AMP/STAR FY19 TTA

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December 11, 2018

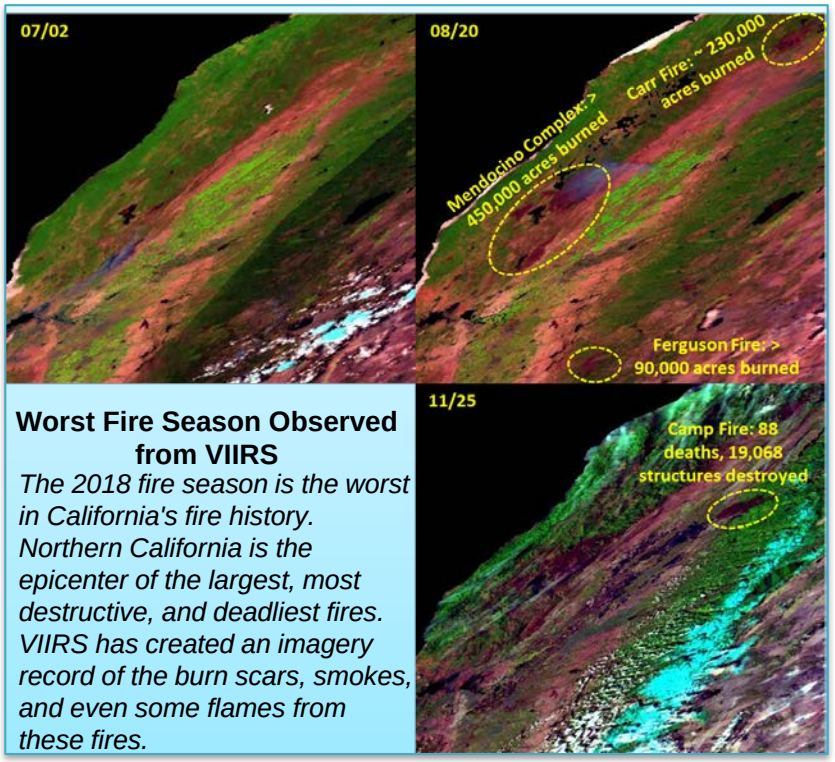
Highlights from the Science Teams

JPSS Views California wild fires and aftermath.

On the morning of November 8 a wildfire broke out in northern California. Within hours it had consumed the town of Paradise on the way to becoming the most destructive fire in the state's history.

Shortly after that another major fire erupted in the area west of Malibu in Southern California. JPSS was able to capture the fire and its aftermath using several sensors.

The images on the left show the Camp and Woosley fires as seen in the smoke/dust mask (top) and NUCAPS CO (bottom) from JSTAR Mapper.



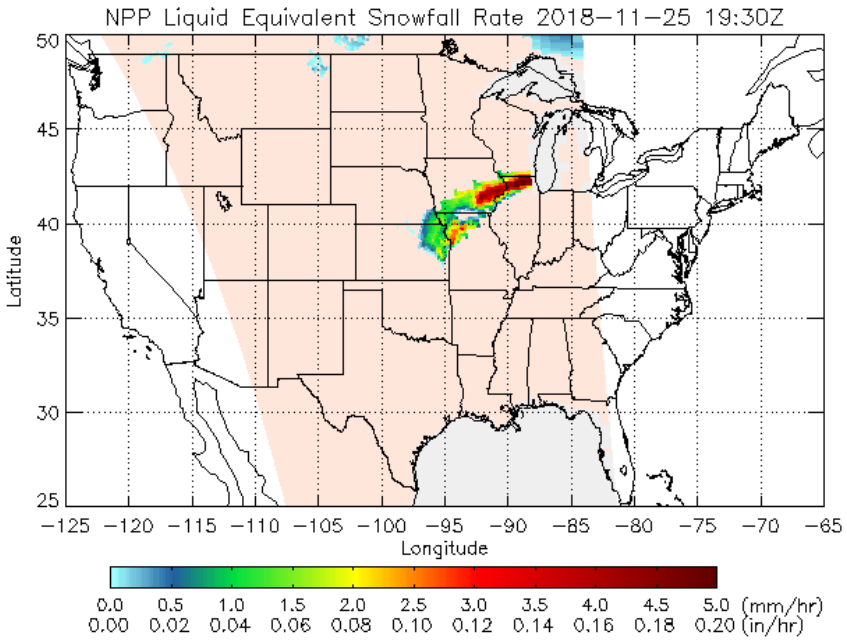
Worst Fire Season Observed from VIIRS

The 2018 fire season is the worst in California's fire history. Northern California is the epicenter of the largest, most destructive, and deadliest fires. VIIRS has created an imagery record of the burn scars, smokes, and even some flames from these fires.

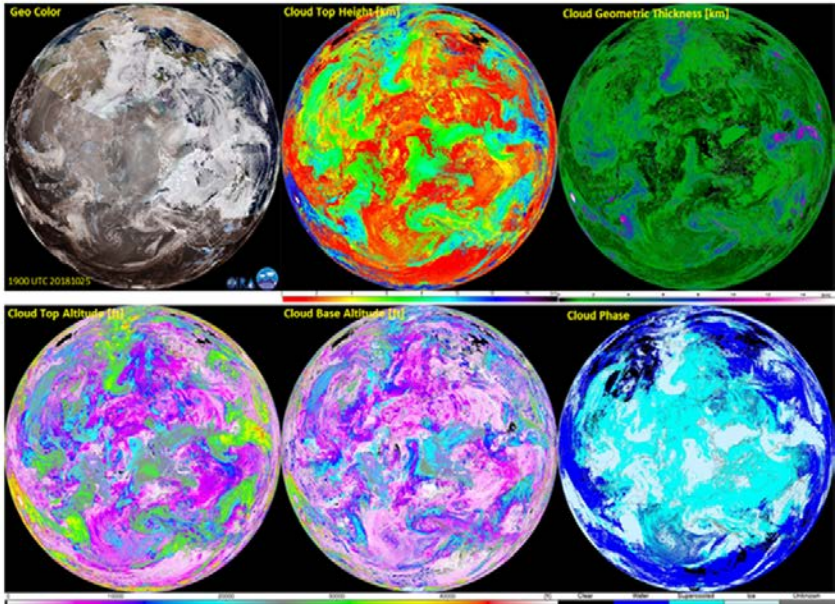
Highlights from the Science Teams

Snow Fall Rate Declared Operational

A briefing was given to the SPSRB on November 28, 2018 on the Suomi NPP Snow Fall Rate product. The board members agreed to declare the product operational once a minor user readiness issue is resolved.



A Suomi NPP overpass showing the first major snowstorm in the Midwest on November 25, 2018



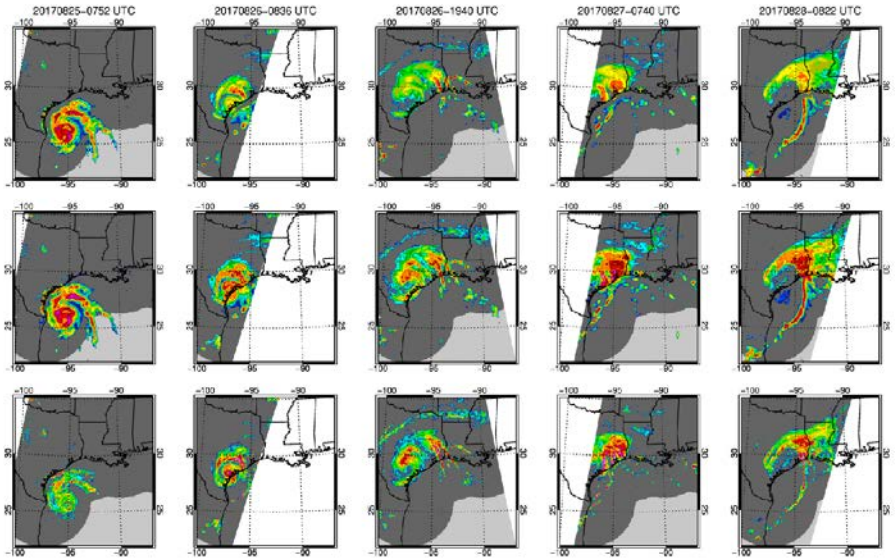
Sample of VIIRS Cloud products with GeoColor composite for the Northern Hemisphere sector on CIRA's Polar SLIDER.

Cloud and Geocolor Imagery on Polar SLIDR

The Imagery team at CIRA has recently converted their existing SLIDR web tool for viewing Geostationary imagery into a site for viewing Polar Imagery as well.

The site has been updated to show not just VIIRS SDR bands, but Cloud EDR products and GeoColor imagery

Highlights from the Science Teams



Presentation at the CGMS/IPWG-9 Workshop (Seoul, Korea, 5-9 November 2018)

Patrick Meyers and Ralph Ferraro of the GCOM team presented "Updating the NOAA AMSR-2 Operational Precipitation Algorithm" at the CGMS/IPWG-9 Workshop in Seoul, South Korea. The image above is a time series for Hurricane Harvey showing the current algorithm (top); improved algorithm to be implemented (middle) and surface truth data (bottom).

November NOAA-20 Product Maturity Review

At the latest monthly maturity review meeting, the Product Maturity Review Panel found that NOAA-20 VIIRS Volcanic Ash is at provisional maturity. Ocean Color is scientifically at provisional maturity pending resolution of action item on summary of performance against requirements. Full provisional maturity will occur after verification on the operational system. The Daytime Cloud Optical and Microphysical Properties (DCOMP) is at provisional maturity pending resolution of the action item to compare Suomi NPP to N20.

Paper Published on Single-Band Ice Surface Temperature Retrieval

A paper titled "Ice Surface Temperature Retrieval from a Single Satellite Imager Band", by Cryosphere team members, was published in the journal Remote Sensing. Current methods for estimating the surface temperature of sea and lake ice utilize two satellite imager thermal bands at moderate spatial resolution.

Highlights from the Science Teams

Global Cryosphere Watch Steering Group Meeting

The World Meteorological Organization (WMO) Global Cryosphere Watch (GCW) Steering Group held its sixth meeting in Davos, Switzerland, 26-29 November 2018. The meetings were hosted by the WSL Institute for Snow and Avalanche Research (SLF). Jeff Key participated as a member of the Steering Group. He discussed GCW products, information, services, and regional activities, including JPSS snow and ice products. The focus of this meeting was the development of the GCW Plan for the Preoperational Phase. GCW will become a WMO operational program in 2024.

Remote Sensing for Food Security

A book, entitled "Remote Sensing for Food Security" by Felix Kogan, has just been published by the Springer Co. Currently, the Earth faces huge challenges because the population is growing much faster than agriculture can produce food. The book addresses these and other problems and indicates how to use nearly four decades of operational polar-orbiting satellite data for some assessments of annual food security situation.

JPSS LSA and LST ORR conducted

The STAR JPSS Land Surface Temperature (LST) and Land Surface Albedo (LSA) team has finally conducted Operational Readiness Review (ORR) of the enterprise LST and LSA EDR production plan on NDE system on 16 November, 2018, with the collaborative assistances from STAR ASSISTT, and OSPO groups as well as the NCEP/EMC users.

The NDE LST and LSA production system has significant improvements in terms of noise reduction, release of surface type dependency, and consistency to MODIS LST and LSA products compared to the older product from IDPS. The enterprise algorithms applied for the NDE LST and LSA can be utilized for all the VIIRS data of the JPSS mission including Suomi NPP.

Accomplishments

•VIIRS SDR delivered VIIRS GEO Code Change DAP (ADR8788/CCR4185) to ASSISTT on 11/2/2018

•CrIS SDR DAP (Turn off Spike detection and Correction Algorithm, ADR8819/CCR4201) delivered to DPES on 11/19/2018

•OMPS SDR DAP (OMPS NM/NP Mismatch for FOVs, ADR8617/CCR4137) delivered to DPES on 11/1/2018; Re-delivered the package on 11/6/2018

•Re-delivery of OMPS NP SDR Quality Flag update DAP (ADR8685/CCR4015) to DPES on 11/15/2018

•OMPS SDR DAP (OMPS NP Transient Smear Correction, ADR8709/CCR4138) delivered to DPES on 11/26/2018

•NOAA-20 SST (ACSPO v2.60) operational 11/7/2018

•SNPP LST/LSA Operational Readiness Review (ORR) on 11/16/2018

•VIIRS Surface Reflectance Patch (fixed the Aerosol look-up tables wrong index issue) delivered to NDE on 11/21/2018

•NOAA-20 NVPS (Vegetation Index & Green Vegetation Fraction) DAP delivered to NDE on 11/30/2018

•The new VIIRS Annual Surface Type 2017 (AST2017) is ready for users at the FTP site:

- Sinusoidal projection:

ftp://ftp.star.nesdis.noaa.gov/pub/smcd/JPSS/VIIRS-AST/S-NPP_VIIRS_GST_IGBP_2017.zip

- Lat/long projection:

ftp://ftp.star.nesdis.noaa.gov/pub/smcd/JPSS/VIIRS-AST/S-NPP_VIIRS_GST_IGBP_2017_30arcsec.zip

•Algorithm checking/testing for upcoming GFS FV3 Model Upgrade

- JSTAR submitted updated GFS testing summary report to AMP (TCI test status update)

•JSTAR submitted Block 2.1 Mx4 I&T deploy regression review/checkout report to AMP on 11/13/2018. Final report with CrIS lunar intrusion algorithm verification results to AMP on 11/28/2018

Accomplishments – JPSS Cal Val Supports

•NOAA-20/S-NPP Operational Calibration Support:

- S-NPP Weekly OMPS TC/NP Dark Table Updates: 11/06/18, 11/14/18, 11/20/18, 11/27/18
- NOAA-20 Weekly OMPS TC/NP Dark Table Updates: 11/06/18, 11/14/18, 11/20/18, 11/27/18
- S-NPP Bi-Weekly OMPS NP Wavelength & Solar Flux Update: 11/06/18, 11/20/18
- NOAA-20 Monthly VIIRS StrayLight LUTs Update: 11/14/18
- S-NPP Monthly VIIRS LUT Update of DNB Offsets and Gains: 11/14/18
- NOAA-20 Monthly VIIRS LUT Update of DNB Offsets and Gains: 11/14/18

•November Monthly NOAA-20 Calibration/Validation Maturity Readiness Review (11/27/2018):

- Provisional Maturity:
  –Ocean Color
  –Volcanic Ash
  –Daytime Cloud Optical and Microphysical Properties (DCOMP)

Accomplishments - Transition to Operations and AMP

- JPSS Transition to Operations Project Milestones
  - S-NPP MiRS Snowfall Rate ORR (11/2)
  - VIIRS Land Surface Temperature/Land Surface Albedo ORR (11/16)
  - SPSRB declared S-NPP Snowfall Rate and Vegetation Health (1km) ready for operations (11/28)
- Requirements/Engineering:
  - Software Requirements Specification (SRS) Review: Completed the review report of all the changes needed in the Software Requirements Specifications (SRSs) to support of IDPS. The report was sent to relevant parties to expedite the process of baselining JPSS-2 Mission Data Format Control Book (MDFCB) and Application Process Identifier (APID) to Virtual Channel Identifier (VCID) documents which are essential for updating the SRSs.
- JPSS-2/3/4:
  - AMP (B Guenther) developed White Paper and delivered to STAR Oceans contact (Junqiang Sun) describing a study they may performed to obtain higher spatial resolution VIIRS Ocean Color products using unaggregated VIIRS Dual Gain bands.
  - AMP (B Guenther) developed White Paper describing why OMPS operations appears a bit out of step with what we'd normally expect how an operational sensor would operate. This was based on identification of key sensor design characteristics and how that characteristics drive on-orbit operations requirements for tracking performance.
- Other
  - International Cloud Working Group Meeting: The International Cloud Working Group (ICWG), co-chaired by Andy Heidinger, met Oct 29 - Nov 1, 2018 in Madison, Wisconsin on the campus of the University of Wisconsin. AMP members, B Reed and J Weinrich, gave oral presentations at the ICWG on the topics of the JPSS Enterprise Algorithms Migration to CSPP and JPSS Aviation Initiative, respectively.
  - NWS/NESDIS Integrated Work team status: Last meeting was November 30, 2018. The topics included status of N20 data products, NWS / AWIPS integration of NOAA-20 products, and NDE Thinned JPSS products.

Upcoming Cal/Val Maturity Reviews

–January, 2019:

- Beta/Provisional Maturity:
  - Nighttime Cloud Optical and Microphysical Properties (NCOMP)
- Provisional Maturity:
  - Land Surface Temperature
  - Surface Albedo
  - Surface Reflectance
  - OMPS Ozone (V8Pro)

–February, 2019

- Provisional Maturity: Green Vegetation Fraction, Vegetation Index, Vegetation Health

–March, 2019

- Provisional Maturity: Snow Fall Rate
- Validated Maturity:
  - OMPS (TC & NP) SDR
  - OMPS Ozone (V8TOz)
  - Cloud Products (ECM, Cloud Phase/Type, ACHA, CBH, DCOMP, NCOMP)
  - Aerosol Products (Aerosol Optical Depth, Aerosol Detection)
  - Volcanic Ash
  - VIIRS Polar Winds

–April, 2019

- Provisional Maturity: Cryosphere Snow & Ice Products, NUCAPS (CO_2, CH_4)
- Validated Maturity: Sea Surface Temperature, OMPS Ozone (V8Pro)

Upcoming Milestones/Deliveries

•JSTAR Code/LUT Deliveries:

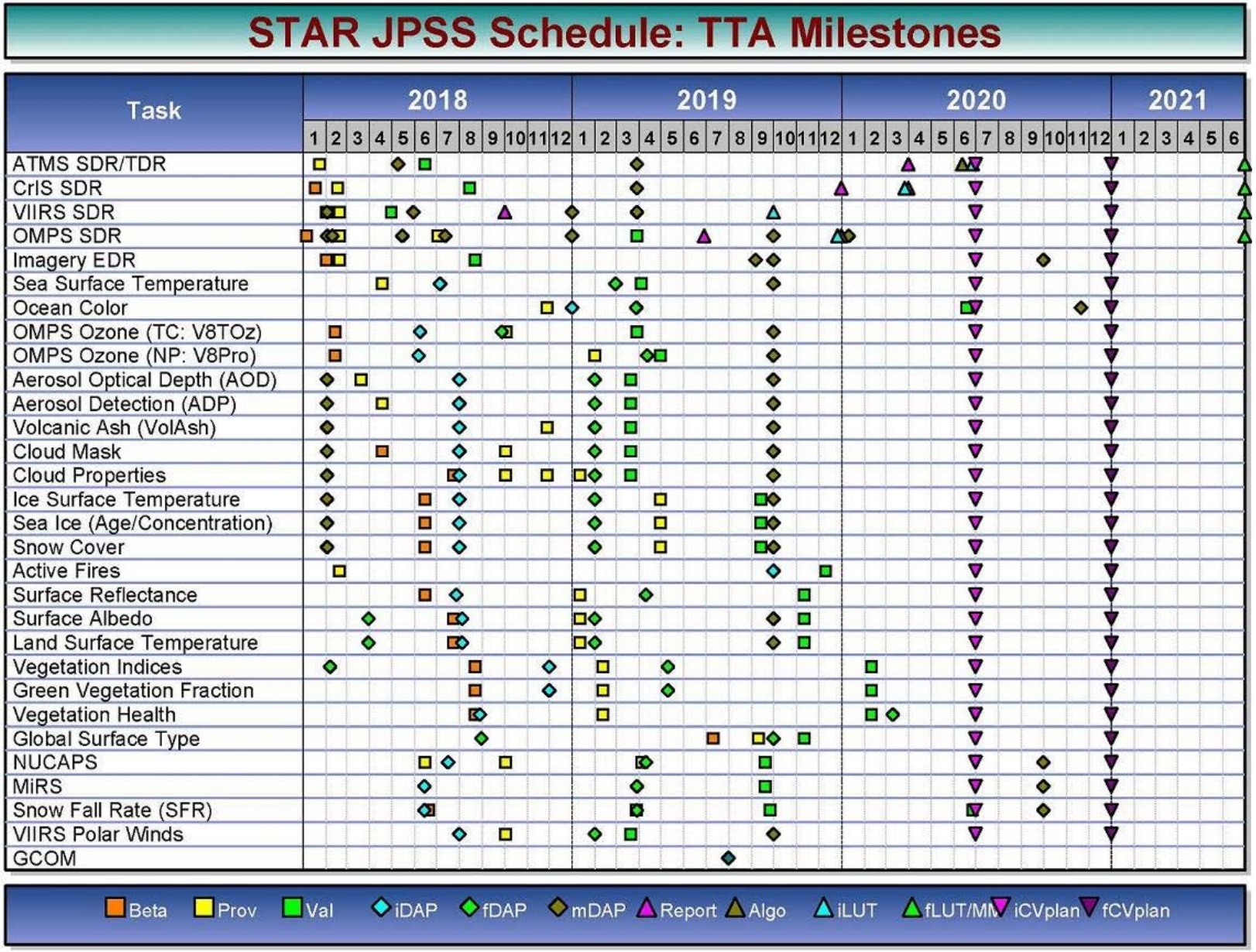
–DAP to DPES:

- Dec-18: Update NOAA-20 OMPS Calibration Tables (ADR8816)
- Dec-18: VIIRS GEO Code Change (ADR8788, 11/2/18 to ASSISTT)
- Mar-18: VIIRS Remove COEFF-A and COEFF-B LUTs (ADR8785)
- Mar-19: CrIS Polarization correction (ADR8760)
- Mar-19: ATMS reflector emissivity correction (ADR8632)

–NOAA-20 Algorithm DAP to NDE:

- Dec-18: Ocean Color – Initial DAP to CoastWatch
- Jan-19: EPS algorithms (Clouds, Cryosphere, Aerosol, Volcanic Ash, LST/LSA), VIIRS Polar Winds – Final DAP
- Mar-19: MiRS/SFR – final DAP
- Mar-19: Ocean Color – Final DAP to CoastWatch
- Apr-19: Surface Reflectance, NUCAPS, V8Pro – Final DAP
- May-19: NVPS (VI & GVF) – Final DAP

JPSS Schedule



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		
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		
OMPS SDR: J2 Pre-launch sensor characterization report	Jun-19	Jun-19		
NOAA-20 EDR Final DAPs (JRR, SST)	Jun-19	Jun-19		
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	Dec-18		
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 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**	
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**	
S-NPP: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	**10/16/18, 11/14/18**	
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**	
NOAA-20: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	**10/16/18, 11/14/18**	
NOAA-20: Monthly VIIRS Stray Light LUT Update	Monthly	Monthly	**10/16/18, 11/14/18**	

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	Dec-18		
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	Dec-18		
S-NPP: Vegetation Health (VH-4km)				
-- Final DAP	Nov-17	--	11/13/17	Completed
-- ORR	Nov-17	--	10/05/18	Completed
-- Operations	Dec-17	Dec-18		

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	Dec-19		
S-NPP: OMPS Limb Profiler Products				
-- Initial DAP	TBC	TBC		
-- Final DAP	TBC	TBC		
-- EDR and SDR ORR	Dec-16	Jan-19		
-- Operations	Mar-17	Mar-19		Issue with Temperature/Height Ancillary data file.

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	Dec-18		
-- Operations	Aug-18	Jan-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	Dec-18		
-- Operations	Aug-18	Jan-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	Jan-19		
-- Operations	Aug-18	Feb-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	Dec-18		
-- ORR	Feb-19	Feb-19		
-- 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	Dec-18		Software is under review at OSPO
-- ARR	Sep-18	Apr-19		
-- Final DAP	Apr-19	Apr-19		
-- ORR	Jun-19	Jun-19		
-- Operations	Jul-19	Jul-19		
NOAA-20: Surface Reflectance				
-- CDR	Oct-16	--	10/27/16	Completed
-- Initial DAP	Aug-18	--	07/27/18	Completed
-- SCR	Oct-18	Dec-18		Current NPP algorithm also runs for J1. No software updates needed so far (or even expected) for J1. Completed?
-- ARR	Nov-18	Jan-19		
-- ORR	Feb-19	Feb-19		
-- Final DAP	Apr-19	Apr-19		
-- Operations	Jun-18	Mar-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	Dec-18		
-- Operations	Fev-19	Feb-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
-- ARR	Aug-18	--	11/28	Completed
-- Final DAP	Jan-19	Jan-19		
-- ORR	Aug-18	Feb-19		
-- Operations	Oct-18	Apr-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	Jan-19		
-- SCR	Sep-18	Mar-19		
-- ARR	Dec-18	Jun-19		
-- Final DAP	Jan-19	Jan-19		
-- ORR	Mar-19	Jul-19		
-- Operations	Jun-19	Sep-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	Feb-19		
-- Final DAP	Mar-20	Mar-20		
-- ORR	Apr-19	May-19		
-- Operations	May-19	Jun-19		
NOAA-20: Green Vegetation Fraction				
-- Initial DAP	Nov-18	Nov-18		
-- Final DAP	May-19	May-19		
-- CDR	Oct-16	-	10/27/16	Completed
-- SCR	Oct-18	--		Completed
-- ARR	Feb-19	Jan-19		
-- ORR	Apr-19	Mar-19		
-- Operations	Jun-19	Apr-19		
NOAA-20: Ocean Color				
-- Initial DAP	Nov-18	Nov-18		
-- Final DAP	Mar-19	Mar-19		
-- Updated DAP	Nov-20	Nov-20		
-- 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	Nov-18		
-- Final DAP	May-19	May-19		
-- CDR	Oct-16	-	10/27/2016	Completed
-- SCR	Dec-18	--		Completed
-- ARR	Feb-19	Jan-19		
-- ORR	May-19	Mar-19		
-- Operations	Jun-19	Arp-19		
NOAA-20: ATMS Snowfall Rate				
-- Initial DAP	Jun-18	--	06/14/18	Completed
-- Final DAP	Dec-18	Dec-18		
-- CDR	Dec-18	Feb-19		Request to delay the CDR and ARR to Feb 2019 so more snowfall data can be collected for algorithm development and cal/val.
-- SCR	May-19	Feb-19		
-- ARR	Jun-19	Feb-19		
-- ORR	Aug-19	Apr-19		
-- Operations	Oct-19	May-19		
NOAA-20: Microwave Tropical Cyclone Products				
-- Initial DAP	TBC	TBC		
-- Final DAP	TBC	TBC		
-- 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		
-- Final DAP	TBC	TBC		
-- SCR	Aug-17	--		
-- ORR	Jul-18	Dec-18		
-- Operations	Oct-18	Jan-19		
NOAA-20: Blended Products Blended SST				
-- Initial DAP	TBC	TBC		
-- Final DAP	TBC	TBC		
-- SCR	Aug-18	Oct-18		No update provided
-- ORR	May-19	Nov-18		
-- Operations	Jun-19	Dec-18		
NOAA-20: Blended Products Blended Biomass Burning				
-- Initial DAP	TBC	TBC		
-- Final DAP	TBC	TBC		
-- SCR	Oct-18	Nov-18		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		
-- Final DAP	TBC	TBC		
-- SCR	Aug-18	Feb-19		
-- 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	TBC		
-- Final DAP	TBC	TBC		
-- SCR	Jun-18	--	9/20/2018	Completed
-- ARR/ORR	Dec-18	Feb-18		
-- Operations	Jan-19	Mar-19		
Enhanced TOAST with S-NPP OMPS Limb Profiles				
-- Initial DAP	TBC	TBC		
-- Final DAP	TBC	TBC		
-- CDR	Jan-17	Feb-19		
-- SCR	Apr-17	Feb-19		
-- ORR	May-17	Mar-19		
-- Operations	Jun-17	Apr-19		
Upgrade to the Multi-platform Satellite Tropical Cyclone Surface Wind Analysis Product				
-- Initial DAP	TBC	TBC		
-- Final DAP	TBC	TBC		
-- 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		

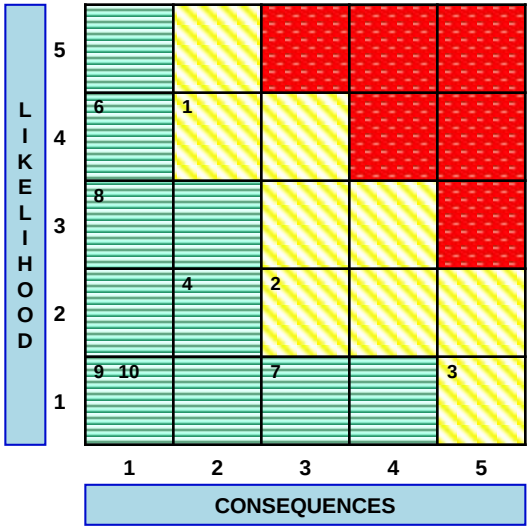
FY19 STAR DAP and JPSS PSDI Milestones

NOAA-20 Blended/Derived/Other Algorithms	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Upgrades to the ADT Product				
-- Initial DAP	TBC	TBC		
-- Final DAP	TBC	TBC		
-- PDR	Jul-17	--	8/23/2017	Completed
-- CDR	Jul-17	--	8/23/2017	Completed
-- SCR	Jun-18	Jan-19		STAR needs more time working the code
-- ARR	Oct-18	Feb-19		
-- ORR	Apr-19	May-19		
-- Operations	Jun-19	Jun-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		
-- Final DAP	TBC	TBC		
-- SRR/ORR	Jun-18	May-19		
-- Operations	Jul-18	Jun-19		
Product Monitoring VI (NDE J1)				
-- Initial DAP	TBC	TBC		
-- Final DAP	TBC	TBC		
-- 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	Jan-19		

December 2018 AMP/STAR RMB Risk Summary

Status as of: 12/06/2018

Rank Risk ID	Summary	LxC Trend	Aprch
1 AMP-15-006	Continued Generation of IDPS EDRs	4x2 ⇔	M
2 AMP-18-004	NWS GFS FV3 Model Upgrade Impacts	2x3 ⇔	M
3 AMP-18-005	Potential damage to VIIRS scan drive mechanism due to non-nominal Sync Loss recovery	1x5 ⇔	R
4 AMP-18-003	J2 APID Changes to Accommodate New S/C Bus	2x2 ⇔	W
5 AMP-18-002	OMPS Pre-Launch Calibration for J-02		
6 AMP-17-004	Operational Data Flow to AWIPS-II	4x1 ⇔	M
7 AMP-16-005	Block 2.0 Algorithm Change Process & delivery of changes.	1x3 ⇩	W
8 AMP-18-008	Data Product Requirements for OMPS-Limb	3x1 ⇔	M
9 AMP-18-006	Impact on Testing Ability Due to Major Build Upgrades	1x1 ⇔	W
10 AMP-18-007	Loss of Raytheon CommonCM server impacts Algorithm Development, Tracking, and ADL Delivery	1x1 ⇩	W



Criticality

HIGH

MED

LOW

Approach

A – Accept

M – Mitigate

W – Watch

R – Research

LxC Trend

⇩ – Decreasing (Improving)

⇧ – Increasing (Worsening)

⇔ – Unchanged

NEW – Added this month

December 2018 AMP/STAR RMB

Status as of: 12/06/2018

Rank	Risk ID	Risk Statement	Approach	Status
1 ⇔ Continued Generation of IDPS EDRs **Expected Closure:** 03/2019	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**	12/5/18: OSPO working with users to transition to enterprise versions. Some users have already indicated they need until Jan to transition. Working with IDPS, SEIT to ensure the CGS requirements are updated for MUPs only, and appropriate contract tasks are in place for 2019. 11/1/18: The expected closure date has been updated from September 2018 to the end of March 2019. The level of risk will remain the same as long as all product users can be transitioned in a timely manner. If an issue arises, for example with the NIC transition timeline, then the LXC of this risk will be increased.

December 2018 AMP/STAR RMB

Status as of: 12/06/2018

Rank	Risk ID	Risk Statement	Approach	Status
2 ⇔ 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.	**Mitigate**	12/6/18: Path forward - check product quality of IDPS EDRs still being used (ie. AOT being used through January 2019 by EUMETSAT). Ignore all products that don't have any users. OSPO is currently checking products on NDE I&T and the majority have been verified without issue, some still remain. 11/14/18: Raytheon ran a VIIRS chain test with the updated GFS inputs using 10 J1 granules. All granulated ANC products and EDRs completed without error. Raytheon also compared NCEP-ANC-Int between baseline and updated GFS inputs using an hour of data. Differences were seen in all fields except for the top 5 layers of the water vapor mixing ratio. Mean differences range from 2.42e-5 for water vapor mixing ratio to 24.5 gpm for tropopause geopotential height. Maximum differences range from 4.13e-3 for water vapor mixing ratio to 6337 gpm for tropopause geopotential height. Actual model quality was not determined from this test so it is unclear if the differences are an expected improvement in the new model or not. Next step is to determine if this is a quality improvement or a discrepancy that needs to be fixed (and if so, is it a necessary fix?)

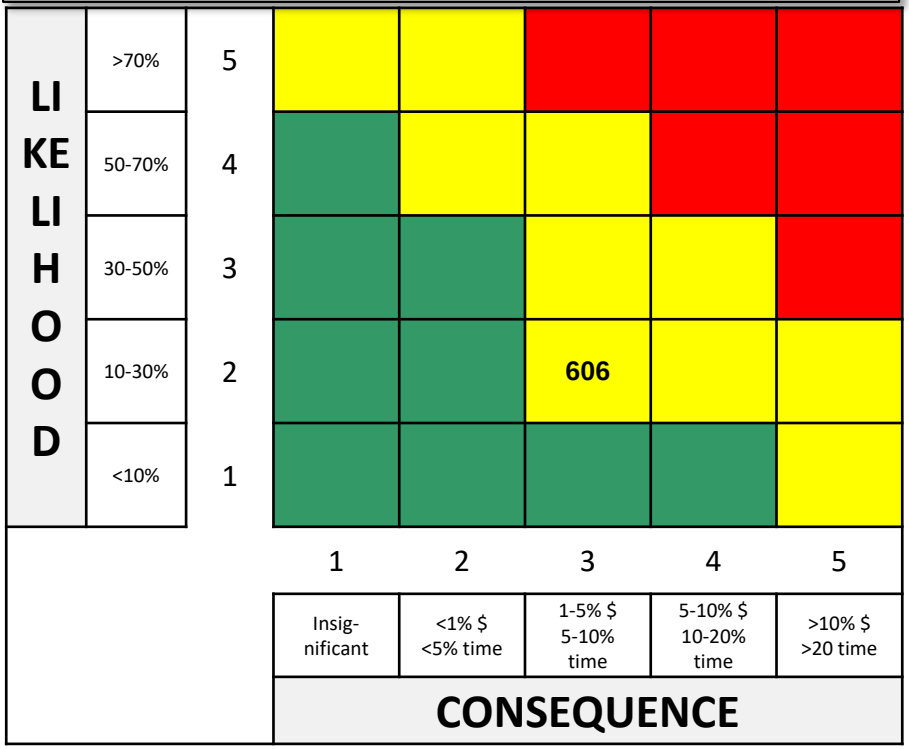
December 2018 AMP/STAR RMB

Status as of: 12/06/2018

Rank	Risk ID	Risk Statement	Approach	Status
3 ⇔ Potential damage to VIIRS scan drive mechanism due to non-nominal Sync Loss recovery	AMP-18-005	**Given that:** VIIRS J1 Sync Loss rate is 2.5X higher than NPP Sync Loss rate, and that recovery for Sync Loss involves non-nominal scan drive actions beyond any lifetime verification testing or analysis for these non-nominal actions **There is a possibility that:** VIIRS J1 scan drives will fail with 5 years on-orbit lifetime **Resulting in:** Loss of all VIIRS KPP products.	**Research**	12/6/18: No update. 10/31/18: Nothing new of significance to report. AMP Data Product Lead will contact Review Team POC within the next two weeks for an update.

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: Dec 10, 2018

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	Jan 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.

JPSS PSDI Issues

As of: Nov 13, 2018

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

BACKUP

December 2018 AMP/STAR RMB

Status as of: 12/06/2018

Rank	Risk ID	Risk Statement	Approach	Status
4 ⇔ 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**	12/5/18: The J2 DFWG is aware of our G/R need, but believe they will not have an official version of the S/C APID to VCID map by that time since the FSW is still under development. They have agreed to deliver an unofficial version to Ground to help meet our needs. The Instrument APID to VCID assignments are defined in the DFRD to remain consistent with S-NPP and NOAA-20. 10/31/18: The J2 Data Format Working Group (DFWG) is still awaiting delivery of the newest version of the J2 APID/VCID Map from the S/C vendor. AMP Data Product Lead and Requirements Lead plan to inform the MOST/S/C Vendor of the Ground Project need date of January 2019, which is tied to a DRW19 G/R.

December 2018 AMP/STAR RMB

Status as of: 12/06/2018

Rank	Risk ID	Risk Statement	Approach	Status
5 ⇔ OMPS Pre-Launch Calibration for J-02	AMP-18-002	**Given that:** J-01 OMPS NP pre-launch on-satellite testing showed that the diffuser/sensor combination had degraded since calibration **There is a possibility that:** similar calibration issues may occur on J-02 **Resulting in:** inaccurate J-02 OMPS pre-launch calibration and the potential for poor data quality.	**Watch**	11/14/18: J2 OMPS PER was 11/6-11/7/18. The OMPS Optical Trending Test (OOTT) is completed several times throughout testing of the OMPS suite. The OOTT does not verify performance requirements, but instead trends spatial, spectral, and radiometric response with working and reference diffusers. OOTT+ was added to the testing to provide diffuser monitoring during ISS testing. The addition of this testing addresses this risk so therefore this risk can be closed. 11/1/18: J2 OMPS PER is slated for next week. In a favorable position to see the requested changes made on the PER schedule. 10/11/18: The NASA OMPS Science Team updated the OOTT (OMPS Optical Trending Test) so that they can distinguish between sensor changes and diffuser changes. Those changes are still being worked (requires fixture modification). They anticipate the first of these measurements to occur in December 2018.

December 2018 AMP/STAR RMB

Status as of: 12/06/2018

Rank	Risk ID	Risk Statement	Approach	Status
6 ⇔ 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**	12/6/18: AWIPS-DD access to PDA was recently demonstrated for GOES-R L2 data products, confirming that PDA's "ad hoc" request protocol (to be used for JPSS data access from AWIPS) does work. AWIPS access to JPSS products will require further work on the AWIPS-DD user interface; and use of these data in AWIPS will require configuring the AWIPS EDEX ingest process for each product. NWS TOWR-S team is meeting with forecasters to determine JPSS product priorities.

December 2018 AMP/STAR RMB

Status as of: 12/06/2018

Rank	Risk ID	Risk Statement	Approach	Status
7 ⇩ 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**	12/04/18: At the direction of the XIPT, Ground Systems SEIT has stood up an Assessment team to characterize the CommonCM and CFCR sytems, Identify issues, and Establish a plan/schedule to resolve issues to meet weekly and report to the XIPT twice per month. The team includes representation from all stakeholders [C3S, SEIT, IDPS, DPES, AMP/STAR, Mission Assurance, Security, Security Infrastructure, and Raytheon]. Additionally, a small group composed of POCs from AMP, SEIT, DPES, STAR ASSISTT, IDPS, and the AMP Lead met to focus on the CFCR ConOps to resolve the specific risks identified in AMP-16-005. Recommendation - Now that the Ground System is working this risk, we can either close it or move to "watch" status.

December 2018 AMP/STAR RMB

Status as of: 12/06/2018

Rank	Risk ID	Risk Statement	Approach	Status
8 ⇔ 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**	12/6/18: No update. 10/31/18: OMPS-L failed testing in NDE I&T. ESPDS will work with STAR to resolve.

December 2018 AMP/STAR RMB

Status as of: 12/06/2018

Rank	Risk ID	Risk Statement	Approach	Status
9 ⇔ 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**	12/5/18: No update.

December 2018 AMP/STAR RMB

Status as of: 12/06/2018

Rank	Risk ID	Risk Statement	Approach	Status
10 ⇩ 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**	12/04/18: - After transition, FTS and GRAVITE could no longer access ADL downloads. - - This use case was not captured by the transition team until after Raytheon's support of their server and network connection was terminated. - - SEIT and DPES are working on a solution. - At the direction of the XIPT, Ground Systems SEIT has stood up an Assessment team to characterize the CommonCM and CFCR systems, Identify issues, and Establish a plan/schedule to resolve issues. They meet weekly and report to the XIPT twice per month. The team includes representation from all stakeholders [C3S, SEIT, IDPS, DPES, AMP/STAR, Mission Assurance, Security, Security Infrastructure, and Raytheon]. - Transition Team - - Has been dissolved - - Tag-ups were discontinued in early November. - JPSS IT continuing work on providing non-NASA users with VPN access (RSA Tokens or ASB cards) - Raytheon - - adding email subscription capability to ClearQuest - - making all Welcome page downloads available - - syncing their local servers with CommonCM servers on once per business day at 14:30 eastern time - SEIT - - working with Raytheon to update support information and links on the welcome page - - working to identify correct use cases for future (maintenance and improvement) work Recommendation - Now that the Ground System is working this risk, we can either close it or keep in "watch" status.

JPSS PSDI Risks

As of: Nov 13, 2018

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

Color code:

Green: **Completed Milestones**

Gray: **Non-FY19 Milestones**

ATMS SDR

November, 2018

Accomplishments / Events:

- Finalized the ATMS reflector emission correction code update and associated PCT update
- Generated three months (Aug. 1 to Oct. 30, 2018) of NOAA-20 and S-NPP ATMS TDR/SDR/GEO data using updated ADL package and sent sample data to NWP and EDR users for further assessment
- Implementing ATMS geolocation accuracy monitoring package and developed implementation document
- Discussed active geolocation accuracy theory and NOAA-20 active geolocation accuracy analysis results
- Started advanced analysis on ATMS striping noise mitigation

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			

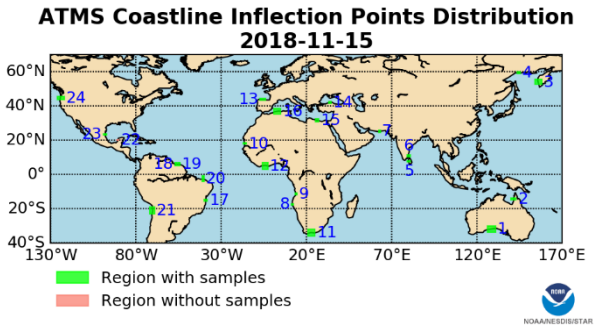
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

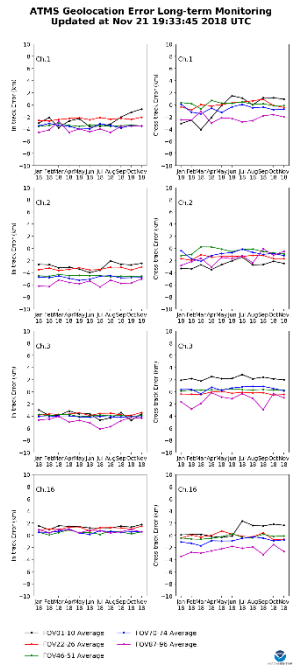
Issues/Risks:

Some recommendations on reflector emission correction update are given by NWP users and NASA flight project. A three-month extension is asked for more testing

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		
DAP to DPES	Mar-19	Mar-19		
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19		
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:





ATMS Geolocation Accuracy Monitoring Package Products
(top) Picked Coastline Inflection Points
(right) Long-term Trending of Geolocation Accuracy at different band and different FOVs

CrIS SDR

November, 2018

Accomplishments / Events:

- The spike detection and correction algorithm is expected to be turned off in late 12/2018.
- Evaluation of the new lunar intrusion (LI) algorithm implemented on MX4 I&T was performed using two days with LI (Nov 17 and 18, 2018) and days with no LI for S-NPP and NOAA-20 CrIS. Following results were derived: a) The algorithm has better skills to detect and remove DS spectra contaminated with LI at the expense of more false alarms, with < 1.0% for NOAA-20 and ~0.2% for S-NPP at SWIR, b) Low impact was found on the ES radiances over the false alarm cases, since BT differences below or near noise level were observed, c) No major impact on downstream products, including NWP and NUCAPS derived products, is expected, d) false alarms are related to tighter thresholds indicating need of further optimization by considering the FOV, scan direction and sensor dependence
- Initial plan for the evaluation of the polarization correction has been generated and is being discussed. The plan calls for impact analysis on NWP and NUCAPS products before its operational implementation.

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.*

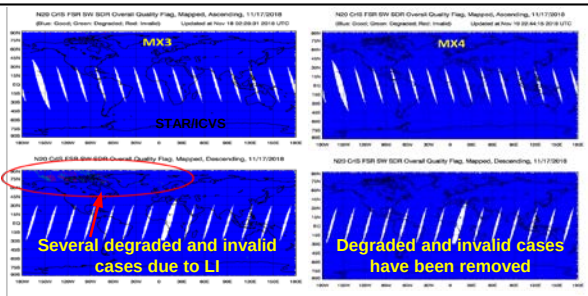
Issues/Risks:

- JSTAR CrIS Team is in need of computer resources to perform its activities.
- JSTAR CrIS personnel has decreased from 3.25 to 2 FTE. Two FTE positions have been advertised, one at GST and other at ESSIC.

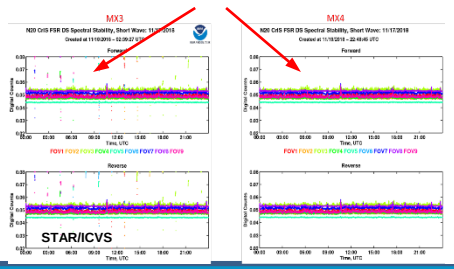
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual CrIS SDR performance report	Aug-19	Aug-19		
J2 pre-launch test data (TVAC) review/analyze	Sep-19	Sep-19		
Polarization correction algorithm implementation DAP (ADR8760)				
Technical Interchange Meeting (TIM)	Feb-19	Feb-19		
DAP to ASSISTT	Feb-19	Feb-19		
DAP to DPES	Mar-19	Mar-19		
Turn off Spike detection and Correction Algorithm due to false alarms (ADR8819/CCR4201)			11/19/18	
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		
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:

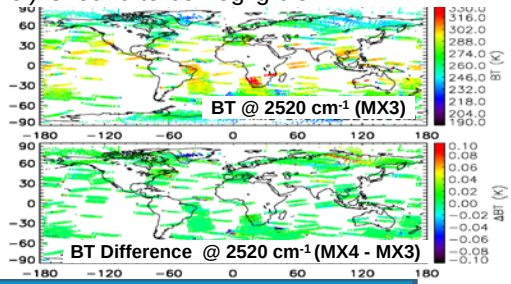
(a) The new LI algorithm (right) implemented on the Block 2.1 MX4 builder has shown better skills to detect and remove DS spectra contaminated with LI in comparison to the old LI algorithm (left).



(b) The new LI algorithm shows higher DS spectral stability (right plot) in comparison to old LI algorithm (left) over all FOVs.



(c) The new LI module is creating 0.7% of false alarms. The BT difference observed over the false alarm cases (shown in the bottom panel) is found to be negligible.



VIIRS SDR

November, 2018

Accomplishments / Events:

- Generated and updated offset and gain ratio LUTs for NOAA-20 and S-NPP DNB using new moon calibration data from Nov. 7, 2018
- Generated NOAA-20 DNB stray light correction LUT from Nov. 2018 data
- The lunar F-factors were calculated using data collected on 11/19/2018 through roll maneuver and indicate stable values in VISNIR bands during the moon free months (July to October).
- Successfully tested a code change that corrects an occasional problem of false "missing" scans in short granules of the NOAA-20 VIIRS SDR
- Reanalyzed the latest solar calibration measurements from VIIRS instruments and the calculated calibration coefficients.
- Created initial simulated RDR files that include actual JPSS-2 VIIRS data acquired during instrument prelaunch tests using an operational mode
- Coordinated the predictions of the NOAA-20 VIIRS lunar calibration in Dec. 2018 and provided the schedule for the roll maneuver and VIIRS sector rotation to MOT

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			

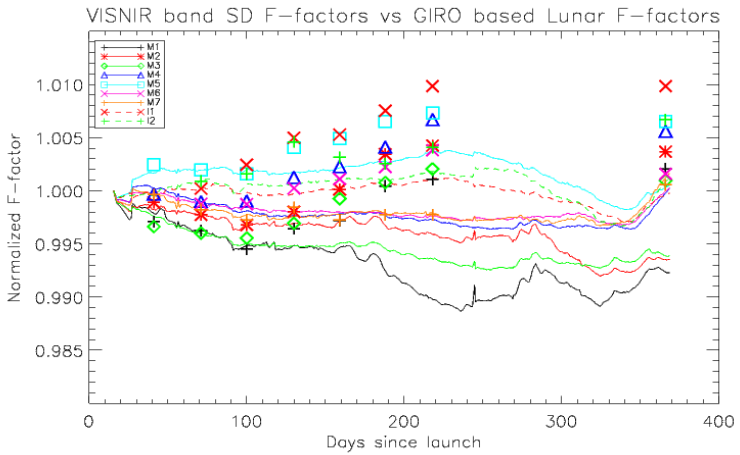
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

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		11/2/18 to ASSISTT
Remove COEFF-A and COEFF-B LUTs (ADR8785/CCR4148)	Mar-19	Mar-19		
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19		
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:



Lunar F-factors compared to onboard solar diffuser based F-factors.

OMPS SDR

November, 2018

Accomplishments / Events:

- Regular weekly dark deliveries for OMPS sensors were made.
- Regular bi-weekly OMPS-NP wavelength table deliveries were made for S-NPP.
- The J2 OMPS PER review was held Nov. 6,7 in Boulder, CO at the BATC facility.
- Code change delivery was made to DPES for DR8685, the OMPS-NP quality flag change.
- Code change delivery was made to DPES for DR8709, the smear correction algorithm which affects both S-NPP/OMPS-NP and NOAA-20/OMPS-NP.

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		

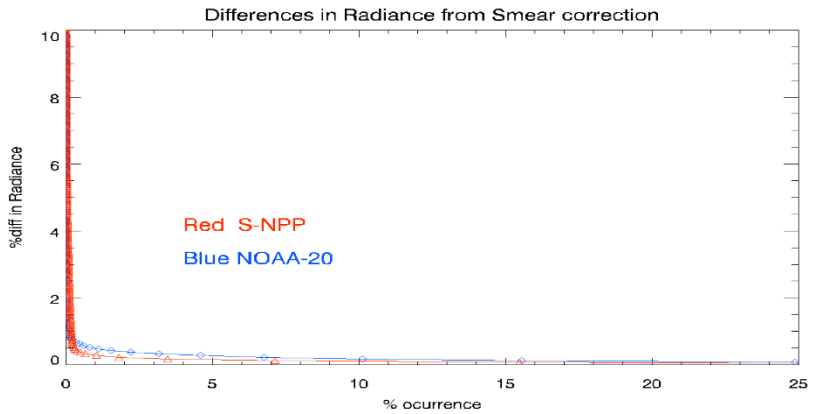
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

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	Mar-19	Mar-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	Jun-19		
OMPS NM/NP Mismatch for FOVs (ADR8617/CCR4137)			11/01/18	
Update NOAA-20 OMPS Calibration Tables (ADR8816)	Dec-18	Dec-18		
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		
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:



The image shows the change in radiance versus the percent occurrence resulting from the smear code change for OMPS-NP for DR8709, delivered in 11/2018.

SDR Reprocessing

November, 2018

Accomplishments / Events:

- Finished reprocessing S-NPP OMPS TC SDR using updated straylight LUT from Jan, 2012 to Oct, 2018 and sent to OMSP SDR team for further evaluation
- Updated reprocessing SDR aggregation package and delivered to CLASS for its initial check
- Had a telecon discussion with CLASS and NCEI staff to discuss plans for STAR-CLASS Interface on Nov. 27
- Responded to users' request on data accessing and reading (e.g., KMA, EUMETSAT)
- STAR VIIRS SDR team is running V2 reprocessing for 01/2012-03/2017 and the team highly recommends V2 reprocessed SDRs (improvements are listed in Highlights)

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Upgrade the reprocessing dissemination interface	Mar-19	Mar-19		
Finish VIIRS V2 reprocessing	May-19	May-19		
Reprocessed data maturity review	Jun-19	Jun-19		
Reprocessing paper/report	Sep-19	Sep-19		
Engineering assessment of transitioning reprocessed ATMS data from STAR to NCEI	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.*
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Issues/Risks:

None

Highlights: S-NPP VIIRS V2 Reprocessing Improvements

RSB Bands
- Using consistent RSBAutocal F-factors with MODTRAN/Kurucz solar spectrum (V1)
- OC F-factor based bias correction; Constant bias correction M5/M7 (V1)
- RSBAUTOCAL F-factors based on re-analyzed SD/SDSM screen and BRDF LUTs annual oscillation removed + further smoothed (V2)
- Updated OC F-factor based bias correction (V2)
- STAR Kalman model based bias correction factors (V2)

TEB Bands
- Preliminary Ltrace WUCD bias correction applied to M15/M16 (V1)
- Improved EBBT LUT, radiance limit mismatch resolved + better BT limits (V1/V2)
- Improved WUCD bias correction (corrected DELTA-C-LUT error), applied to all TEBs (V2)

DNB
- Time dependent DNB RSRs (xxx RSR LUTs) (V1/V2)
- RSBAUTOCAL LGS gains (V1/V2)
- using pitch maneuver data (no air glow) combined with onboard calibrator data, significant reduction in negative radiances (V1/V2)
- Reprocessed using on-orbit based offset and gain ratio (V1/V2)
- Reprocessing implements stray light correction for the entire record (V1/V2)
- Terrain corrected geolocation is generated for the entire data record(V1/V2)
- Improved calibration offsets with striping correction for Agg29-32 (V2)

ICVS

November, 2018

Accomplishments / Events:

- Set up automatic NOAA-20/S-NPP VIIRS RSB F-factor LUT and other tens of VIIRS LUTs download from Field Terminal Support (FTS) website to better support near real time VIIRS data quality monitoring
- Added new spacecraft attitude monitoring products for both NOAA-20 and S-NPP in ICVS web site to provide additional geolocation accuracy monitoring capability
- Set up NOAA-20 ATMS vs NOAA-19/Metop-A/Meotp-B AMSU-A/MHS inter-sensor comparison product using Simultaneous Nadir Overpass technique
- Implemented and improved CrIS geolocation accuracy monitoring package in ICVS
- Updated CrIS SDR bias monitoring package by improving the background field accuracy using hybrid inputs from both NUCAPS EDR and ECMWF forecast products
- Updated OMPS Earthview wavelength shift module
- Improved the ATMS hurricane temperature monitoring accuracy
- Provided California wild fire VIIRS high resolution images to support EDR team activities
- 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.*
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.*

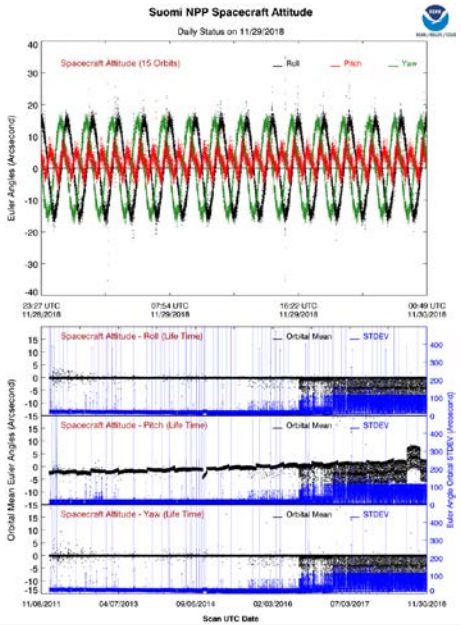
Issues/Risks:

None

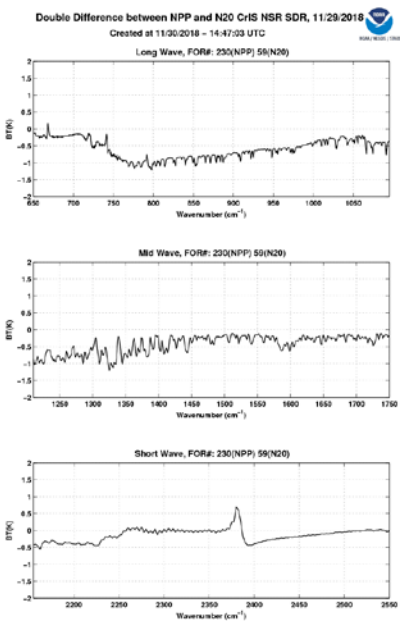
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
ICVS-Application: ICVS Severe Weather Watch (iSEW) System (Severe Weather Watch with JMAPPER) (Beta Version)	Dec-18	Dec-18		
ICVS User's Manual and Technical Report Version 1	Mar-19	Mar-19		
ICVS Module initialize and 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 Spacecraft Attitude Trending Image



CrIS NOAA-20/NPP SDR Double Difference



VIIRS Imagery

November, 2018

Accomplishments / Events:

- The **Imagery and Geo Teams** continue to meet regularly (the third Tuesday of each month) primarily about the Terrain Correction (TC) issue for EDR Imagery:
  - **All three types of VIIRS bands (I-bands, M-bands, and NCC) are now capable of being produced with Terrain Correction in ADL testing.**
  - The ADL experts are now working to agree on the set of code changes needed for TC implementation, now that the intention and extent of the changes are clear.
- **Polar SLIDER** (http://rammb-slider.cira.colostate.edu) now has selected VIIRS products, in addition to the VIIRS bands.. To access, choose “”JPSS” as the satellite, either the Northern or Southern Hemisphere sector.

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			

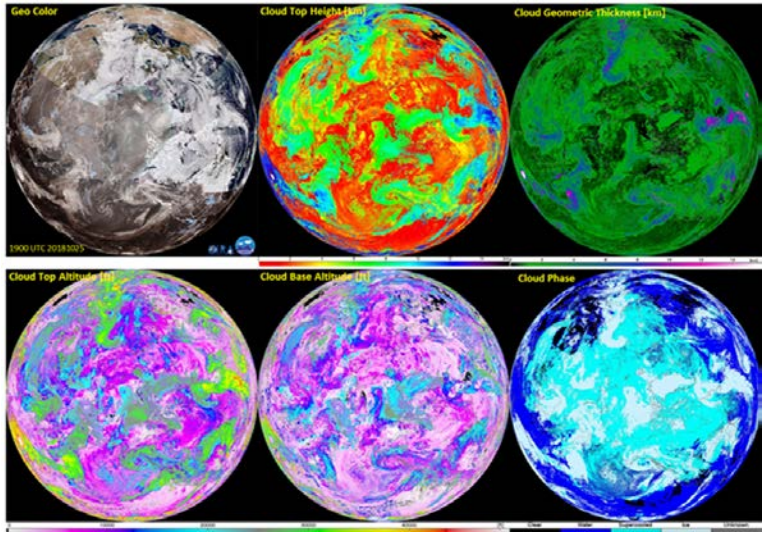
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

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)	Feb-19	Feb-19		
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19		
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:



Sample of VIIRS cloud products with GeoColor composite for the Northern Hemisphere sector on CIRA’s Polar SLIDER.

Clouds

November, 2018

Accomplishments / Events:

- November 27 Provisional Maturity Review for Daytime Cloud Optical and Microphysical Properties (DCOMP)
- October 2 Provisional Maturity Review for Cloud Mask, Cloud Phase/Type, Cloud Height (CTT/CTP/CTH), and Cloud Base Height products.
- Developed a 24 day library of SNPP and NOAA-20 data for analysis.
- Delivered NOAA-20 version of CLAVR-x into CSPP
- Delivered NOAA-20 Enterprise cloud algorithms and CLAVR-x to UAF GINA for the cloud demo this Fall.
- Conducted MODIS analysis for day / night consistency

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			

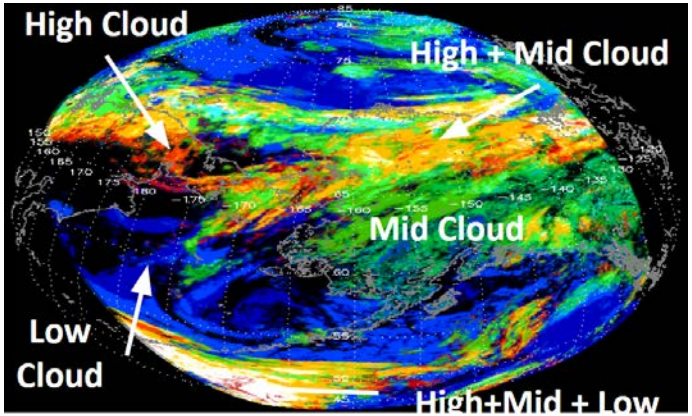
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta/Provisional Maturity: NCOMP (N20 Cal/Val)	Jan-19	Jan-19		
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)	Mar-19	Mar-19		
Final DAP (N20 Algorithm Adjustment)	Jan-19	Jan-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: RGB Based on Cloud Cover Layers



Example of a false color RGB derived from the 5-layer Cloud Cover Layer (CCL) product. RGB provides a quick view of the product that complements the quantitative layer values. This will be generated for the Alaska Cloud Demo.

Aerosol

November, 2018

Accomplishments / Events:

- Identified a bug in framework code (not present in science code) for ADP that is causing noisy (false) smoke detections over ocean. ASSIST is working on fixing the bug and an updated code will be delivered to NDE in December
- Tested the ability to generate VIIRS fires, RGB, AOD imagery from SNPP VIIRS in KML format for FIREX-AQ field campaign. The KML format is required to integrate VIIRS aerosol imagery into flight cockpit software
- Improved smoke detection in the back scattering direction, where sensitivity is usually low, due to the shape of phase function for smoke aerosol, by correcting Rayleigh scattering before calculating Dust Smoke Discrimination Index
- Validation of the NOAA-20 I&T retrievals against the AERONET measurements showed the high quality retrievals agree with the "ground truth" reasonably. However, due to the short time period and the complicated surface condition in winter, retrievals have a slight higher bias than requirement over high AOD (>0.8) over land

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			

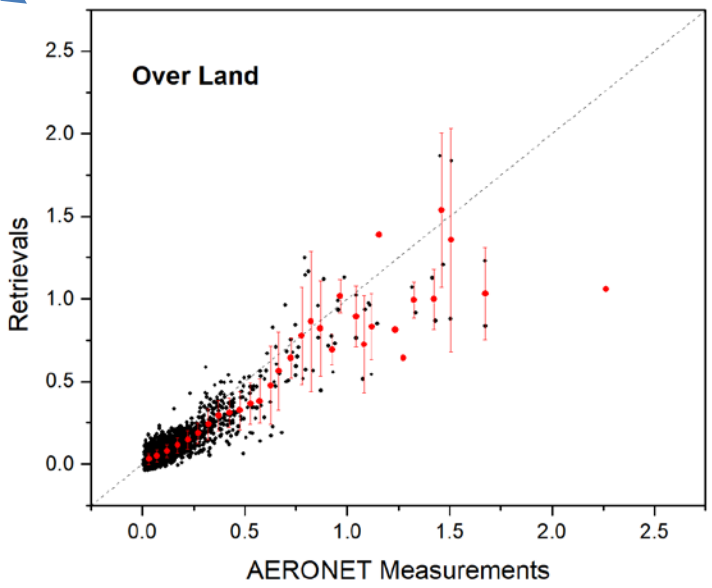
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity (N20 Cal/Val))	Mar-19	Mar-19		
Final DAP (N20 Algorithm Adjustment)	Jan-19	Jan-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		

09/28/2018 – 11/22/2018



Volcanic Ash

November, 2018

Accomplishments / Events:

- Added to a list of NOAA-20 VIIRS granules that were known to contain ash.
- Validated NOAA-20 products against height and loading derived from advection pattern for 7 cases presented at Provisional maturity review (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			

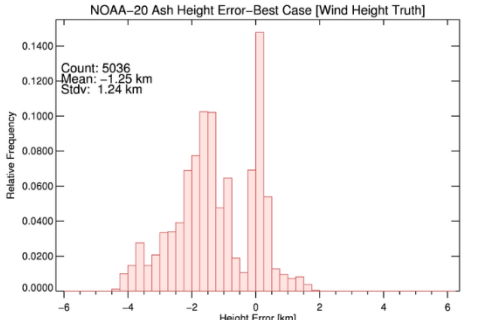
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

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)	Mar-19	Mar-19		
Final DAP (N20 Algorithm Adjustment)	Jan-18	Jan-18		
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	Mar-19		

Highlights: Wind Advection NOAA-20 Best Case Validation



Using wind advection validation technique, NOAA-20 NDE ash height and ash mass loading are shown to meet accuracy and precision specifications (ash height top and ash mas loading bottom).

Figures to the left were generated using 7 volcanic ash events observed by NOAA-20.

Cryosphere

November, 2018

Accomplishments / Events:

- **New NDE cloud mask appears more conservative than the previous one**. Analysis of SNPP and N20 VIIRS snow products generated within NDE since October this year shows that the cloud mask has become more conservative as compared to the one that was available earlier.

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			

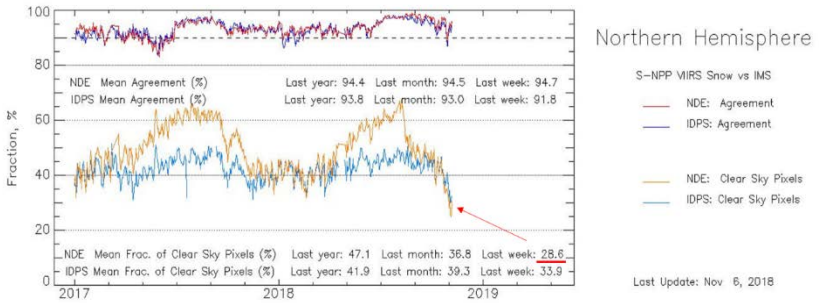
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

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)	Jan-19	Jan-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:



Time series of daily estimates of the accuracy of snow retrievals and of the fraction of clear-sky pixels in global gridded snow products generated from SNPP VIIRS within IDPS and NDE, clearly demonstrating a considerable decrease in the number of clear sky scenes in the NDE product in the second half of 2018 resulting from a more conservative cloud mask.

Active Fires

November, 2018

Accomplishments / Events:

- Worked on algorithm refinement issues that impact both M-band and I-band algorithms (false alarms from unfiltered solar farms and hot smoke plumes)
- Worked with the HRRR-smoke group to evaluate impact analysis of the I-band product
- Compared fire radiative power (FRP) data from the M-band and I-band products over the Camp Fire event in California
- Worked on technical specifications for possible operational I-band production

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			

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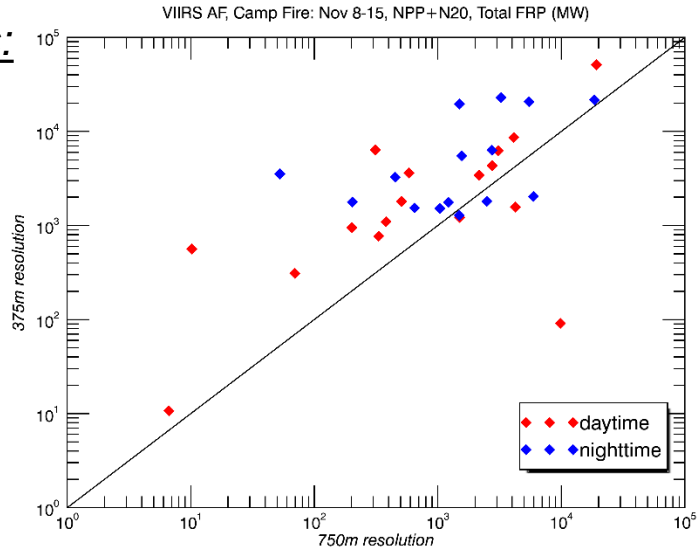
Issues/Risks:

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		
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:



Credit: Marina Tsidulko, IMSG@STAR

Scatterplot of fire radiative power (FRP) retrievals over the Camp Fire from the I-band and M-band products from data on November 8-15, 2018.

Surface Reflectance

November, 2018

Accomplishments / Events:

- Generated and tested new aerosol LUT to correct for mismatch of select bands
- Performed impact analysis that yielded expected results
- Delivered updated LUT to NDE
- Worked on interfacing NDE product output and AERONET validation data
- Continued working on documentation towards Provisional review

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			

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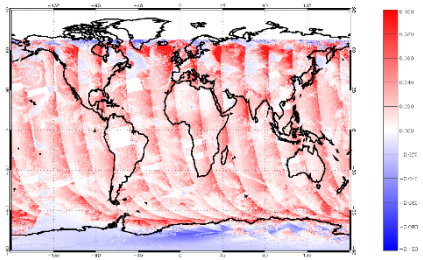
Issues/Risks:

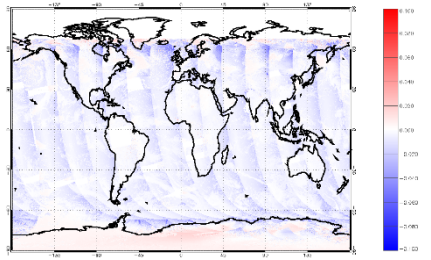
None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Jan-19	Jan-19		Time needed to run science evaluation of corrected LUT
Final DAP (N20 Algorithm Adjustment)	Apr-19	Apr-19		
S-NPP / NOAA-20 data analysis	Sep-19	Sep-19		

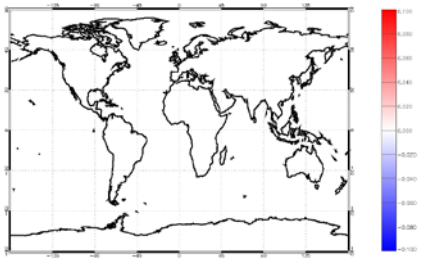
Highlights:



I1 mean diff: 0.0064



I2 mean diff: -0.0015



M3 mean diff: 0

Impact of the updated aerosol LUT on surface reflectance retrievals for NOAA-20 VIIRS bands I1, I2 and M3, which are the bands used by the Vegetation Index product. [OLD – NEW] difference maps are shown for November 11, 2018.

Credit: Mike Wilson (IMSG@STAR)

Surface Type

November, 2018

Accomplishments / Events:

- Downloaded and processed VIIRS observations acquired in November to create daily mosaics (up to the writing of this report)
- Continue to evaluate the 2017 AST product against the MODIS C6 product and ESA's Climate Change Initiative (CCI) global land cover product
  - Downloaded the entire CCI dataset
  - Reprojected from the original lat/long coordinates to the VIIRS sinusoidal projection
  - Compared the class definitions and recoded the CCI classes to match those of the VIIRS AST 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				

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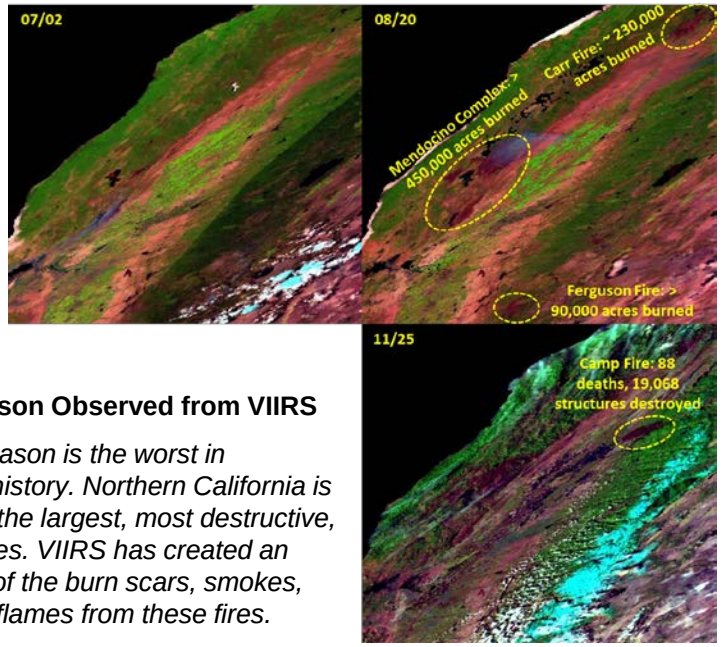
Issues/Risks:

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		

Highlights:



Worst Fire Season Observed from VIIRS

The 2018 fire season is the worst in California's fire history. Northern California is the epicenter of the largest, most destructive, and deadliest fires. VIIRS has created an imagery record of the burn scars, smokes, and even some flames from these fires.

Land Surface Temperature

October, 2018

Accomplishments / Events:

- Further worked on the system test of the NDE LST output and finalized related presentation slides. The enterprise LST ORR was successfully held on Nov. 16, 2018.
- Upon the user request from NCEP, two variables including sensor zenith angle and azimuth angle were added into the LST output. To minimize the file size, the two variables are stored as scaled value with byte data type. Cooperated with ASSIST group for the code change and result verifications.
- The snow cover input for NDE LST generation was switched from NWP snow cover to the VIIRS snow cover EDR. Due to the data resolution difference, the sub-sampling method was used to get the moderate resolution snow cover at pixel level. VIIRS snow cover provides more details comparing to the NWP snow cover. (Highlight)
- Minor issues observed in ARR and ORR e.g valid range of the LST quality flag were fixed. These updates were included in the Jan DAP.
- Continue to work on the manuscript on the enterprise LST algorithm development and its evaluation using NOAA 20 data (Slide 2).The draft version is almost ready.
- Continue to monitor the NOAA 20 LST data at granule and global scale.

Overall Status:

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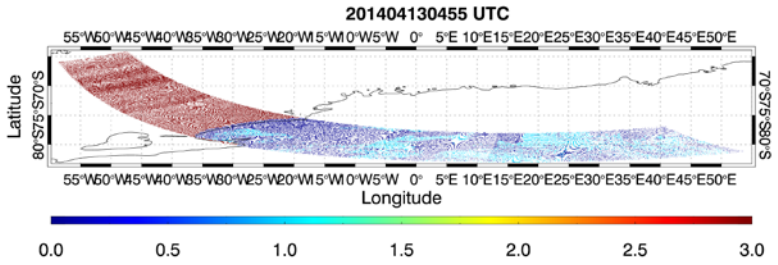
Issues/Risks:

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
S-NPP LST ORR	Nov-18	Nov-18	11/16/18	
Provisional Maturity (N20 Cal/Val)	Jan-19	Jan-19		
Final DAP (N20 Algorithm Adjustment)	Jan-19	Jan-19		
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		
Initial DAP to NDE	Mar-19	Mar-19		
Algorithm Readiness Review (ARR)	Jul-19	Jul-19		
Final DAP to NDE	Jul-19	Jul-19		

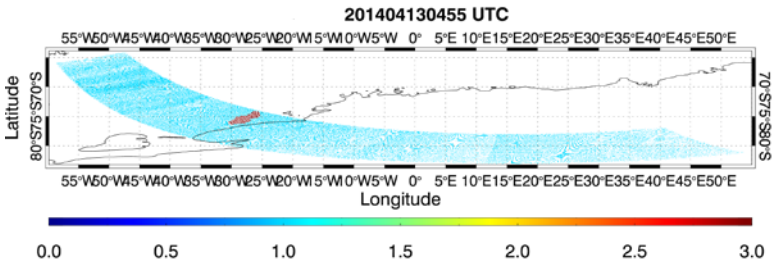
Highlights:

Input

VIIRS snow cover EDR

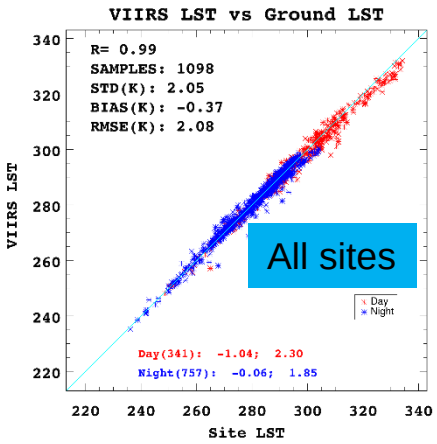


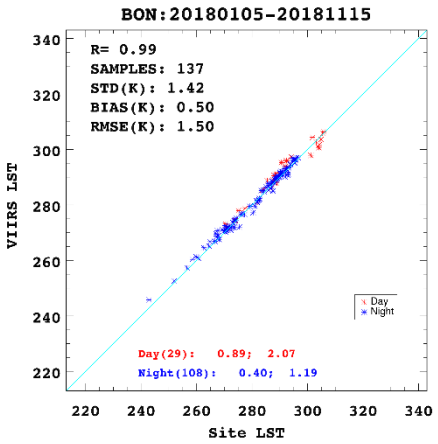
NWP snow cover

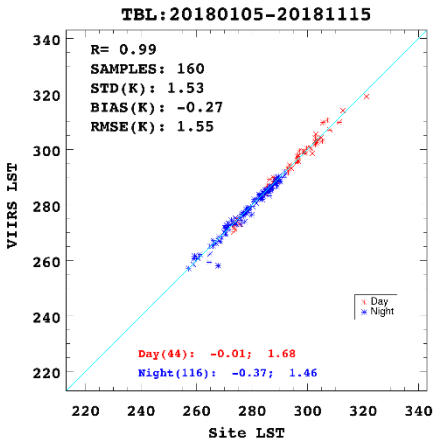


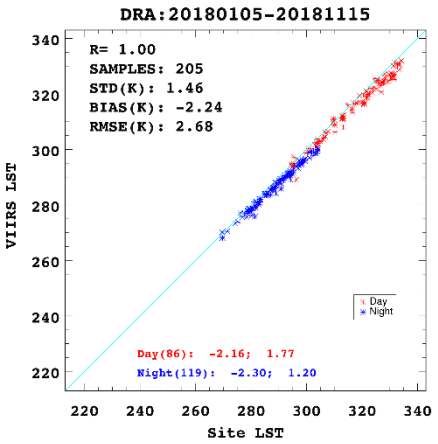
NDE LST Quality Flag bit 6-7 for surface cover
0-land,1-snow,2-inland water, 3-coastal (including see water)

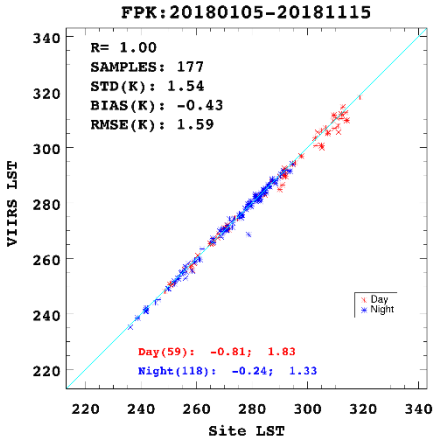
Enterprise LST Validation against SURFRAD data

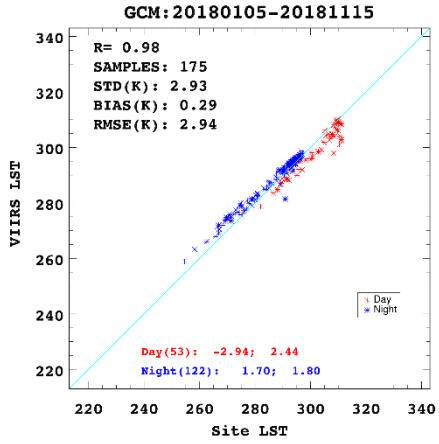


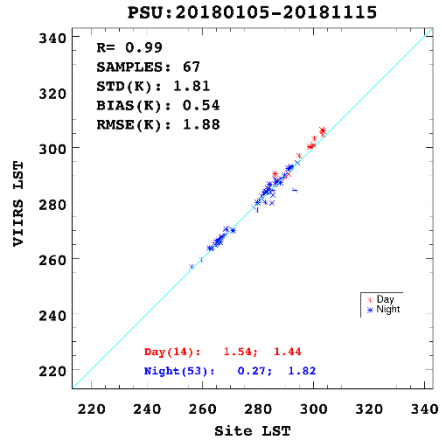


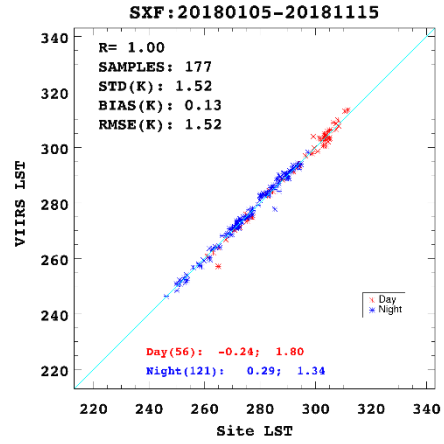












Enterprise NOAA 20 LST against ground observations from SURFRAD for time period from Jan to Nov, 2018. The LST data is from local calculation.

Surface Albedo

November, 2018

Accomplishments / Events:

- Passed the Operational Readiness Review (ORR) of L3 albedo product
- Passed the Satellite Products and Services Review Board Decision Brief on Declaring Operational of L2 albedo product
- Published a peer-reviewed manuscript on NPP VIIRS sea-ice granule albedo product
- Compared NPP VIIRS operational albedo product with MODIS daily mean albedo **(Slide #2)**
- Investigated the albedo response to California wildfire events **(Highlight, Slide #3)**
- Building the local production system of NPP & NOAA-20 VIIRS albedo products

Overall Status:

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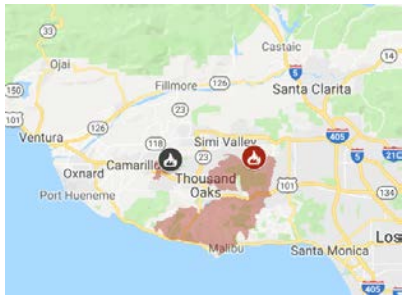
Issues/Risks:

1. The Provisional Maturity Review for (N20 Cal/Val) is scheduled in Jan-19 due to no valid NOAA-20 granule albedo data in AIT NRT system

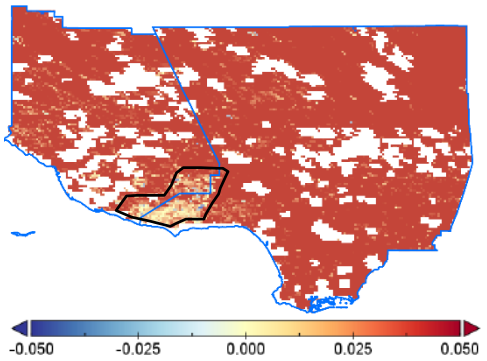
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
S-NPP LSA ORR	Nov-18	Nov-18	11/16/18	
Provisional Maturity (N20 Cal/Val)	Jan-19	Jan-19		
Final DAP (N20 Algorithm Adjustment)	Jan-19	Jan-19		
NOAA-20 LUT update	Apr-19	Apr-19		
New 1-km albedo climatology dataset delivery	Apr-19	Apr-19	Sep-18	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)	Feb-19	Feb-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:

Woolsey Fire on Google Map



LSA difference after fire



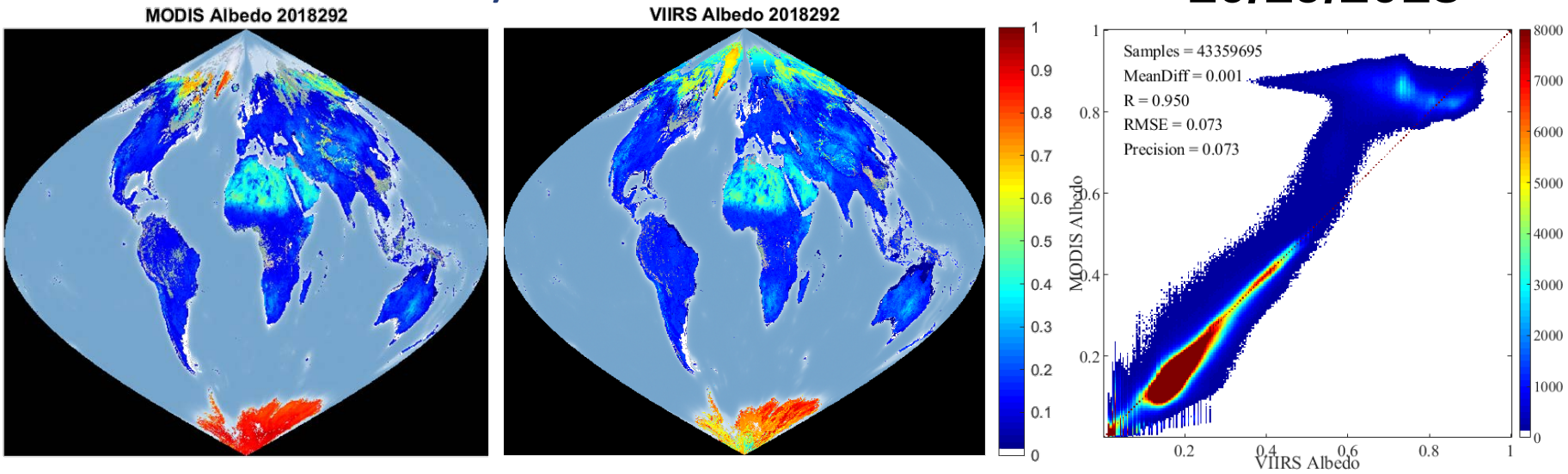
California Wildfire on LSA Fire central area shows slightly decreasing LSA, probably due to the exposure of dark soil after the burning of vegetation; Surroundings show strong increasing LSA due to the AOD variation. Cloudy sky would cause difficulties to catch the LSA change after unexpected events.

Validation of Enterprise VIIRS LSA:

NDE LSA *vs* MODIS LSA

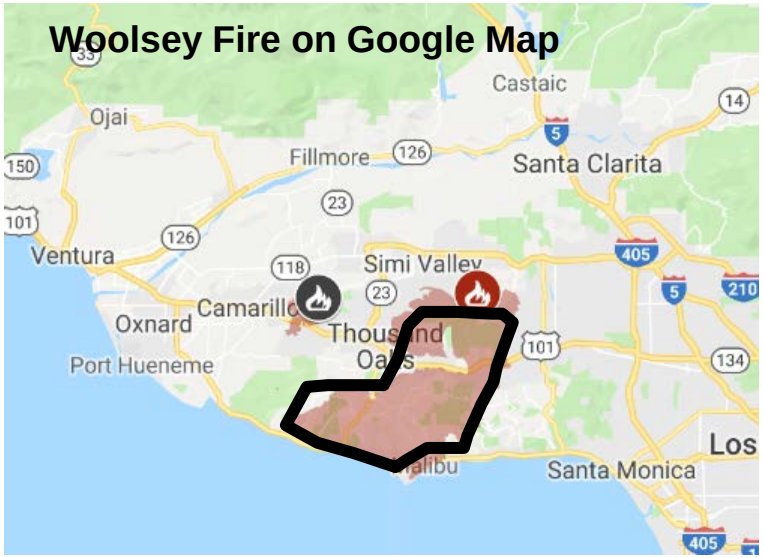
NDE LSA & MODIS daily mean albedo

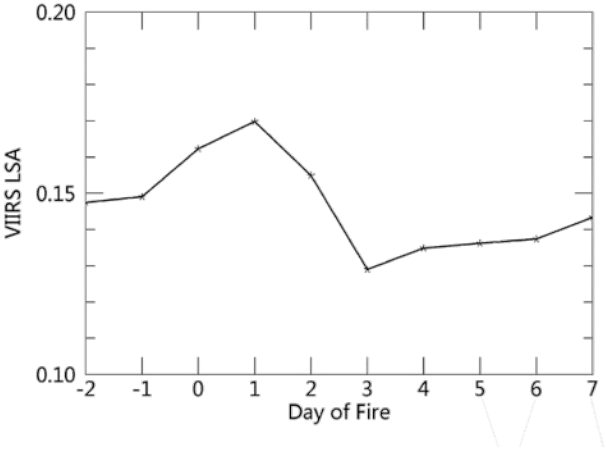
10/19/2018

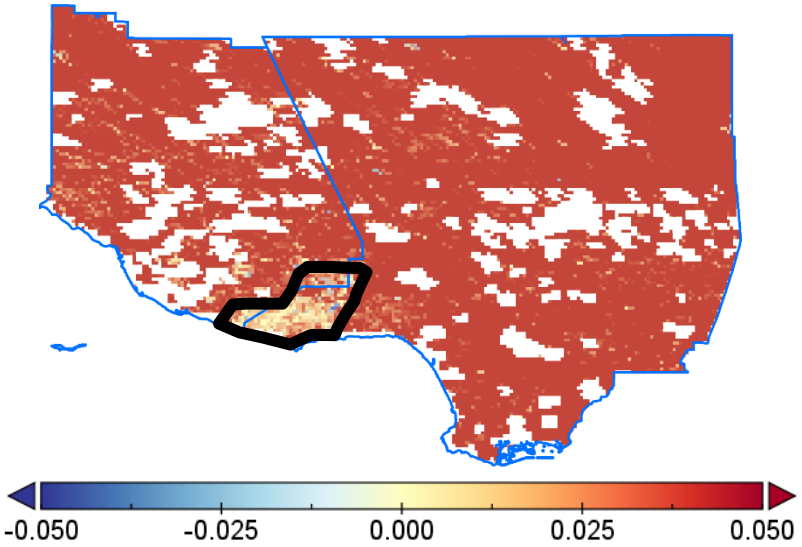


- Snow-covered surfaces contribute most to the overall differences between two albedo products
  - Considering that MODIS albedo product is based on 16-day mean data, and VIIRS has 2-day latency. The snow mask difference mainly caused the different retrieval path and thus the difference.
  - Antarctica dominates the high albedo ranges, and VIIRS albedo shows larger variations compared with MODIS over such snow surface. One source of such bias comes from the climatology data used in the process of temporal-filtering, suggesting that climatology over permanent snow surfaces needs to be improved in the future.

VIIRS LSA response to California wildfire 2018

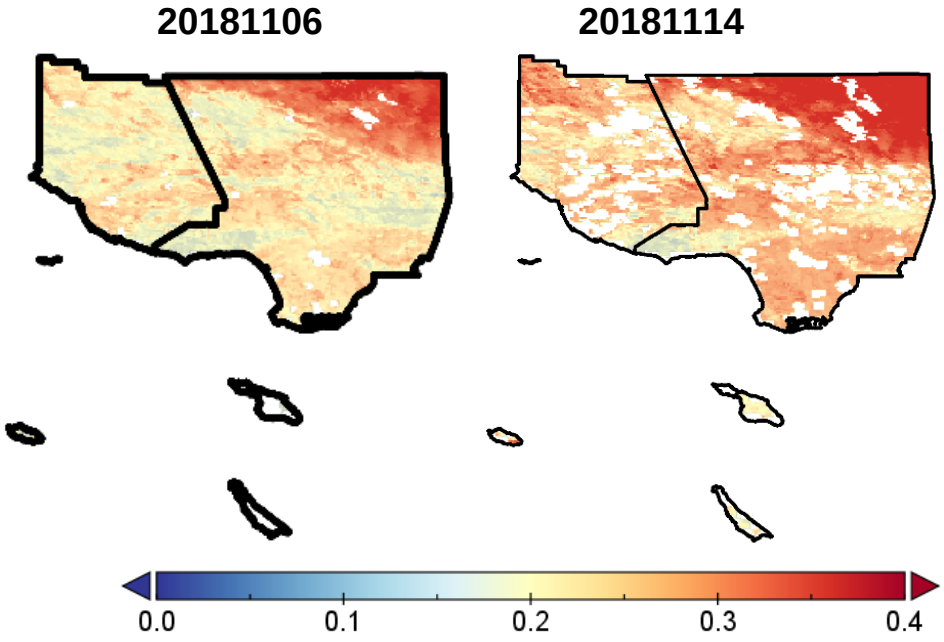






LSA difference after fire

Pre-fire (20181106) and post-fire (20181114)



Green Vegetation Fraction

November, 2018

Accomplishments / Events:

- Delivered Initial DAP (NOAA-20 VIIRS GVF) to NDE
- Tested the merged NVPS VI & GVF operational algorithm with NOAA-20 input
- Validating NOAA-20 VIIRS GVF product with GVF derived from Landsat
- 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:

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Schedule		X			

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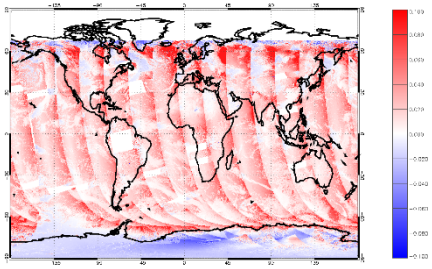
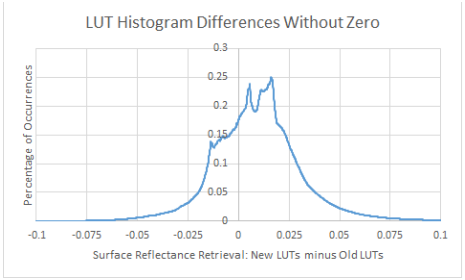
Issues/Risks:

VIIRS SR team figured out the issue of consistency between IDPS surface reflectance (SR) and NDE SR, and efforts to address the issue are ongoing

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Feb-19	Feb-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:

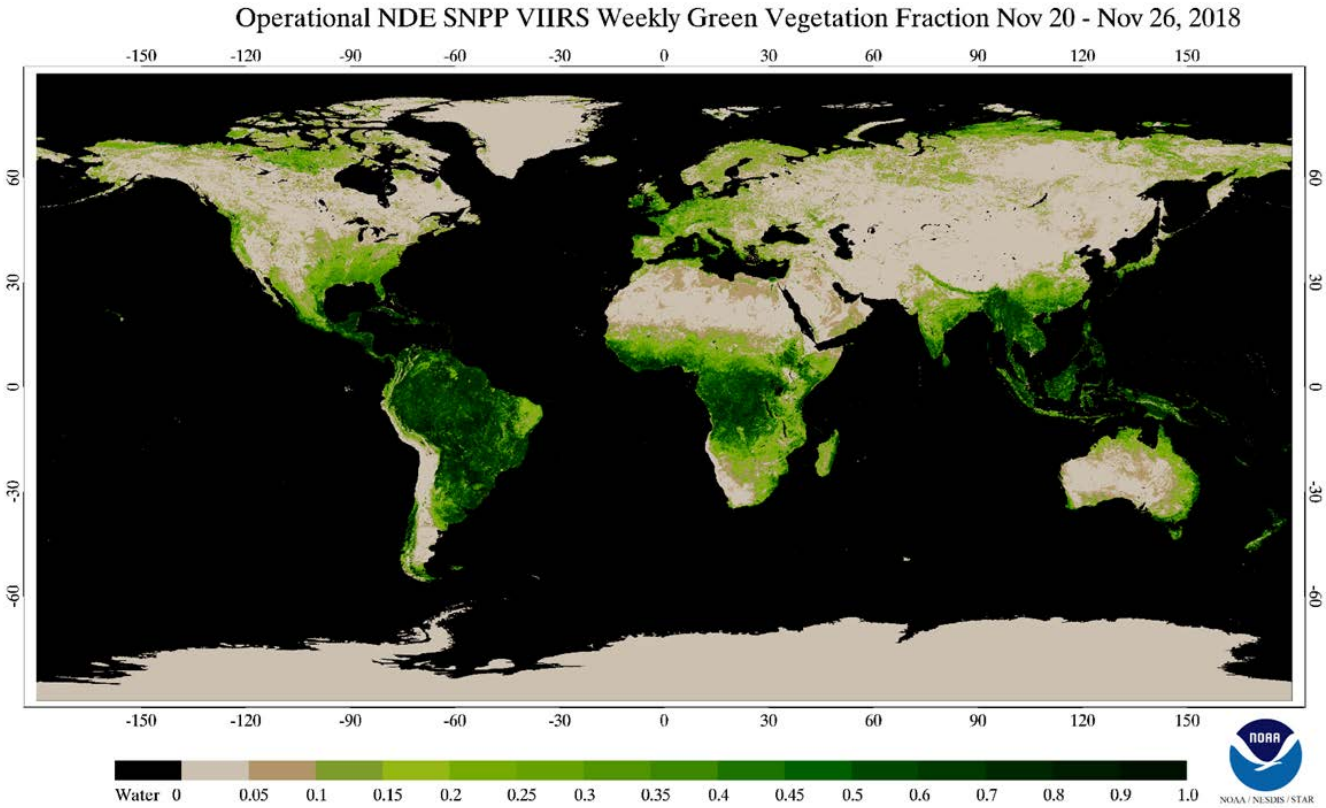




VIIRS SR team found that the issue of consistency between IDPS SR and NDE SR is due to a mistake in Look-up table. The left figure shows the difference image between SR I1 band produced from a corrected look-up table and that from an erroneous look-up table. The color denotes the magnitude of difference with red for higher SR I1 band values using corrected look-up table, and blue for lower SR I1 band. The right figure is the histogram of the difference image, suggesting that SR I1 band values are underestimated due to the erroneous look-up table. VIIRS GVF team is running VIIRS GVF algorithm to reproduce GVF product for testing data, and will conduct an experiment to test the impact of erroneous look-up table on VIIRS GVF product.

NDE Keeps Producing SNPP VIIRS GVF Product

November, 2018



Since September 27th, NDE started producing VIIRS GVF product, and the system has been running smoothly. The figure above is a sample global GVF product at 4 km scale.

Vegetation Index

November, 2018

Accomplishments / Events:

- Delivered Initial DAP (NOAA-20 VIIRS VI) to NDE
- Tested the merged NVPS VI & GVF operational algorithm with NOAA-20 input
- Validating NOAA-20 VIIRS VI product using MODIS & NEON VI product
- 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			

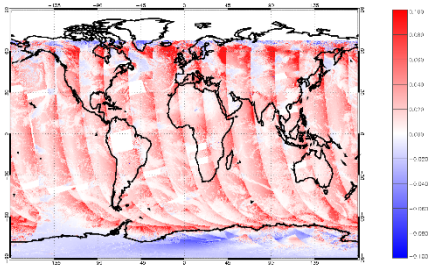
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

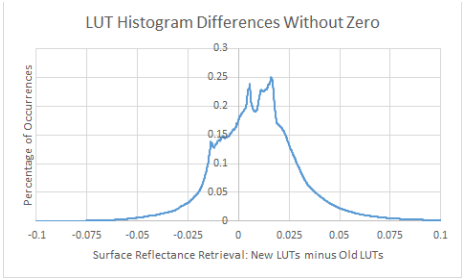
Issues/Risks:

VIIRS SR team figured out the issue of consistency between IDPS surface reflectance (SR) and NDE SR, and efforts to address the issue are ongoing.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Feb-19	Feb-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:

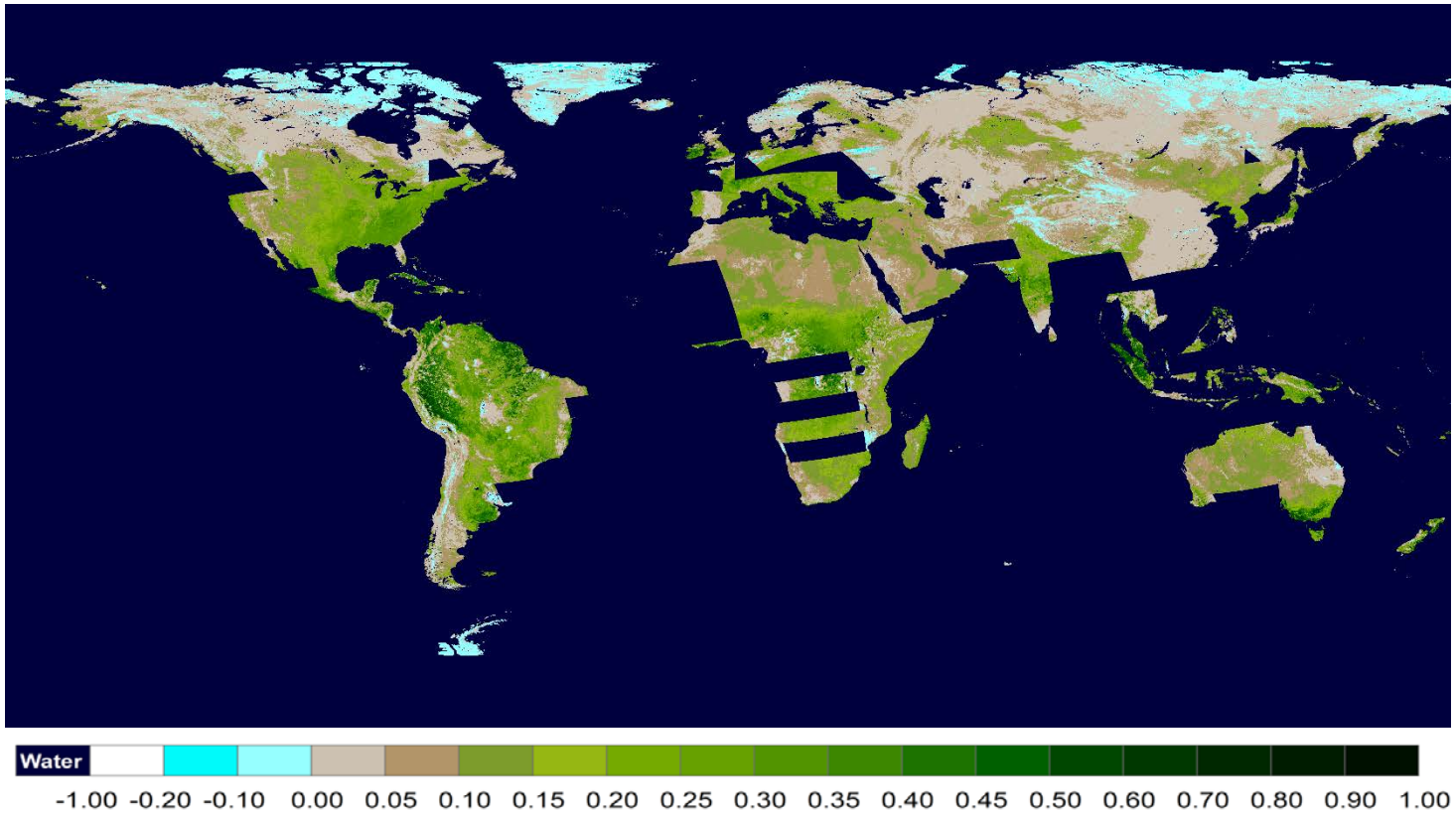




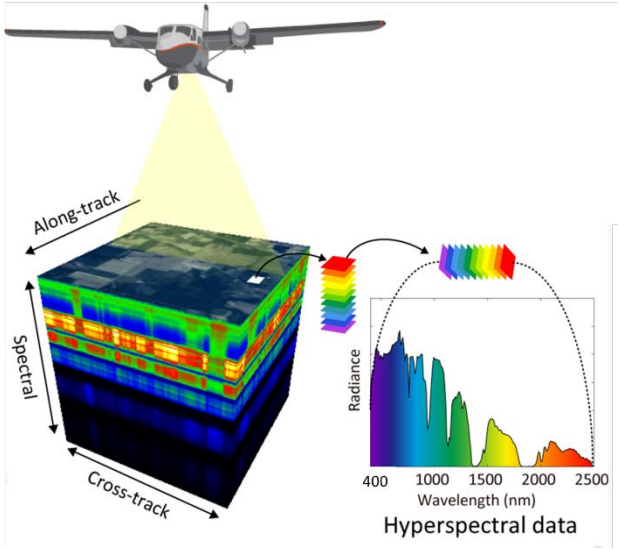
VIIRS SR team found that the issue of consistency between IDPS SR and NDE SR is due to a mistake in Look-up table. The left figure shows the difference image between SR I1 band produced from a corrected look-up table and that from an erroneous look-up table. The color denotes the magnitude of difference with red for higher SR I1 band values using corrected look-up table, and blue for lower SR I1 band. The right figure is the histogram of the difference image, suggesting that SR I1 band values are underestimated due to the erroneous look-up table. VIIRS VI team is running VIIRS VI algorithm to reproduce VI product for testing data, and will conduct an experiment to test the impact of erroneous look-up table on VIIRS VI product.

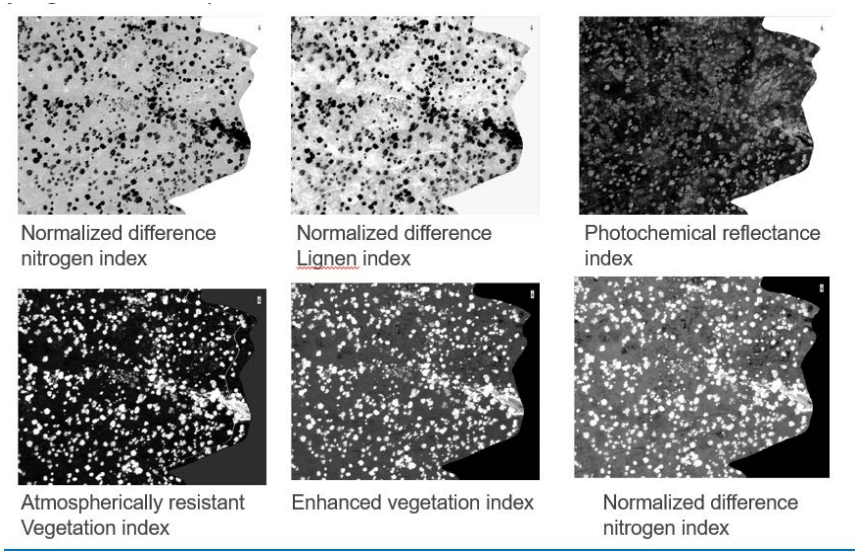
NDE Keeps Producing SNPP VIIRS VI Product

November, 2018



Since September 27th, NDE started producing VIIRS VI product, and the system has been running smoothly. The figure above is a sample global VI product at 4 km scale.





VIIRS VI team is devoting significant efforts to conduct a more comprehensive validation for provisional release scheduled in Feb. 2019. Figures above shows an exploration of VI team to use National Ecological Observatory Network (NEON) hyperspectral remote sensing VI product to validate our NOAA-20 VI product. It is expected that NEON VI product would serve as a good source for our validation efforts.

Vegetation Health

November, 2018

Accomplishments / Events:

- Comparison of USDA mean admin. with crop admin
- IDL code to compare the country (or province) averaged VH time series between two versions.

-Memo for web pages on country (or province) averaged VH time series.

- Routine generation of NOAA-20 and SNPP VIIRS 500m, 1km, 4km, 16km weekly composite VH data & products;
- Preparation for AGU meeting (Drought from NOAA-20)

Overall Status:

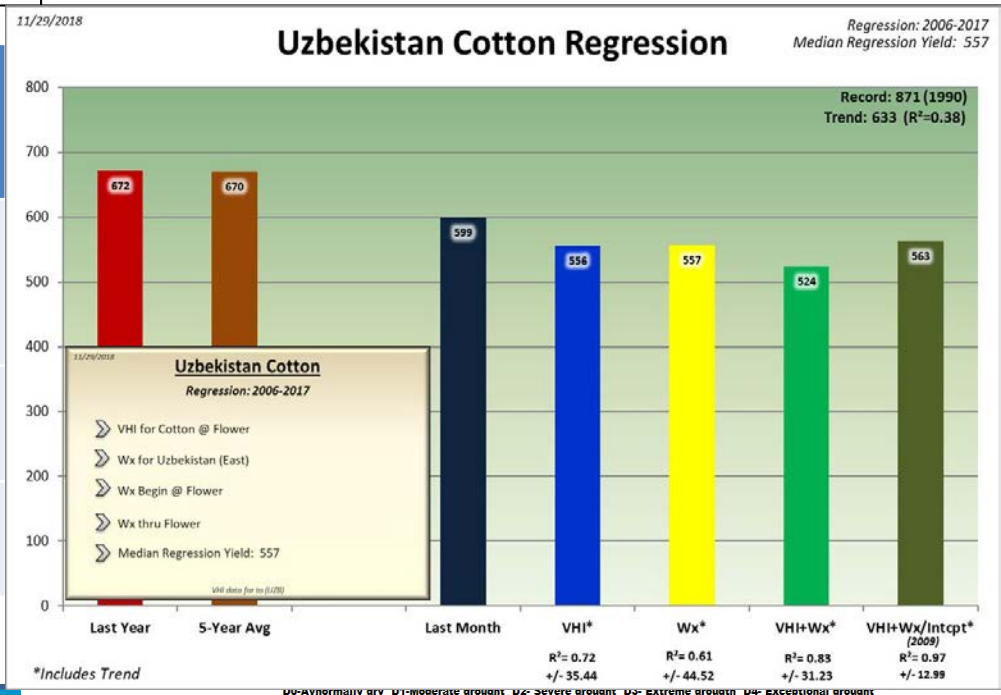
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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	Feb-19		
S-NPP / NOAA-20 data analysis	Sep-19	Sep-19		
Cal/Val tool development (SNPP & J1 comparison)	Sep-19	Sep-19		



Ocean Color

November, 2018

Accomplishments / Events:

- Milestone: The Maturity Review for VIIRS NOAA-20 Ocean Color NOAA-MSL12 processing system (the NOAA "enterprise algorithm) was conducted on Tues., 27 Nov 2018. Menghua Wang presented results in support of requesting "provisional" maturity status.

- VIIRS OC Cal/Val external team members presented at recent bi-weekly telecon
  - Ken Voss – U. Miami, presented on MOBY operations and MOBY Refresh update
  - Bob Arnone, Stennis Group presented on WavCIS Aeronet-OC status and early results from NOAA dedicated VIIRS Cal/Val cruise activities (Oceanus Explorer, May 2018)

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	
Initial N20 DAP to CoastWatch	Dec-18	Dec-18		
Final N20 DAP to CoastWatch	Mar-19	Mar-19		
Vicarious calibration for VIIRS-NOAA-20 using MOBY in situ data	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:

Milestone: Maturity Review for VIIRS NOAA-20 Ocean Color NOAA-MSL12 processing system was on Tues., 27 Nov 2018. Menghua Wang presented results in support of requesting "provisional" maturity status.

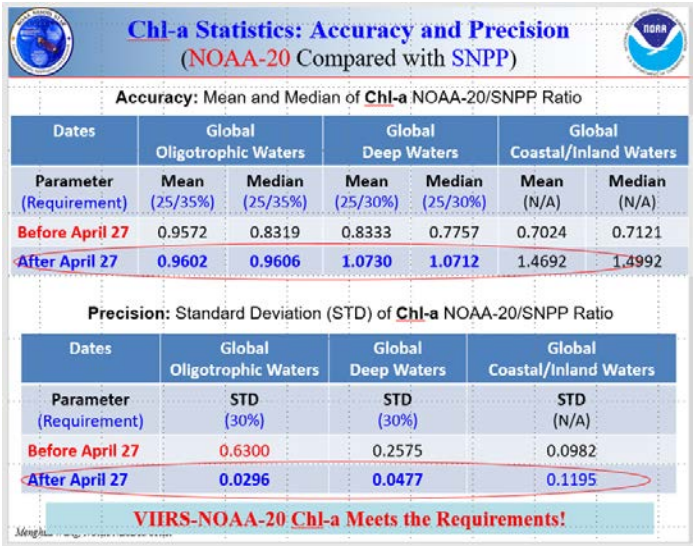


Figure: Statistics for performance of MSL12 for chlorophyll-a parameter, which is a derived product from the water leaving radiances (nLw).

Sea Surface Temperature

November, 2018

Accomplishments / Events:

- Following ACSPO v2.60 delivery to NDE in Jun 2018, operational implementation is now planned on 6 Nov 2018
- Once ACSPO 2.60 is operational, archival of N20 SST will commence with PO.DAAC. Operational record will be back-filled to Jan 2018-pr with N20 RAN1 data currently produced in STAR
- We worked with VIIRS SST users to evaluate 2.60 SNPP SST with Met Office OSTIA Team. Also, we worked with the NOS West Coast Ocean Forecast System (WCOFS) Project to evaluate the new N20 SST product. Both users report that they are ready. Notices were also sent to all other users of ACSPO VIIRS SST.
- The future ACSPO v2.70 will explore a super-collated gridded (L3S) 0.02° VIIRS SST product from SNPP and N20 L3Us, which will reduce residual cloud, suppress noise, and improve coverage

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)	Apr-19	Apr-19		
Final DAP (ACSPO 2.70)	Aug-19	Aug-19		
N20 RAN1 & SNPP RAN2	May-19	May-19		
Improve SST/clear mask/ocean fronts	May-19	May-19		

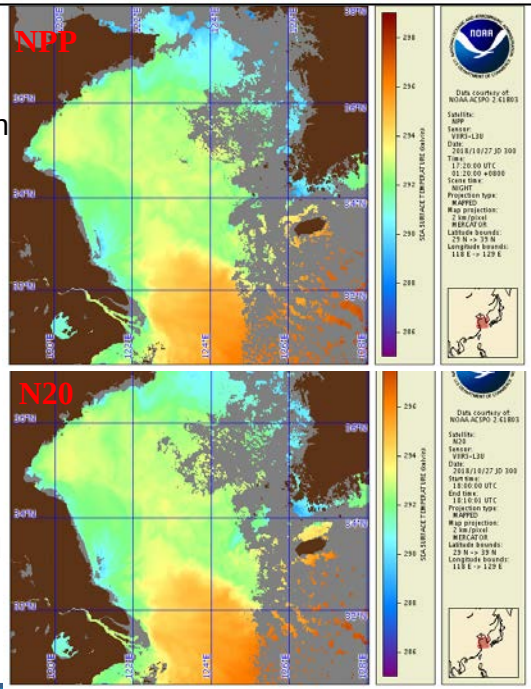
Highlights:

ACSPO 2.60, delivered in Jun 2018, will become operational in NDE on 6 Nov 2018.

It will produce 2 SST products: SNPP & N20. They are highly consistent yet complementary.

We will explore aggregating those and creating a global 0.02° gridded super-collated L3S VIIRS product.

L3S will report data of improved quality (reduced residual cloud and suppressed random noise), and in larger retrieval domain.



VIIRS Polar Winds

November, 2018

Accomplishments / Events:

- **Updated Comparisons of NOAA-20 winds to S-NPP, MODIS and Rawinsondes for October 2018.** Results indicate very close values in NOAA-20 AMVs compared to S-NPP and MODIS.

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			

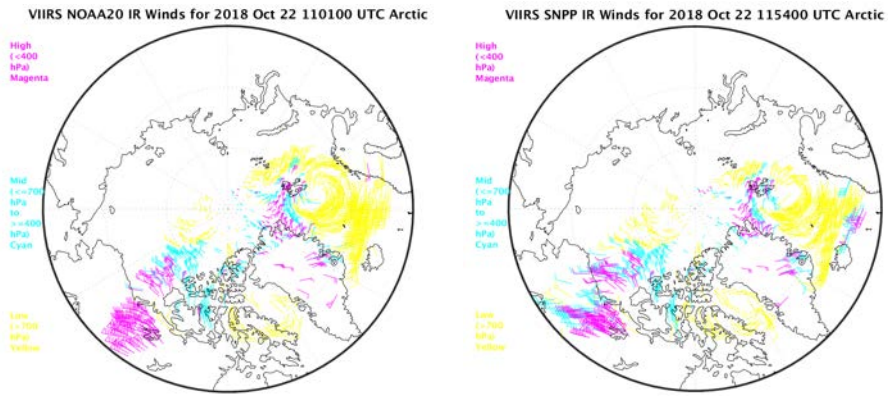
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta/Provisional Maturity			10/02/18	
Validated Maturity (N20 Cal/Val)	Mar-19	Mar-19		
Final DAP (N20 Algorithm Adjustment)	Jan-19	Jan-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:



IR derived AMVs on 22 October 2018 for NOAA-20 at 1101 UTC (left) and S-NPP 1154 UTC (right).

NUCAPS Products

November, 2018

Accomplishments / Events

- Works continue towards the improvement of the CH4 product.
- Work has been performed in preparation of the MetOp C NUCAPS CDR. Focus of this activity has been the validation of the MetOp B NUCAPS runs in the HEAP. We continue making progress towards the harmonization of all hyper spectral operational systems: SNPP, NOAA-20, MetOp A, B and soon C.
- On Nov. 4th Antonia Gambacorta remotely attended the Fall MTG IRS Mission Advisory Group.
- On Nov. 4th Antonia Gambacorta presented on the status of NUCAPS in the November JPSS RRPG teleconference.
- On Nov. 29th Nick Nalli gave a presentation on future development plans of a temperature dependent ocean surface emissivity in CRTM.

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.*

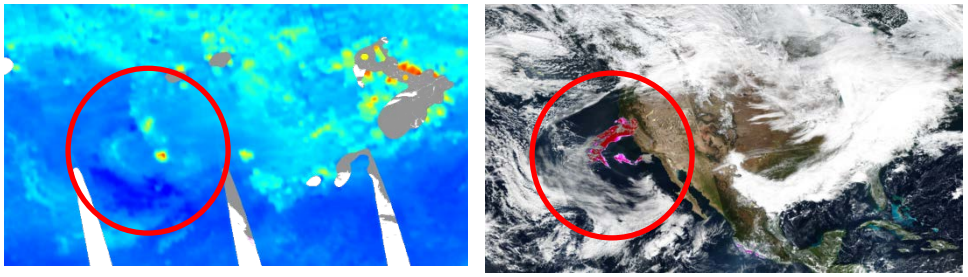
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity: Ozone, CO, OLR			10/02/18	
N20 Provisional Maturity: CO2, CH4	Apr-19	Apr-19		
N20 Validated Maturity	Sep-19	Sep-19		
Validated Maturity: S-NPP Trace Gas (CO/CO2/CH4)	Sep-19	Sep-19		
Final DAP (N20 Algorithm Adjustment)	Apr-19	Apr-19		
Generate regression coefficients (OLR)	Apr-19	Apr-19		
Validation with NPP CERES radiation products (OLR)	Sep-19	Sep-19		
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		

Highlights:

- *NUCAPS carbon monoxide from the operational version captured the California fire of November 9th, 2018 with a stable quality control and high accuracy.*



Left figure shows the NUCAPS carbon monoxide's plume at 500 hPa, released by the wildfires that afflicted the west coast of California, on November 9, 2018. Right figure is the correlative SNPP VIIRS smoke/dust/ash mask.

MiRS Products

November, 2018

Accomplishments / Events:

- Continuing to work with NDE to integrate MiRS v11.3 into operations. Verification testing in I&T string at NDE shows that NDE NPP and N20 outputs are in 100% agreement with outputs produced at STAR.
- An SCR was approved to push delivery date of final N20 DAP to March 2019 in order to harmonize delivery schedule with Metop-C DAP delivery schedule. Both N20 and Metop-C preliminary capability will be included in the March 2019 DAP.

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			

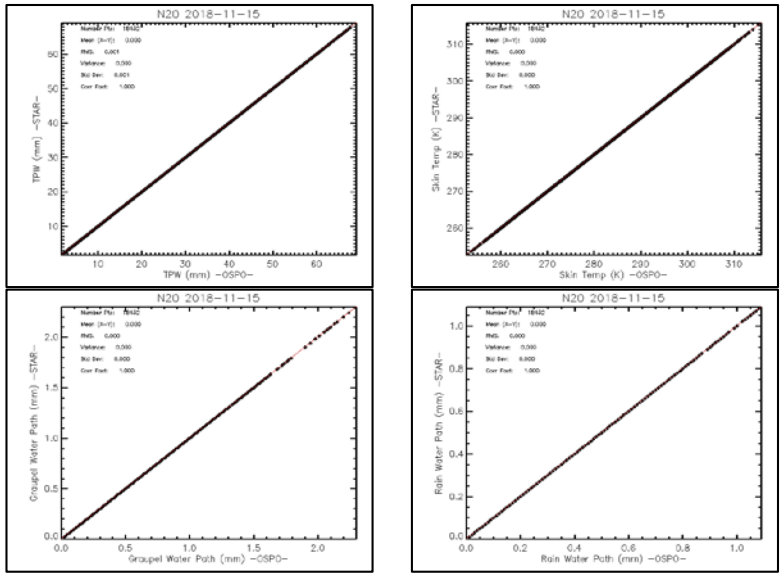
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

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:



Multiple granule verification test of OSPO/NDE I&T and STAR MiRS outputs for N20 showing 100% agreement. EDRs shown are TPW, Tskin, Graupel Water Path, and Rain Water Path.

Snowfall Rate

November, 2018

Accomplishments / Events:

- Calibration of the NOAA-20 SFR is ongoing.
- The SFR team is revamping the ATMS SFR processing system so a unified system can be used for both S-NPP and NOAA-20 which have different algorithm coefficients. The new system will be delivered to the MiRS team and integrated in the NOAA-20 final DAP.
- A S-NPP SFR briefing was given to the SPSRB on November 28, 2018. The board members agreed to declare the product operational once a minor user readiness issue is resolved.

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			

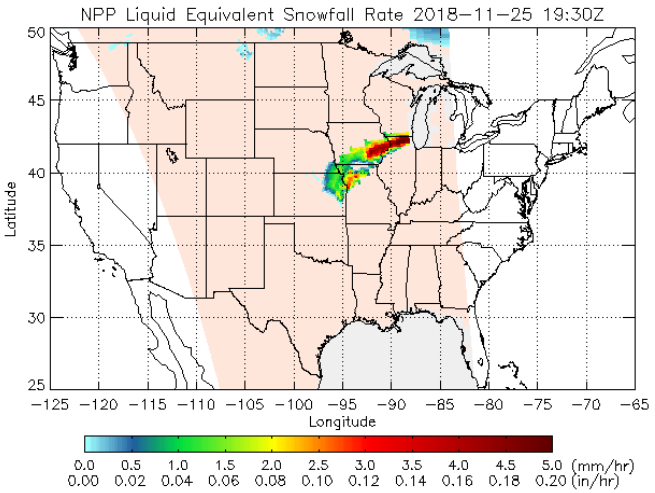
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

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		
Deliver updated SFR package to MiRS team (for Mar-19 DAP delivery)	Feb-19	Feb-19		
Validation against in-situ, Stage IV, and MRMS data	Jul-19	Jul-19		

Highlights:



A S-NPP overpass showing the first major snowstorm in the Midwest on November 25, 2018

OMPS Ozone

November, 2018

Accomplishments / Events:

- V8TOz reached Provisional Maturity (10/2/2018)
- OMPS Total Ozone EDR Adjustment Table deliveries for V8TOz and V8TOS were checked by ASSIST and delivered to NDE.
- SO2 alert pages at OSPO are up.
- Performance of TOAST blended products using V8Pro and CrIS NUCAPS EDRs at OSPO verified vs STAR.
- Monitoring site content expansion to include more NOAA-20 OMPS products continued.

https://www.star.nesdis.noaa.gov/smcd/spb/OMPSDemo/proOMPSbeta.TOZ_N20_V8.php

Overall Status:

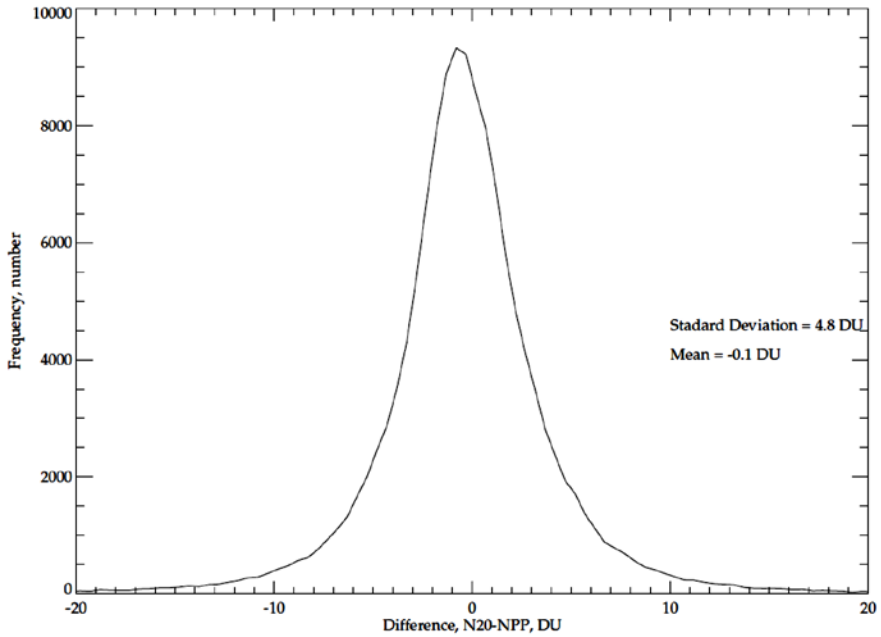
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule			X		# SDR Schedule

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 SDR on path to maturity will not be implemented at IDPS until July and September 2018.

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



Histogram of Total Ozone Matchups for Latest Adjustment Table

OMPS Ozone

November, 2018

Accomplishments / Events:

- NOAA-20 V8TOz approved for move from I&T to Ops.
- OMPS Total Ozone EDR Adjustment Tables in NDE I&T.
- V2Limb moved from Dev to NDE I&T.
- Daily TOAST blended products using V8Pro and CrIS NUCAPS EDRs now live at OSPO

https://www.ospo.noaa.gov/Products/atmosphere/ntoast/index.html

- Monitoring site content expansion to include more NOAA-20 OMPS products continued.

https://www.star.nesdis.noaa.gov/smcd/spb/OMPSDemo/proOMPSbeta.TOZ_N20_V8.php

Overall Status:

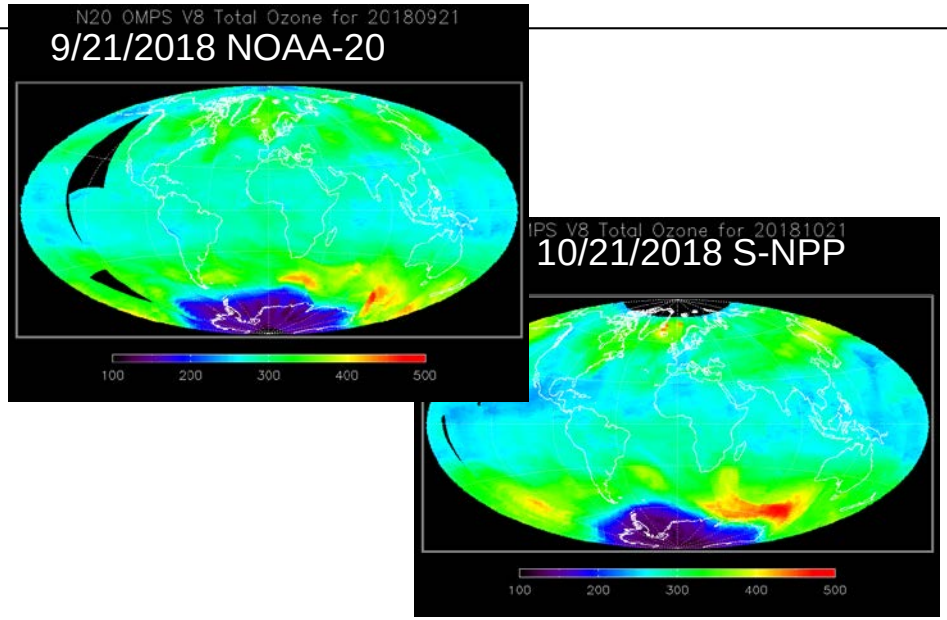
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule			X		# SDR Schedule

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 SDR on path to maturity will not be implemented at IDPS until 2019.

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



V8TOz for S-NPP and NOAA-20 OMPS Monitor the 2018 Antarctic Ozone Hole

GCOM-W1 Products

November, 2018

Accomplishments / Events:

- Preparing for JAXA NCWCP visit on December 10, 2018 to discuss AMSR3 and GCOM-C
- Testing continues on updated GAASP package that includes several algorithm upgrades
- Planning potential TIM with JAXA during IGARSS (Tokyo, July '19)
- Continued product cal/val; all products meeting requirements
- Poster on GCOM precipitation product presented at the 9th Workshop of the International Precipitation Working Group
- Continue to work with IA, NJO and OSGS to respond to JAXA requests for NOAA needs for AMSR-2 follow-on and orbit preference
- Participated in relevant project meetings/discussions with NJO, OSGS and OSPO

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.*

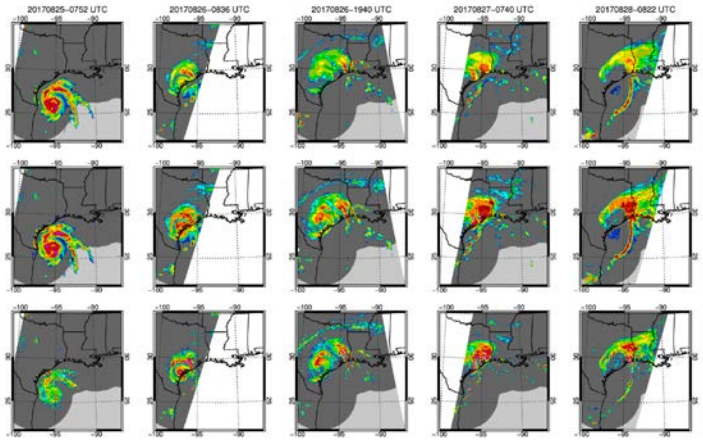
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Deliver updated TPW algorithm for integration into GAASP	Dec-18	Dec-18		
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:

Presentation at the CGMS/IPWG-9 Workshop (Seoul, Korea, 5-9 November 2018)



Patrick Meyers and Ralph Ferraro – "Updating the NOAA AMSR-2 Operational Precipitation Algorithm". Image above is a time series for Hurricane Michael showing the current algorithm (top); improved algorithm to be implemented (middle) and surface truth data (bottom).

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

November, 2018

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			

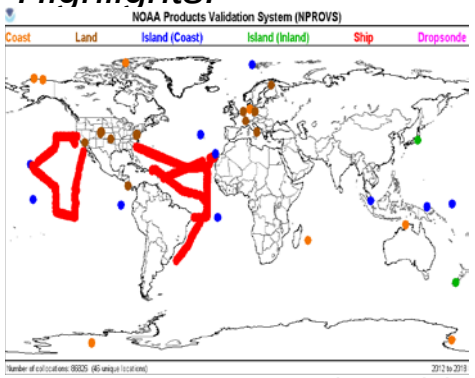
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

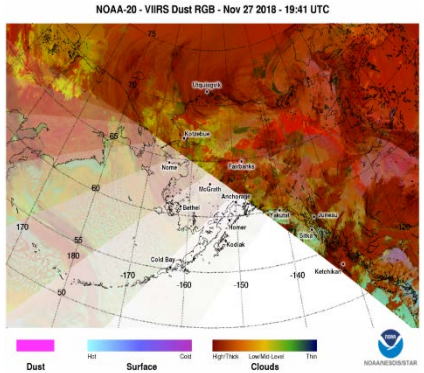
None

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