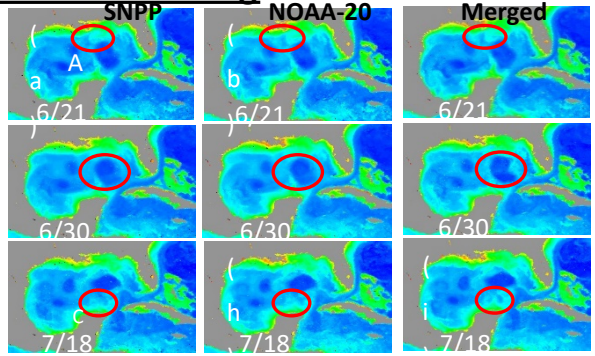


Figure 5 from article. Comparison of the VIIRS-derived ocean Chl-a features in the GOM in the gap-filled images based on SNPP (left), NOAA-20 (middle), and SNPP/NOAA-20 merged (right) data in 2018 on June 21 (top), June 30 (middle), and July 18 (bottom). The gap-filled Chl-a image from VIIRS SNPP/NOAA-20 merged data provides more detailed ocean features, compared with those from VIIRS-SNPP or VIIRS-NOAA-20 alone.

Sea Surface Temperature

February, 2019

Accomplishments / Events:

- ACSPO 2.60 has been operational in NDE since 6 Nov 2018. PO.DAAC & NCEI fully archived 2.60 data, from NPP and N20
- The 2.60 will be superseded by ACSPO 2.61 on 10 Apr 2019. (No code change, only LUTs updated to mitigate hi-lat biases)
- Work is underway to reprocess complete NPP & N20 records (RAN2) and replace incomplete and piece-meal holdings in PO.DAAC and NCEI with a consistent long-term RAN2 record
- Work is underway on 2.80 to more fundamentally address the issues with the SST retrieval algorithm, and minimize angular, regional and cross-satellite biases.
- In the interim, 2.70 will be released which mostly aims at adding Metop-C and G17, and extensive code optimization. The 2.70 will not be implemented for VIIRS.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
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4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

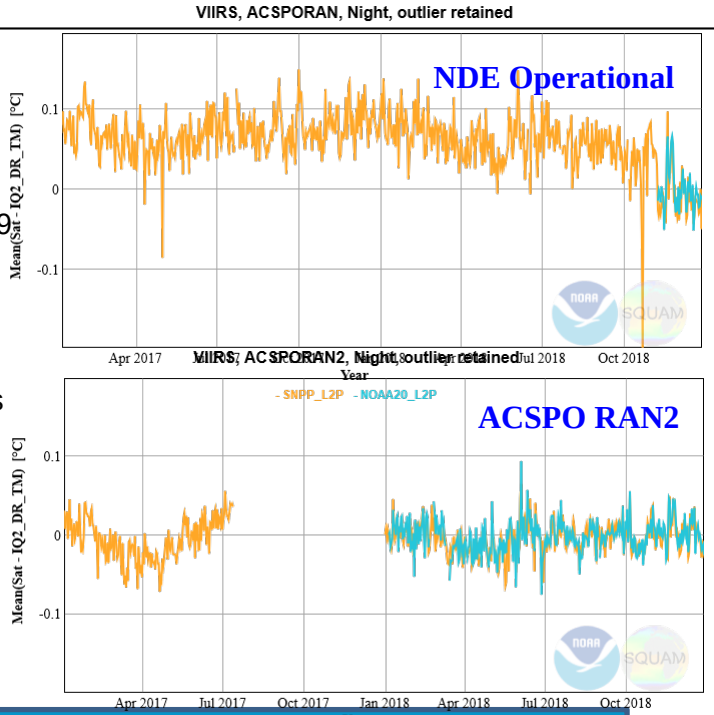
Milestones	Original Date	Forecast Date	Actual Completion Date
NOAA-20 Calibration/Validation			
Beta Maturity			04/18/18
Provisional Maturity			04/18/18
Validated Maturity	Apr-19	Apr-19	
NOAA-20 Algorithm Adjustments			
Initial DAP (ACSPO 2.60)			07/05/18
Interim DAP (2.61) (update LUTs as needed)	Feb-19	Feb-19	02/12/19
Final DAP (ACSPO 2.80)	Aug-19	Aug-19	
JPSS-2 Schedule			
J2 Cal/Val Plan - draft delivery	Jun-20	FY20	
J2 Cal/Val Plan - final delivery	Dec-20	FY21	
Planned Algorithm Updates/Cal-Val			
VIIRS RAN2 N20 archived PO.DAAC/NCEI	Jun-19	Jun-19	
VIIRS RAN2 NPP archived PO.DAAC/NCEI	Dec-19	FY20	
ACSPO 2.70 – Improved SST for data fusion	Aug-19	Aug-19	

Highlights:

ACSPO 2.61 will be operational in NDE 10 Apr 2019

2nd Reanalysis (RAN2) of VIIRS SST (based on ACSPO v2.61) is underway

Work underway w/PO.DAAC & NCE to archive full records of NPP and N20



VIIRS Polar Winds

February, 2019

Accomplishments / Events:

Evaluation of NDE (v2r1) NOAA-20 Cloud Motion Vectors (CMV) has been extended with comparisons to rawinsondes over the Arctic and Antarctic from 18 December 2018 through 31 January 2019. The statistical results are shown in Table 1. **Total accuracy and precision meet the requirements of 7.5 and 4.2 m s^{-1}**, respectively.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta/Provisional Maturity			10/02/18	
Validated Maturity (N20 Cal/Val)	May-19	May-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19		
Introduce and evaluate a parallax correction in the winds algorithm (it is needed for the mixed-satellite product)	Sep-19	Sep-19		
Finalize development and begin routine processing of combined (mixed-satellite) S-NPP/NOAA-20 global winds	Sep-19	Sep-19		
Implementation of the shortwave IR (2.25 µm) band winds	Sep-19	Sep-19		

Highlights:

	Arctic				Antarctic			
	> 700 hPa	700 to >400 hPa	<=400 hPa	Total	> 700 hPa	700 to >400 hPa	<=400 hPa	Total
Vector NRMS (ms^{-1})	0.60	0.41	0.30	0.37	0.62	0.52	0.42	0.50
Precision (ms^{-1})	3.87	3.92	4.68	4.19	2.85	3.29	4.60	3.59
Bias (ms^{-1})	+0.06	-0.12	-0.01	-0.06	-0.09	+0.04	-1.01	-0.21
Accuracy (ms^{-1})	5.79	5.81	6.13	5.91	4.88	5.22	6.28	5.39
Mean AMV Speed (ms^{-1})	11.76	16.92	26.06	15.18	9.10	11.95	17.61	12.66
Sample Size	1437	5753	3653	10843	594	1939	716	3249

NOAA-20 VIIRS winds statistics when compared to rawinsonde winds, 18 December 2018 – 31 January 2019.

NUCAPS Products

February, 2019

Accomplishments / Events

- A new model to compute OLR, developed by NASA GSFC has been implemented. This model will serve as a cross comparison between the SNPP and N20 OLR product.
- A preliminary test on the format of the newly generated CrIS SDR files containing a polarization correction has been performed. This test confirmed the correctness of the format of the input files.
- A new plan has been put forward to acquire TROPOMI data for the validation and improvement of NUCAPS carbon monoxide.
- Cross comparison of SNPP and N20 carbon monoxide are being made towards the scope of the N20 validated maturity review.
- Nick Nalli is participating to the 2019 AEROSE field campaign.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity: Ozone, CO, OLR			10/02/18	
N20 Provisional Maturity: CH4	Apr-19	Sep-19		VPN was slow during shutdown; sources of error (forward model, upstream retrieval steps) need more investigation
SNPP & N20 Validated Maturity: CO	Sep-19	Sep-19		Same as above
Validated Maturity: S-NPP &N20 CH4	Sep-19	Mar-20		Same as above
Validated Maturity: SNPP- N20 CO2	Apr-19	Dec-20		Same as above
DAP (N20 Algorithm Adjustment)	Apr-19	Sep-19		Same as above
DAP (N20 Algorithm Adjutment)	Apr-19	Mar-20		Same as above
DAP (N20 Algorithm Adjustment)	Apr-19	Dec-20		Same as above
Generate regression coefficients (OLR)	Apr-19	SEP-19		VPN was slow during shutdown; Task was transferred to new hire. Need more time for training on IDL programming and OLR codes
Validation with NPP CERES radiation products (OLR)	Sep-19	Sep-19		Same as above
Improve NOAA-20 CO, CH4 and CO2 retrieval algorithm	Dec-18	Dec-18		
Validation against NUCAPS SNPP trace gas EDRs, other instruments (MOPITT, AIRS, IASI) and in situ measurements (TCCON, ATom, WE-CAN, KORUS)	Sep-19	Sep-19		
Optimize NOAA-20 AVMP/AVTP/O3 retrieval algorithm	Dec-18	Dec-18		
Validation against model data and radiosondes; SNPP and J1 EDRs cross comparisons	Sep-19	Sep-19		

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

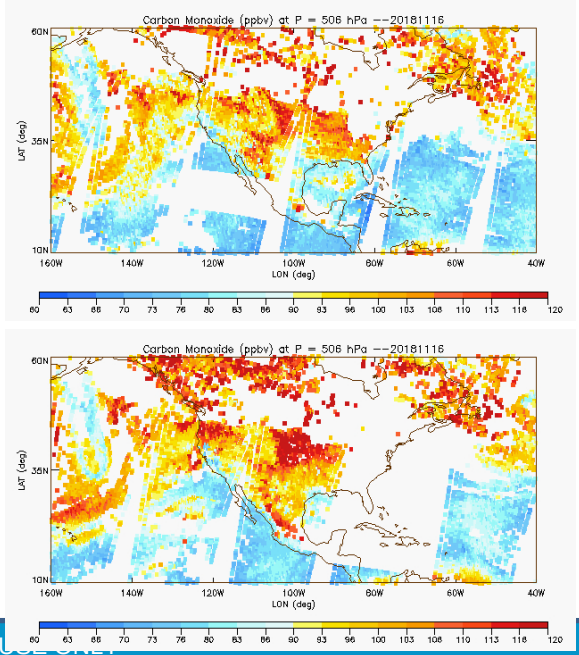
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Disk space: we are running out of disk space needed to store training ensembles and validation data sets.

Highlights:

NUCAPS CO during CA wildfire Nov. 16 2019



MiRS Products

February, 2019

Accomplishments / Events:

– Conducted analysis of proposed recalibrated ATMS antenna temperatures (TDRs) from NOAA-20 and SNPP. The recalibration by the SDR team used physical principles to correct for the onboard reflector emissivity which was affecting some channel measurements. This included derivation of new radiometric bias corrections (O-B) for 3 training days (2018-08-01, 2018-09-15, and 2018-10-31, see examples) and assessing the impacts on retrievals. Testing indicates only minimal impact of recalibrated data on MiRS retrievals.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

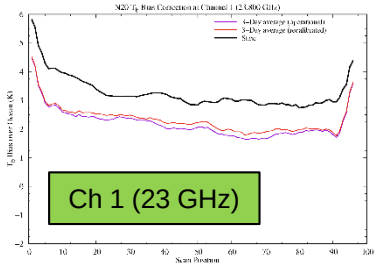
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

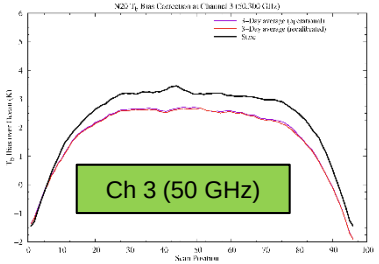
Issues/Risks:

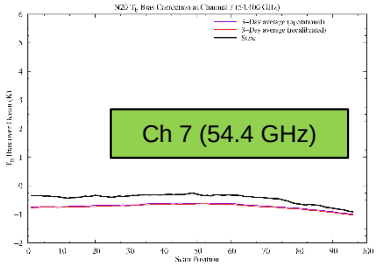
None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity (N20 Cal/Val)	Sep-19	Sep-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19		
Bias correction for NOAA-20	Mar-19	Mar-19		
Validation against ECMWF data and radiosondes	Sep-19	Sep-19		
Validation against other reference data for other EDRs	Sep-19	Sep-19		

Highlights:







Examples of NOAA-20/ATMS bias corrections corresponding to operational data for 3 training days (magenta), recalibrated data for 3 training days (red), and current static operational bias corrections (black). Results for ATMS channels 1, 3 and 7 are shown. For the 3-day training the operational and recalibrated data are very close.

Snowfall Rate

February, 2019

Accomplishments / Events:

- A NOAA-20 SFR package was delivered to the MiRS team for integration.
- Validation study has started for the NOAA-20 SFR Provisional Maturity Review. The study will include both the validation of the Snowfall Detection algorithm against ground observations and the validation of the Snowfall Rate algorithm against radar and gauge combined precipitation analyses.
- The NOAA-20 SFR Provisional Maturity Review will be combined with CDR and ARR and will be held in April 2019.
- The S-NPP SFR product will be implemented into NDE operation as part of the MiRS v11.3 system in March.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		x			
Technical / Programmatic		x			
Schedule		x			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity: NOAA-20 SFR	Mar-19	Mar-19		
Validated Maturity: S-NPP SFR	Sep-19	Sep-19		
Final DAP (N20 SFR)	Mar-19	Mar-19		
Update radiometric bias correction coefficients	Dec-18	Dec-18	Dec-18	
Deliver updated SFR package to MiRS team (for Mar-19 DAP delivery)	Feb-19	Feb-19	Feb-19	
Validation against in-situ, Stage IV, and MRMS data	Jul-19	Jul-19		

Highlights:

Comparison of NOAA-20 SFR statistics before and after calibration against Stage IV radar and gauge combined precipitation analyses

	Correlation Coeff.	Bias (mm/hr)	RMSE (mm/hr)
Before Calibration	0.49	-0.36	0.86
After Calibration	0.60	-0.03	0.66

OMPS Ozone

February, 2019

Accomplishments / Events:

- S-NPP V8TOZ CDR in validation – See Figure.
- Creating new V8Pro code delivery for NDE with significant updates – Outlier filtering, consistency with SBUV/2 for reflectivity and averaging kernels, dual adjustment tables for smooth soft calibration changes and area weighted matchup nadir mapper FOVs.
- V2Limb NDE at I&T in checkout phase.
- Testing of TOAST with V2Limb.
- Testing of BUFR for V2Limb

Overall Status:

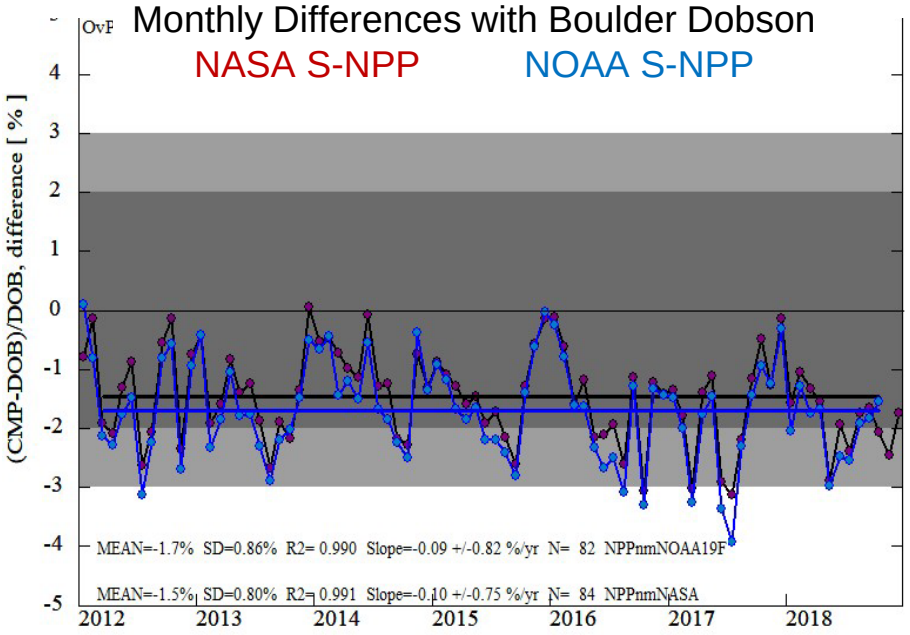
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule			X		# SDR Schedule

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Code Changes for OMPS V8Pro EDR on path to maturity will not be implemented at NDE until May 2019.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity: V8TOz			10/03/18	
Provisional Maturity: V8Pro	Feb-19	Jun-19		Requires code
Validated Maturity: V8TOz	Mar-19	Jun-19		SDR
Validated Maturity: V8Pro	Apr-19	Jul-19		SDR, code
N20 Final DAP: V8Pro	Apr-19	Apr-19		
Trending of ground-based comparisons	Mar-19	May-19		
Algorithm improvements (EOFs, solar, Wavelengths, bandpasses)	Sep-19	Aug-19		
RT Tables for NOAA-20	Sep-19	Aug-19		



GCOM-W1 Products

February, 2019

Accomplishments / Events:

- Continue to provide information to NESDIS IA regarding AMSR-3 channel selections (as requested by JAXA)
- Accompanied STAR director H. Cikanek to visit to NHC and AOML and presented AMSR-2 capabilities, including ocean winds and imagery to support operational hurricane forecasting
- Continued product cal/val; all products meeting requirements
- CICS-M developing monthly product monitoring cabability
- GAASP product upgrades/testing with OSPO continues
- Paper written for 2019 IGARSS JPSS session

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

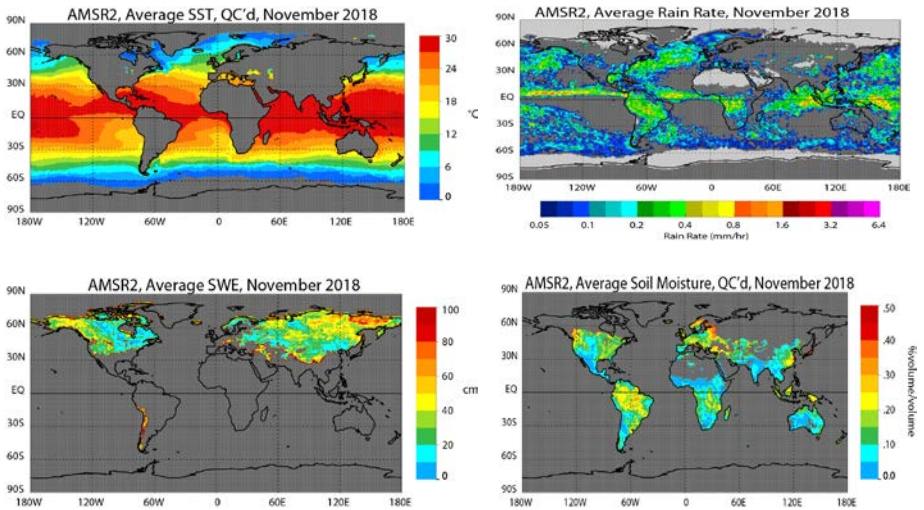
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Deliver updated TPW algorithm for integration into GAASP	Dec-18	Dec-18	Dec-18*	*Validation results did not warrant an update
Deliver updated CLW algorithm for integration into GAASP	Apr-19	Apr-19		
Deliver updated rain rate algorithm for integration into GAASP	Apr-19	Apr-19		
Updated GAASP package delivered to NDE/OSPO	Jul-19	Jul-19		
Reprocessing of AMSR-2 mission	Sep-19	Sep-19		

Highlights: Example GCOM Monthly Products – Nov 2018



NOAA Products Validation System (NPROVS) and EDR Long Term Monitoring (LTM)

February, 2019

Accomplishments / Events:

- Provided inputs on NUCAPS problem areas at newly established bi-weekly NUCAPS review meetings; super-saturation and bias rooted in first guess were noted.
- Final dataset of "reprocessed" NPROVS Special radiosondes established and collocation with satellites initiated **(Highlight)**
- Observations from the ongoing Radiosonde Inter-comparison and VALidation (RIVAL) campaign processed into NPROVS
- Provided STAR seminar "Enterprise EDR Validation at STAR"
- Actions taken to insure continuance of JPSS/ARM and AEROSE dedicated radiosonde programs
- The EDR-LTM team created new capability for Alaska Watch allowing transparency viewing and user display of geopolitical boundaries, latitude / longitude grids and city markers.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

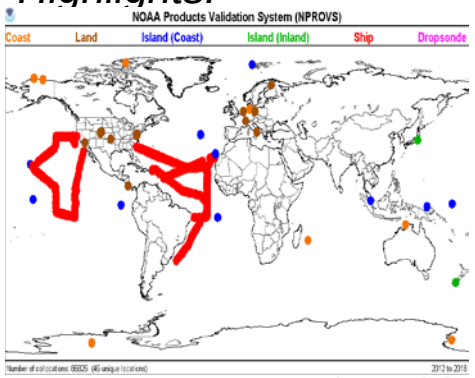
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

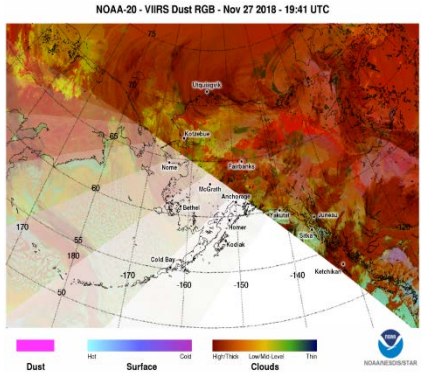
None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
LTM				
Complete NOAA-20 JMAPPER/EDR-LTM	Sep-19	Sep-19		
NPROVS				
Maintain NPROVS and support R2O transition of NOAA-20 and NUCAPS upgrades to correct identified problems for IR+MW and MW sounding	Jan-19	Jan-19		
Maintain JPSS dedicated radiosonde program including AEROSE and RIVAL observations stored in NPROVS Special	Mar-19	Mar-19		
Support NWS Raob Transition Monitoring and NUCAPS AWIPS-2 users	May-19	May-19		

Highlights:



NPROVS: Reprocessed "special" radiosondes provide expanded global coverage and better assures the radiosonde integrity; collocation with NUCAPS soundings facilitates "enterprise" validation in support of algorithm development



EDR-LTM: Figure 1: Image of VIIRS Dust RGB on Alaska Watch web page with new transparency features (newer orbits darker) and user defined geographical features