



NOAA JPSS Monthly Program Office

AMP/STAR FY20 TTA

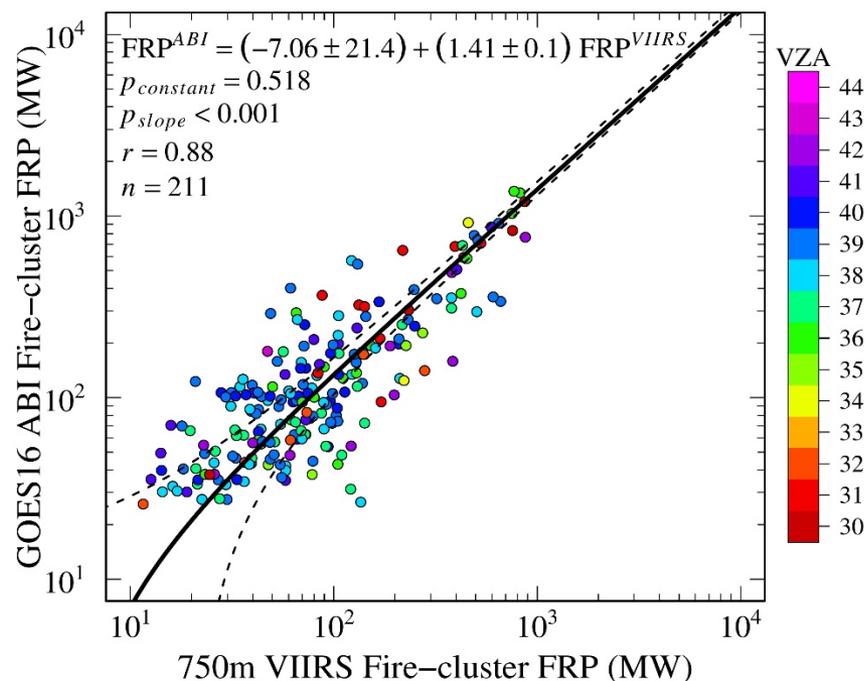
Lihang Zhou, DPMS Deputy
Bonnie Reed, Algorithm Sustainment Lead
Banghua Yan & Satya Kalluri, Acting AMP Deputies for Science
& JPSS STAR Program Managers

January 14, 2020

VIIRS assists with validation of GOES Fire Products

A paper entitled “A Preliminary Evaluation of GOES-16 Active Fire Product using Landsat-8 and VIIRS Active Fire Data, and Ground-based Prescribed Fire Records” has been accepted for publication by *Remote Sensing of the Environment*. This work is co-authored by Fangjun Li and Xiaoyang Zhang, Shobha Kondragunta (STAR), and Christopher Schmidt. The results show that the ABI fire detection probability and its omission and commission errors are highly related to fire size and temporal period. Among other findings, it was found that ABI was able to detect more ground-recorded fires than VIIRS due to more observation times. ABI, however, missed detecting many small fires, especially those with Fire Radiative Power (FRP) smaller than 35 MW.

Figure. Comparison of the contemporaneous ABI and 750 m VIIRS FRP estimates in the selected 211 fire clusters. The fire clusters were sensed by the two sensors within a ± 2.5 min observing time difference and are colored by ABI view zenith angle ranging from 30° to 44° . The black solid line is the best-fitted line and the black dashed lines show the lower and upper bound of the fitted line in a 95% confidence interval (CI). For the best-fitted model, the values after “ \pm ” are the 95% CIs of the constant and slope coefficients whose p-values are the p_{constant} and p_{slope} , respectively.



Highlights from the Science Teams

JSTAR scientist to Lead CEOS Atmospheric Composition – Virtual Constellation (AC-VC) White Paper on Aerosol Air Quality

JSTAR scientist Shobha Kondragunta will lead the effort to create a white paper on satellite-informed products for air quality associated with aerosols. This effort is motivated by the human health mortality goal and Global Burden of Disease report associated with particulate (aerosol) pollution. Under the umbrella of CEOS, space agencies across the globe are advancing the development and deployment of high temporal frequency air quality (ozone precursor trace gases and aerosol) missions. This white paper will address what additional work space agencies can do to better enable progress in measuring and monitoring. Especially relevant is the air quality need for near-surface, size-resolved, speciated mass concentration of aerosols. The white paper will focus on capabilities of existing/planned satellite instruments and other assets to come up with specific recommendations on investment opportunities related to research activities involving synergies of different observational technologies etc. The goal is not to advocate for new missions but how to glean information from existing/planned missions. The task has a target deliverable deadline in FY2021.

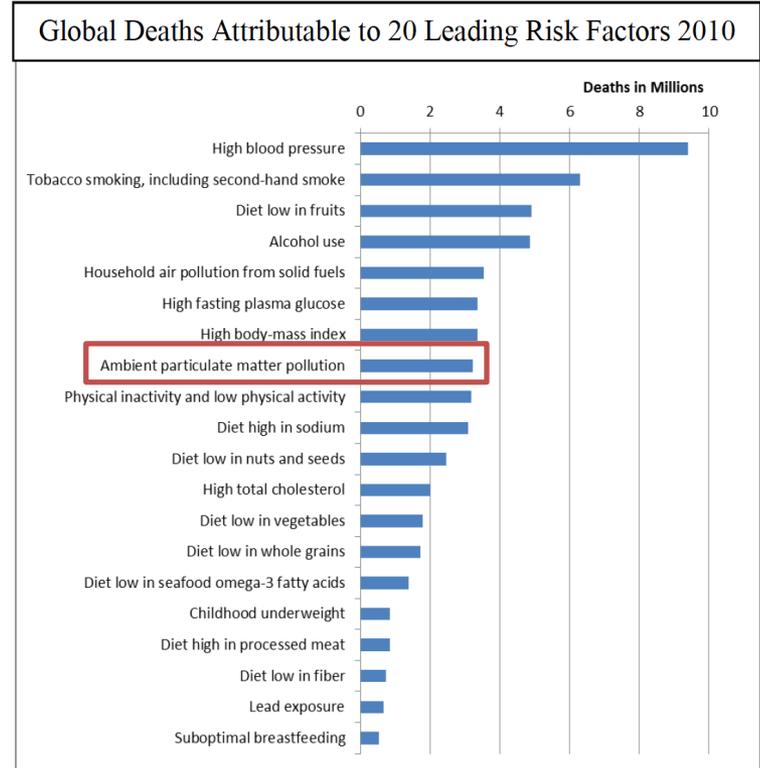


Figure. The number of deaths from various causes from the Global Burden of Disease report. Ambient air pollution is highlighted as a major source of deaths (image from [https://sph.umd.edu/sites/default/files/images/Screen%20shot%202013-01-02%20at%204_11_13%20PM\(1\).png](https://sph.umd.edu/sites/default/files/images/Screen%20shot%202013-01-02%20at%204_11_13%20PM(1).png))

Accomplishments

- Delivery Algorithm Packages (DAPs) - Mission Unique Products:
- DAPs - Enterprise Products:
 - VIIRS Active Fires Patch DAP (adds two new postprocessors, adds the production_site and production_environment global attributes, provides static and dynamic compile options) delivered to NDE on 11/1/2019. The emergency update was implemented in NDE operations on 12/5/2019
 - 12/2/2019: OMPS Limb Profiler SDR/EDR Operational Readiness Review (ORR)
 - OMPS EDR V8TOZ v3r1 patch DAP (with a new table for J01) delivered to NDE on 12/9/2019
 - OMPS EDR LFSO2 DAP v4r0 (some small updates that affect SNPP data) delivered to NDE on 12/17/2019
 - JRRPS patch DAP delivered to NDE on 12/27/2019. This delivery constitutes a patch to the March 2019 delivery of the NOAA JPSS Risk Reduction Product System (JRRPS) to NDE from STAR.
 - Patch delivery:
 - Clouds/ VolAsh/ Aerosols/ Snow/ Ice Conc/ VPW - v2r2
 - Ice Thickness/Age - v2r2
 - LST/LSA - v1r3
 - Reprocessing of AMSR-2 period of record completed
 - Complete SST records from NPP and N20, in two formats (L2P, swath projection; and L3U, 0.02° equal-grid uncollated), going back to 1 Feb 2012, and 5 Jan 2018, respectively have been generated at STAR and transitioned to PO.DAAC
 - VIIRS Global Annual Surface Type AST-2018 is now ready for users to download from STAR FTP site (<https://www.star.nesdis.noaa.gov/jpss/>)

Accomplishments – JPSS Cal Val Supports

- NOAA-20/S-NPP Operational Calibration Support:
 - S-NPP Weekly OMPS TC/NP Dark Table Updates: 12/03/19, 12/11/19, 12/17/19, 12/30/19
 - NOAA-20 Weekly OMPS TC/NP Dark Table Updates: 12/03/19, 12/11/19, 12/17/19, 12/30/19
 - S-NPP Bi-Weekly OMPS NP Wavelength & Solar Flux Update: 12/03/19, 12/17/19,
12/30/19
 - NOAA-20 Bi-Weekly OMPS NP Wavelength & Solar Flux Update: 12/11/19
 - S-NPP Monthly VIIRS StrayLight LUTs Update: 12/10/19
 - NOAA-20 Monthly VIIRS StrayLight LUTs Update: 12/10/19
 - S-NPP Monthly VIIRS LUT Update of DNB Offsets and Gains: 12/10/19
 - NOAA-20 Monthly VIIRS LUT Update of DNB Offsets and Gains: 12/10/19

Upcoming Cal/Val Maturity Reviews

- January/February, 2020 Maturity Review (2/6/2020):
 - Full Validated Maturity:
Active Fires (M-Band, and I-Band)
 - Full Validated Maturity:
CrIS S-NPP side-2 Validated Maturity Review

- March/April, 2020 Maturity Review
 - Provisional Maturity:
NUCAPS CO2 product (S-NPP & NOAA-20)
 - Full Validated Maturity:
NUCAPS CH4 product (S-NPP & NOAA-20)
Green Vegetation Fraction
Vegetation Index
OMPS NP SDR
Snow Cover (Binary Map & Snow Cover Fraction)
Surface Reflectance
OMPS NP Ozone EDR (V8Pro)

- June, 2020 Maturity Review:
 - Full Validated Maturity:
Ocean Color

- JSTAR Code/LUT/Product Deliveries:

DAP to DPES:

NOAA-20 Algorithm DAP to NDE/CoastWatch:

- Mar-20: I-band Active Fires – Final DAP
- Mar-20: Vegetation Health – Final DAP
- Nov-20: Ocean Color – Final DAP

FY20 STAR JPSS Milestones

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Algorithm Updates DAPs				
OMPS DAP: Remove VIIRS SnowIce and QST tile dependency (ADR8550)	Oct-19	Oct-19	10/28/19	
OMPS: J2 pre-launch sensor characterization report	Dec-19	Feb-20		Need NASA sharepoint access permission
ATMS: J2 pre-launch sensor characterization report	May-20	May-20		
CrIS: J2 pre-launch sensor characterization report	May-20	May-20		
J2 pre-launch Algorithm Updates Review - SDRs and Imagery	Jun-20	Jun-20		
J2 pre-launch Algorithms/PCT/LUT packages - SDRs and Imagery	Aug-20	Aug-20		
OMPS: High resolution SDR implementation (17km x 17km OMPS TC)	Aug-20	Aug-20		
Imagery: All 16 M-bands as Imagery EDRs	Aug-20	Aug-20		
N20 NUCAPS final DAP to NDE	Nov-19	Nov-19	11/01/19	
N20 Vegetation Health final DAP to NDE	Mar-20	Mar-20		
I-band Active Fires DAP to NDE	Mar-20	Mar-20		
J2 pre-launch Algorithm Updates Review - EDRs	Aug-20	Aug-20		
Initial J2-ready EDR DAPs (include NPP/N20 updates)	Sep-20	Sep-20		
AST-2019 (VIIRS Annual Surface Type)	Sep-20	Sep-20		



FY20 STAR JPSS Milestones

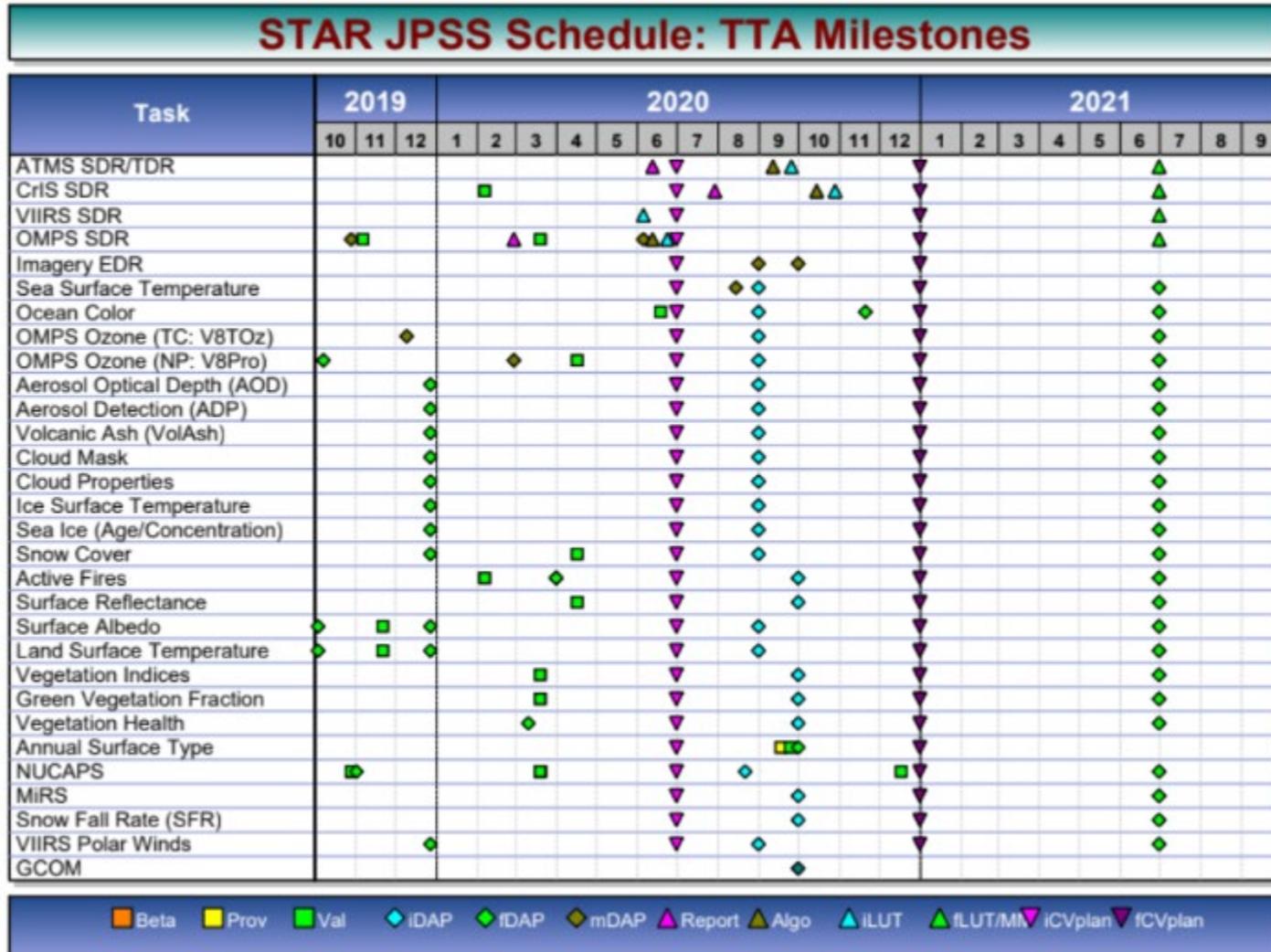
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Algorithm Cal/Val				
J2 Cal Val Plans - Draft Delivery (all SDR/EDR products)	Jun-20	Jun-20		
N20 NUCAPS Full Validated Maturity (all NUCAPS products except CH4 & CO2)	Oct-19	Oct-19	10/28/19	
N20 Land Surface Temperature Full Validated Maturity	Nov-19	Nov-19	11/21/19	
N20 Surface Albedo Full Validated Maturity	Nov-19	Nov-19	11/21/19	
N20 OMPS NP SDR Full Validated Maturity	Jan-20	Mar-20		Sci. concern
N20 OMPS NP EDR (V8Pro) Full Validated Maturity	Jan-20	Apr-20		Sci. concern
N20 M-band and I-Band Active Fires Full Validated Maturity	Jan-20	Feb-20		
N20 Green Vegetation Fraction Full Validated Maturity	Feb-20	Mar-20		
N20 Vegetation Index Full Validated Maturity	Feb-20	Mar-20		
NUCAPS CH4 Full Validated Maturity (N20 & NPP)	Feb-20	Mar-20		
NPP side-2 Crls SDR Full Validated Maturity	Feb-20	Feb-20		
N20 Surface reflectance Full Validated Maturity	Apr-20	Apr-20		
N20 Snow Cover Full Validated Maturity	Apr-20	Apr-20		
N20 Ocean Color Full Validated Maturity	Jun-20	Jun-20		
N20 Surface Type Full Validated Maturity	Sep-20	Sep-20		



FY20 STAR JPSS Milestones

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Operational/Program Support				
S-NPP: Weekly OMPS TC/NP Dark Table Updates	Weekly	Weekly	10/01/19, 10/08/19, 10/16/19, 10/22/19, 10/29/19, 11/05/19, 11/13/19, 11/19/19, 11/26/19, 12/03/19, 12/11/19, 12/17/19, 12/30/19	
S-NPP: Bi-Weekly OMPS NP Wavelength & Solar Flux	Bi-Weekly	Bi-Weekly	10/08/19, 10/22/19, 11/05/19, 11/19/19, 12/03/19, 12/17/19, 12/30/19	
S-NPP: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	10/08/19, 11/05/19, 12/10/19	
S-NPP: Monthly VIIRS Stray Light LUT Update	Monthly	Monthly	10/08/19, 11/06/19, 12/10/19	Re-use LUT after 12 months. The 12 th NPP LUT will be Apr-20
NOAA-20: Weekly OMPS TC/NP Dark Table Updates	Weekly	Weekly	10/01/19, 10/08/19, 10/16/19, 10/22/19, 10/29/19, 11/05/19, 11/13/19, 11/19/19, 11/26/19, 12/03/19, 12/11/19, 12/17/19, 12/30/19	
NOAA-20: Bi-Weekly OMPS NP Wavelength & Solar Flux	Bi-Weekly	Bi-Weekly	10/01/19, 10/16/19, 10/29/19, 11/13/19, 11/26/19, 12/11/19	
NOAA-20: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	10/08/19, 11/05/19, 12/10/19	
NOAA-20: Monthly VIIRS Stray Light LUT Update	Monthly	Monthly	10/08/19, 11/06/19, 12/10/19	Re-use LUT after 12 months. The 12 th N20 LUT will be Dec-19
Monthly quad-chart report (all SDR/EDR products)	Monthly	Monthly	10/31/19, 11/30/19, 12/31/19	
IDPS Mx build SOL and I&T deploy regression verification review (bl2.1-Mx8/bl2.2-Mx0/1)	Nov-19 Mar-20 Jun-20	Nov-19 Mar-20 Jun-20	Mx8 I&T report: 11/13/19	
IDPS Cloud Implementation Verification (Based on Nov 2020 TTO)	Sep-20	Sep-20		

STAR JPSS Schedule





FY20 JPSS PSDI Milestones

Product Name	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
S-NPP and N-20 Flood Mapping Product				
-- CDR	Dec-19	Dec-19	Dec 2019	Completed
-- TRR	Apr-20	Apr-20		
-- SCR	Jul-20	Jul-20		
-- ARR	Oct-20	Oct-20		
-- ORR	Jan-21	Jan-21		
-- Operations	Feb-21	Feb-21		
VIIRS I-Band Active Fires Product				
-- SCR	Jan-20	Jan-20	Jan 2020	Completed
-- ARR/AMR	Apr-20	Feb-20	Feb 2020	Completed
-- ORR	Aug-20	Aug-20		
-- Operations	Sep-20	Sep-20		



Prior Year Funded JPSS PSDI Milestones

Product Name	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
S-NPP: OMPS Limb Profiler Products				
-- EDR and SDR ORR	Dec-16	--	12/02/2019	Completed
-- Operations	Mar-17	May-20		
NOAA-20: OMPS Ozone: V8Pro				
-- ORR	Jul-18	Mar-20		Still Investigating why OMPS NP SDRs have too large uncertainties between the S-NPP and NOAA-20 results
-- Operations	Aug-18	Apr-20		
NOAA-20: NUCAPS including CrIS OLR				
-- CDR	Oct-16	--	10/27/16	Completed
-- SCR	Aug-18	--	01/25/19	Completed
-- Operations (Temp/H2O profiles)		--	3/7/2017	Completed
-- ARR	Sep-18	--	10/28/19	Completed
-- ORR	Jun-19	Apr-20		Has not integrated to NDE I&T yet
-- Operations	Jul-19	Apr-20		Dates relate to CO2 and CH4 components
NOAA-20: Enterprise Processing System: Global Gridding LST, and LSA				
-- CDR	Mar-18	--	10/22/18	Completed
-- TRR	Jul-18	--	3/12/2019	Completed
-- SCR	Sep-18	--	8/30/2019	Completed
-- ARR	Dec-18	Sep-19	9/24/2019	Completed
-- ORR	Mar-19	Feb-20		
-- Operations	Jun-19	Feb-20		



Prior Year Funded JPSS PSDI Milestones

Product Name	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20: Ocean Color				
-- CDR	Oct-16	-	10/27/2016	Completed
-- SCR	Jan-19			Completed
-- ARR	Mar-19	11/2018	11/2018	Completed
-- SRR	Apr-19	--		Waived
-- ORR	Apr-19	--		Waived
-- Operations	Jun-19	Jun-20		
NOAA-20: Microwave Tropical Cyclone Products				
-- CDR	Oct-16	-	10/27/2016	Completed
-- SCR	Apr-19	--	4/2/19	Completed
-- ARR	Oct-19	Mar-20		
-- ORR	Dec-19	Apr-20		
-- Operations	Feb-20	May-20		
NOAA-20: Blended Products Blended Ozone				
-- SCR	Aug-17	NA		SCR not required; already running in OPS
-- ORR	Jul-18	Apr-20		
-- Operations	Oct-18	May-20		
NOAA-20: Blended Products Blended Snow and Ice				
-- SCR	Aug-18	--	7/9/2019	Completed
-- ORR	May-19	--	8/28/19	Completed
-- Operations	Jun-19	--	9/18/19	Completed
Microwave and Diurnal Corrected Blended SST w/ AMSR-2				
-- ORR	Nov-16	ON HOLD		
-- Operations	Nov-16	ON HOLD		



Prior Year Funded JPSS PSDI Milestones

Product Name	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Enhanced TOAST with S-NPP OMPS Limb Profiles				
-- CDR	Jan-17	NA		No longer required
-- SCR	Apr-17	NA		No longer required
-- ORR	May-17	May-20		
-- Operations	Jun-17	Jun-20		
Upgrade to the Multi-platform Satellite Tropical Cyclone Surface Wind Analysis Product				
-- PDR/CDR	Dec-17	--	1/26/2018	Completed
-- UTRR	Apr-18	--		Waived
-- SCR	May-18	Feb-20	1/24/2020	Completed
-- ARR	Oct-18	Mar-20		Integration time is longer than expected
-- ORR	Jan-19	Apr-20		
-- Operations	May-19	May-20		
Upgrades to the ADT Product				
-- PDR	Jul-17	--	8/23/2017	Completed
-- CDR	Jul-17	--	8/23/2017	Completed
-- SCR	Jun-18	--	2/25/2019	Completed
-- ARR	Oct-18	Feb-20		Longer integration time than expected
-- ORR	Apr-19	Apr-20		
-- Operations	Jun-19	Jun-20		
Product Monitoring Phase IV (JPSS RR, VIIRS AF)				
-- SRR/ORR	Jun-18	Jan-20	1/29/2020	Completed
-- Operations	Jul-18	Feb-20		
Product Monitoring VI (NDE J1)				
-- CDR	Dec-16	--	04/17/18	Completed
-- TRR	Sep-17	--	5/14/2019	Completed
-- SCR	Jun-19	--	Waived	Waived
-- ORR	Aug-19	Jan-20	1/29/2020	Completed
-- Operations	Sep-19	Feb-20		



JPSS Risk Summary

Top Risks



Status as of: 02/19/2020

Rank Risk ID	Summary	LxC Trend	Aprch	Status
1 AMP-19-002	Proxy data delay due to J2 10Hz Sampling Freq	4x3 ↔	W	02/07/20: Waiting on Softbench data to see if J2 test data is making APID 11 at 10HZ.
2 GJ-331	ATMS & CrIS SDR J2 Algorithm Update Code Delivery	2x4 ↔	W	02/12/2020: Continue to watch as timeline of events unfold.
Rank Risk ID	Summary	LxC Trend	Aprch	Status
3 AMP-19-003	Some IDPS and STAR algorithms cannot use APIDs with 10Hz sample freq	3x2 ↔	M	02/07/20: No updates
4 AMP-18-003	J2 APID Changes to Accommodate New S/C Bus	2x2 ↔	W	02/07/20: CCR 4439 approved and waiting incorporation. CCR 4892 ? needs approval and incorporation
5 AMP-18-008	Data Product Requirements for OMPS-Limb	3x1 ↔	M	2/19/2020: Promotion to NDE operations is scheduled for May, 2020
6 AMP-19-001	Algorithm testing & delivery impacts due to lag between IDPS and G-ADA moving to the Cloud	2x1 ↔	W	2/19/2020: After the successful cloud CDR held in Jan 2020, we would expect that the risk is lower and should be closed when the IDPS and G-ADA implemented in Cloud which is scheduled to be Dec 2020.
7 AMP-18-006	Impact on Testing Ability Due to Major Build Upgrades	1x1 ↔	W	2/5/2020: No change

L I K E L I H O O D	5						
	4			1			
	3	5	3				
	2	6	4		2		
	1	7					
			1	2	3	4	5
			CONSEQUENCES				

Criticality
HIGH
MED
LOW

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

LxC Trend
↓ – Decreasing (Improving)
↑ – Increasing (Worsening)
↔ – Unchanged
NEW – Added this month



JPSS Top Risks



Status as of: 02/19/2020

Rank	Risk ID	Risk Statement	Approach	Status
<div data-bbox="40 282 117 332" style="background-color: yellow; border: 1px solid black; padding: 2px; display: inline-block;">1</div> <p data-bbox="150 297 469 344">Proxy data delay due to J2 10Hz Sampling Freq</p> <div data-bbox="54 354 104 386" style="text-align: center;">↔</div>	AMP-19-002	<p data-bbox="685 287 1097 382">Given that: APID 11 (S/C Attitude and Ephemeris) and 30 (S/C Telemetry) sampling frequencies are at 10Hz on JPSS-2</p> <p data-bbox="685 415 1097 486">There is a possibility that: It will affect and delay the process of getting/producing simulated J2 data (proxy data) during JCT.</p> <p data-bbox="685 515 1097 715">Resulting in: Test data production during JCT will be more difficult. "Instead of using NPP and J01 Proxy, Attitude and Ephemeris would be manufactured by using STK. To compensate for the sample freq at 10Hz, the APID 11 packet will need to be converted to 10Hz causing unwanted delays.</p>	Watch	<p data-bbox="1358 287 1883 329">02/07/20: Waiting on Softbench data to see if J2 test data is making APID 11 at 10HZ.</p> <p data-bbox="1358 358 1883 401">12/18/19: Softbench version 5 currently being tested, expected delivery end of January 2020.</p> <p data-bbox="1358 429 1883 601">11/06/19: Proxy data delay due to J2 10Hz Sampling Frequency Softbench issues for JPSS-2 APID 11 are due to time issues. This risk remains until the next version of softbench is available and the JPSS-2 APID 11 is analyzed. 17 day test data currently uses JPSS-1 APID 11 data, repeated 1 HZ samples to create 10 HZ (all samples the same).</p> <p data-bbox="1358 629 1883 701">9/9/19: Data from the simulator has been received and bit bused by the SEI&T team. This includes the J2 APID 11 and J2 APID 30 and APID 37.</p>

Risk Owner: Tomi Ibronke



JPSS Top Risks



Status as of: 02/19/2020

Rank	Risk ID	Risk Statement	Approach	Status
<p>2</p> <p>ATMS & CrIS SDR J2 Algorithm Update Code Delivery</p> <p>↔</p>	<p>GJ-331</p>	<p>Given that: ATMS & CrIS TVAC and PSR have been delayed from original schedule which was:</p> <ol style="list-style-type: none"> 1.ATMS TVAC: July-2019 2.ATMS PSR: Sept 2019 3.CrIS TVAC: July 2019 4.CrIS PSR: Sept 2019 5.JCT3: Feb 2021 <p>There is a possibility that: ATMS & CrIS SDR JPSS-2 algorithm and PCT update package can not be delivered as scheduled</p> <p>Resulting in: Resulting in: the ATMS & CrIS JPSS-2 DAPs can not be implemented in IDPS build before JCT3 (the first E2E test event, IDPS build Code-cut-off date is about 6-7 months before TTO)</p>	<p>Watch</p>	<p>02/12/2020: Continue to watch as timeline of events unfold.</p> <p>New Schedule:</p> <ol style="list-style-type: none"> 1.ATMS TVAC: Completed Dec 2019 2.ATMS PSR: Mar-2020 3.CrIS TVAC: Jan-2020 4.CrIS PSR: Apr-2020 5.ATMS & CrIS JPSS-2 DAPS delivery: Sep 2020 & Oct 2020 (PSR+6 months) 6.JCT3: May-2021 <p>12/05/2019: Continue to watch as timeline of events unfold.</p> <p style="padding-left: 40px;">Date of JCT3 is now 5/26/2020.</p> <p>10/16/2019: New schedule:</p> <ol style="list-style-type: none"> 1.ATMS TVAC: Oct-2019 2.ATMS PSR: Feb-2020 3.CrIS TVAC: Jan-2020 4.CrIS PSR: Feb-2020 5.ATMS & CrIS JPSS-2 DAPs delivery: Aug-2020 6.JCT3: Feb-2021 <p>2/12/2020</p> <p>Continue to watch as timeline of events unfold.</p> <p>New Schedule:</p> <ol style="list-style-type: none"> 1.ATMS TVAC: Completed Dec 2019 2.ATMS PSR: Mar-2020 3.CrIS TVAC: Jan-2020 4.CrIS PSR: Apr-2020 5.ATMS & CrIS JPSS-2 DAPS delivery: Sep 2020 & Oct 2020 (PSR+6 months) 6.JCT3: May-2021

Risk Owner: Tess Valenzuela



JPSS Top Risks



Status as of: 02/19/2020

Rank	Risk ID	Risk Statement	Approach	Status
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; background-color: #4CAF50; color: white; padding: 2px 5px; margin-right: 5px;">3</div> <div> <p>Some IDPS and STAR algorithms cannot use APIDs with 10Hz sample freq</p> </div> </div>	AMP-19-003	<p>Given that: APID 11 (S/C Attitude and Ephemeris) and 30 (S/C Telemetry) sampling frequencies are at 10Hz on JPSS-2</p> <p>There is a possibility that: Some IDPS and STAR algorithms will not be able to use any science products that has APID 11 and 30 or any APIDs with a sampling frequency of 10Hz</p> <p>Resulting in: Delays since IDPS geolocation algorithms cannot use 10Hz APIDs. During JCT3 IDPS has to geolocate J2 RDRs with J2 S/C Diary and if the geolocation algorithm is not compatible with the 10hz freq, it will affect IDPS's ability to geolocate J2 RDRs. STAR needs to consider the effect 10Hz APIDs will have on their GEO and sensor product algorithms.</p>	Mitigate	<p>02/07/20: No updates</p> <p>12/18/19: IDPS Version 2.3 will include geolocation change.</p> <p>11/06/19: Geolocation algorithm to use only 1 sample of APID 11 10HZ. The JPSS-2 test data had to utilize J1 APID 11, but converted to 10 HZ (due to time issues in softbench for J2 AP11 thus far).Raytheon will hold the Detailed design review for the JPSS-2 S/C Attitude and Ephemeris RDR on November 7th. 10hz APID11 (xDR probably won't use all samples; decimate to one sample)</p> <p>9/9/19: The TIM to discuss the 10Hz APID 11 was held between IDPS, STAR and Raytheon personnel. It was determined that J2 simulation data is needed to make a concrete decision on the correct action to take. Another TIM will be planned for the first quarter of 2020. IDPS Geolocation algorithm is planning to use only 1 sample of the 10/Hz APID.</p>

Risk Owner: Tomi Ibronke



JPSS Top Risks



Status as of: 02/19/2020

Rank	Risk ID	Risk Statement	Approach	Status
<div style="border: 1px solid black; padding: 2px; display: inline-block; background-color: #4CAF50; color: white; width: 20px; height: 20px; text-align: center; line-height: 20px;">4</div> <p>J2 APID Changes to Accommodate New S/C Bus</p> 	AMP-18-003	<p>Given that: J2 has a new S/C Bus manufacturer and some new APIDs compared to J1 and S-NPP</p> <p>There is a possibility that: the SDR algorithms will need to be updated to accommodate new RDR format/structure</p> <p>Resulting in: additional unplanned work for Ground.</p>	Watch	<p>02/07/20: CCR 4439 approved and waiting incorporation. CCR 4892 ? needs approval and incorporation</p> <p>12/18/19: CCR 4439 has been incorporation. Latest APID to VCID released Dec 4th, 2019.</p> <p>11/06/19: J2 APID Changes to Accommodate New S/C Bus Received and incorporated APID changes for JPSS-2 in CCR 4439 approved and being incorporated. No APID changes for JPSS-2 ATMS, CrIS, OMPS NP, OMPS TC, and VIIRS ? according to latest JPSS-2 APID to VCID mapping (June 25, 2019). These JPSS-2 products are included in CCR 4759. Very unlikely that there will be any further changes to the JPSS-2 APID to VCID mapping that will affect JPSS-2 data production.</p> <p>09/09/19: J2 GPS APIDs are currently not included in the J2 S/C TLM RDR, and all other Virtual Channel 0 APIDs are included in the S/C TLM RDR. Investigating the size of APID 133 and APID 144 to determine true size of J2 S/C TLM RDR (30 bytes vs. 38 bytes).</p>

Risk Owner: Tomi Ibrionke



JPSS Top Risks



Status as of: 02/19/2020

Rank	Risk ID	Risk Statement	Approach	Status
<p> Data Product Requirements for OMPS-Limb</p> <p> Expected Closure: 10/2020</p>	AMP-18-008	<p>Given that: There are no JPSS (or NOAA) data product requirements for OMPS-L</p> <p>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</p> <p>Resulting in: Additional funding needed for delivering the algorithm, product generation/distribution/archive, and calval of the products.</p>	Mitigate	<p>2/19/2020: Promotion to NDE operations is scheduled for May, 2020</p> <p>12/05/2019: An OMPS Operations Readiness Review (ORR) was conducted on Dec. 2, 2019. This is the last major review before it goes into operations. Will keep risk open until the algorithm is promoted from NDE I&T to Operations.</p> <p>9/23/2019: The OSPO PAL and STAR PI will schedule the ORR in Oct. 2019. The science team has been busy with NOAA-20 OMPS cal val during September and now the ORR for OMPS-LP is moved to October 2019.</p> <p>8/8/2019: OSPO PAL and STAR PI are working on Operational Readiness Review (ORR) slides now and planning to hold ORR in September 2019.</p> <p>7/12/2019: No change. There is still some issues with ancillary data with running OMPS-L on NDE I&T.</p> <p>5/1/2019: No change</p>

Risk Owner: Lihang Zhou



JPSS Top Risks



Status as of: 02/19/2020

Rank	Risk ID	Risk Statement	Approach	Status
<div style="display: flex; align-items: flex-start;"> <div style="border: 1px solid black; background-color: #c8e6c9; padding: 2px; margin-right: 5px; text-align: center; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;">6</div> <div style="margin-bottom: 5px;"> </div> <div> <p>Algorithm testing & delivery impacts due to lag between IDPS and G-ADA moving to the Cloud</p> <p>Expected Closure: 12/2020</p> </div> </div>	AMP-19-001	<p>Given that: IDPS will be in the cloud prior to G-ADA being in the cloud,</p> <p>There is a possibility that: algorithm change testing and implementation may take longer</p> <p>Resulting in: delays to implementation of algorithm changes.</p>	Watch	<p>2/19/2020: After the successful cloud CDR held in Jan 2020, we would expect that the risk is lower and should be closed when the IDPS and G-ADA implemented in Cloud which is scheduled to be Dec 2020.</p> <p>12/05/2019: Lihang will look into whether this risk should be transferred to DPMS</p> <p>8/8/2019: Suggest to transfer this risk to be under DPMS risk</p> <p>7/12/2019: No update. AMP and STAR teams have been engaged with the IPR reviews and provided feedback/inputs related to the algorithms/cal val.</p> <p>5/1/2019: No Update</p> <p>3/6/19: Based on limited understanding from Ground Project as of February 2019, we believe that there is a real possibility that IDPS will be migrated to the Cloud prior to G-ADA being available in the Cloud (with proper training, etc).</p>

Risk Owner: Lihang Zhou



JPSS Top Risks



Status as of: 02/19/2020

Rank	Risk ID	Risk Statement	Approach	Status
 Impact on Testing Ability Due to Major Build Upgrades 	AMP-18-006	<p>Given that: DPMS has had issues installing major Block/Build updates in the past on G-ADA</p> <p>There is a possibility that: this could occur again in the future (Block 2.2)</p> <p>Resulting in: delays to testing of instrument code and table updates.</p>	Watch	<p>2/5/2020: No change</p> <p>12/5/2019: Monitor until Block 2.2 MX0 is ready for operations on May 11,2020.</p> <p>11/7/2019: No change</p> <p>10/05/2019: No change. Continue to watch until Block 2.2</p> <p>9/5/2019: No issues. Continue to Watch</p> <p>7/11/2019: No issues. Continue to Watch</p> <p>3/6/19: Risk Owner changed from Cole to Jeff.</p>

Risk Owner: Jeff Weinrich

Color code:

Green:

Completed Milestones

Gray:

Non-FY20 Milestones

Accomplishments / Events:

- Kept analyzing JPSS-2 ATMS TVAC data and discussed the potential improvements in JPSS-3 ATMS TVAC testing procedure
- Prepared comprehensive JPSS-2 ATMS TVAC data analysis results report
- Generated ATMS 5.2/2.2 degree to 1.1 degree footprinting size resampling coefficients and produced sample TDR/SDR data in order to explore the potential application improvement in hurricane product retrieval near scan edge
- Kept testing lunar intrusion correction algorithm to fix correction error in operational mode

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			

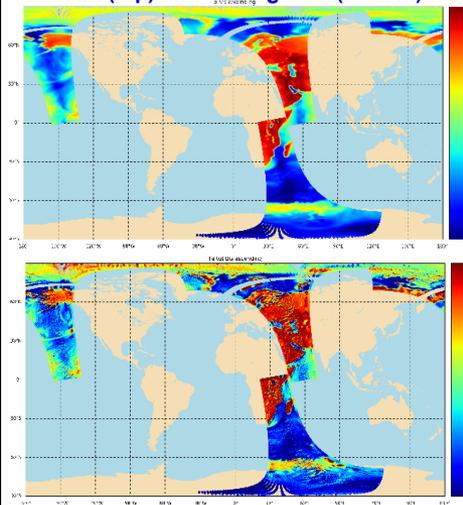
- Project has completed.
- Project is within budget, scope and on schedule.
- Project has deviated slightly from the plan but should recover.
- Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

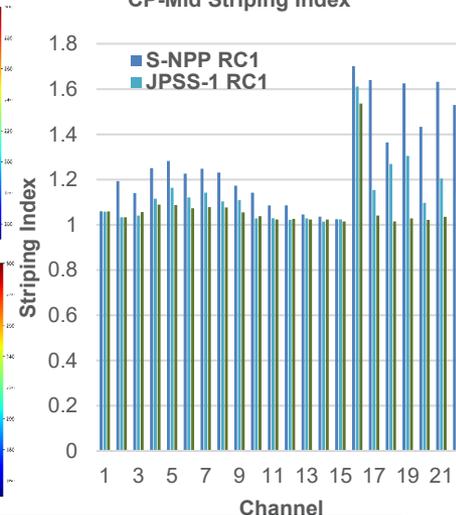
None

Highlights:

ATMS Channel 1 Resampling Comparison between original 5.2 deg data (top) and 1.1 deg data (bottom)



S-NPP/JPSS-1/JPSS-2 ATMS TVAC CP-Mid Striping Index



Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test data (TVAC) review/analyze	Feb-20	Feb-20		TVAC: Oct-19
J2 pre-launch evaluation tools development	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Pre-launch sensor characterization report	May-20	May-20		PSR + 3m
Algorithm update based on pre-launch test data and other changes (e.g. APID, sampling frequency, FSW, and RDR)	Aug-20	Aug-20		PSR + 6m
PCT update based on pre-launch test data and other changes	Aug-20	Aug-20		PSR + 6m
Algorithm Updates Review	Jun-20	Jun-20		
J2 SDR data (based on TVAC) available for EDRs	Apr-20	Apr-20		
ATMS TDR/SDR discrepancy between ADL and IDPS over lunar intrusion regions (ADR 9035)	Aug-20	Aug-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Annual ATMS TDR/SDR performance report	Feb-20	Feb-20		
Verification of cloud implementation	Sep-20	Sep-20		
IDPS Mx build I&T ATMS deploy regression support:				
BL2.1 Mx 8 I&T ATMS data review/checkout	Nov-19	Nov-19	11/13/19	
BL2.2 Mx 0 I&T ATMS data review/checkout	Apr-20	Apr-20		
BL2.2 Mx 1 I&T ATMS data review/checkout	Jul-20	Jul-20		

Accomplishments / Events:

- A study is being conducted investigating strategies to mitigate the effects of potential malfunction of the J2/CrIS neon lamp near the end of the instrument mission. One such strategy involves predicting the metrology laser wavelength using real-time physical temperatures of the laser diode, and potentially the Optical Mechanical Assembly (OMA) (Figure 1). Using a linear regression model of the correlation between these two parameters and using historical SNPP/CrIS and J0/CrIS data, this method was able to predict the laser wavelength with an accuracy within 0.5 ppm of the measured value when error correction is implemented. A method to predict the laser wavelength using the absolute spectral accuracy method based on the radiative transfer model is also being investigated.
- A solution of how to work around an issue with the SDR generator software has successfully been found and implemented using a previous version of the SDR generator to create the necessary configuration files for TVAC data processing. This has allowed for the successful processing of J2 TVAC noise data for the LWIR band (Figure 2). This has extended the CrIS SDR's team ability to review and analyze the J2 pre-launch test data.
- Progress has been made on computing the instrument line shape parameters using plateau flight low (PFL) side2 longwave CO2 data from TVAC testing data (Figure 3). Using these data, the ILS geometry can be derived with regard to the center FOV5.

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.

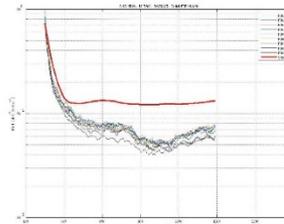
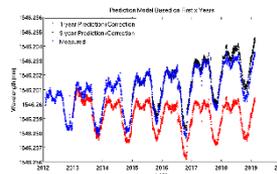
Issues/Risks:

1. Harris reported that during J2/CrIS neon lamp life testing results have indicated its potential malfunction near the end of the instrument mission. If neon lamp failure is observed, degradation quality of the CrIS SDR product is expected. Prediction of the metrology laser is needed if loss of J2/CrIS neon lamp occurs. A comprehensive study as well as corresponding planning of tasks and resources is in progress by CrIS SDR Team to mitigate the impact of a potential neon lamp malfunction.

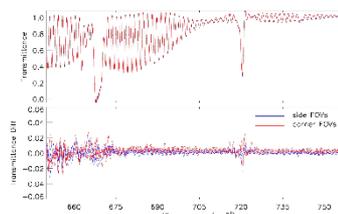
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NPP (side-2) Validated Maturity	Feb-20	Feb-20		Provisional + 6m
J2 pre-launch test data (TVAC) review/analyze	Apr-20	Apr-20		TVAC: Jan-20
J2 pre-launch evaluation tools development	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Pre-launch sensor characterization report	May-20	May-20		PSR + 3m
Algorithm update based on pre-launch test data and other changes (e.g. APID, sampling frequency, FSW, and RDR)	Aug-20	Aug-20		PSR + 6m
PCT update based on pre-launch test data and other changes	Aug-20	Aug-20		PSR + 6m
Algorithm Updates Review	Jun-20	Jun-20		
J2 SDR data (based on TVAC) available for EDRs	Apr-20	Apr-20		
Update Quality flag and threshold for Spike Detection algorithm (ADR8820)	Aug-20	Aug-20		
Optimize/update FCE detection and correction algorithm	Aug-20	Aug-20		
Turn off Truncated Spectrum CrIS Data (ADR8761)	Sep-20	Sep-20		OSPO & Users
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Annual CrIS SDR performance report	Feb-20	Feb-20		
Verification of cloud implementation	Sep-20	Sep-20		
IDPS Mx build I&T deploy regression support:				
BL2.1 Mx 8 I&T CrIS data review/checkout	Nov-19	Nov-19	11/12/19	
BL2.2 Mx 0 I&T CrIS data review/checkout	Apr-20	Apr-20		
BL2.2 Mx 1 I&T CrIS data review/checkout	Jul-20	Jul-20		

Highlights:

- (1) To simulate a failure scenario, took the first 1 year (and 3 years) of SNPP/CrIS data and created a model to predict the laser wavelength over the entire mission lifetime (in blue). The 1-year prediction model can provide the laser wavelength 6 years later with an accuracy of <2 ppm error, while the 3 year model can provide the laser wavelength after 4 years with an accuracy that has less than 0.5 ppm error.



- (2) J2/CrIS TVAC noise data for the LWIR band processed using the Harris SDR generator software that has been successfully implemented.



- (3) Side2 Longwave CO2 transmittance for J2 TVAC PFL data. Top: transmittance from center FOV5, transmittance after self-apodization correction for other FOVs. Bottom: transmittance difference between non-center FOVs and FOV5

Accomplishments / Events:

- Delivered for deployment in IDPS operations updated NOAA-20 and S-NPP DNB offset and gain ratio LUTs generated using new moon calibration data from Dec. 26, 2019
- Delivered for deployment in IDPS operations updated NOAA-20 and S-NPP VIIRS DNB stray light correction LUTs generated from the Nov. 25-27, 2019 data as well as the S-NPP LUT generated from the Dec. 25-26, 2019 data
- Analyzed VIIRS lunar measurements collected on Dec. 7, 2019 to derive the lunar F-factors and to compare them with the solar calibration F-factors; coordinated and verified predictions for the NOAA-20 VIIRS lunar calibration on Jan. 6, 2020
- Deployed in a test ADL environment the VIIRS SDR geolocation code correction (VIGMU) that was prepared by NASA VCST and assessed effects of the code change on the geolocation products, and then submitted an ADR to request its deployment in IDPS
- After positive assessment of the TEB F factors extracted during ADL processing of a simulated JPSS-2 VIIRS SDR granule acquired in a nominal environment, proceeded with extended testing of the initial launch-ready LUTs in preparation for their submittal to IDPS
- Corrected the RDR Reader source code to allow for extracting calibration view data from the VIIRS measurements acquired in the diagnostic mode during pre-launch testing
- Continued RSB calibration monitoring using the SNO, SNO-x, DCC, and PICS approaches

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			

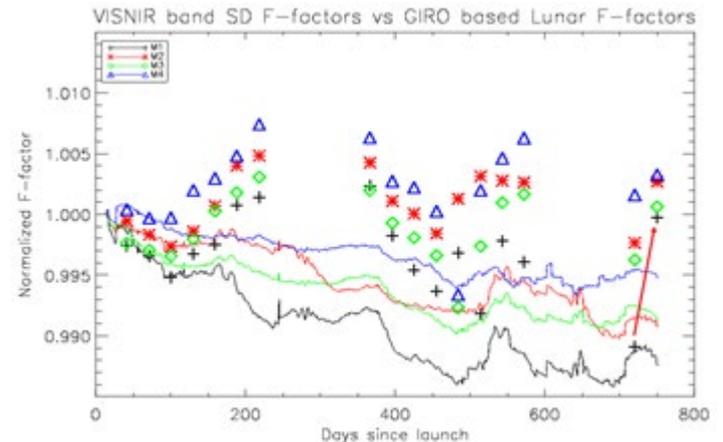
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

none

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test data (TVAC) review/analyze	Jan-20	Jan-20		
J2 pre-launch evaluation tools development	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Launch-ready LUTs (initial delivery)	Jun-20	Jun-20		
Algorithm Updates Review	Jun-20	Jun-20		
J2 SDR data (based on TVAC) available for EDRs	Jan-20	Jan-20		
DAP: Lunar contamination (code & LUT updates)	Jun-20	Jun-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Annual VIIRS SDR performance report	Feb-20	Feb-20		
Verification of cloud implementation	Sep-20	Sep-20		
IDPS Mx build I&T deploy regression support:				
BL2.1 Mx8 I&T VIIRS data review/checkout	Nov-19	Nov-19	11/06/19	
BL2.2 Mx0 I&T VIIRS data review/checkout	Apr-20	Apr-20		
BL2.2 Mx1 I&T VIIRS data review/checkout	Jul-20	Jul-20		

Highlights:



Comparison of the lunar and solar F-factors for NOAA-20 VIIRS bands M1-M4: despite the outlier for band M1 in Nov. 2019, the latest lunar data confirm that the radiometric response for these bands is stable

Accomplishments / Events:

- Further refined NOAA-20 OMPS NP day-1 calibration to improve solar calibration accuracy
- Conducted the consistency check between SNPP and NOAA-20 day-1 data. Certain inconsistencies remain in Day-1 solar irradiance data between SNPP and NOAA-20 OMPS NP due to different bandpass between SNPP and NOAA-20 instruments
- Detected SNPP OMPS NM dark count zero shift issue in the IDPS processing in coordination with EDR and ICVS team together
- Made regular weekly/biweekly deliveries for OMPS dark table, SNPP/NOAA-20 OMPS-NP wavelength and solar flux
- Continued to work on the analysis of J2 TVAC for OMPS

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: Due to SNPP and NOAA-20 OMPS NP bandpass discrepancy, much more SDR cal/val work are involved, which possibly postpones the validating review from January to February. It might be a concern to receive timely user feedback.

Highlights:

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity: OMPS-NP	Jan-20	Feb-20		
J2 pre-launch test data (TVAC) review/analyze	Feb-20	Feb-20		
J2 pre-launch evaluation tools development	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Pre-launch sensor characterization report	Dec-19	Feb-20		Access issue
Algorithm update based on pre-launch test data and other changes (e.g. APID, sampling frequency, FSW, and RDR)	Jun-20	Jun-20		
Launch-ready LUTs (initial delivery)	Jun-20	Jun-20		
Algorithm Updates Review	Jun-20	Jun-20		
J2 SDR data (based on TVAC) available for EDRs	Apr-20	Apr-20		
Remove VIIRS SnowIce and QST tile dependency (ADR8550/CCR4589)	Oct-19	Oct-19	10/28/19	8/1/19 to ASSIST
NaN Values in SOMPS Products (ADR8526)	Jun-20	Jun-20		
High resolution SDR implementation (17km x 17km OMPS TC)	Aug-20	Aug-20		Jun-20 ?
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Annual OMPS SDR performance report	Feb-20	Feb-20		
Verification of cloud implementation	Sep-20	Sep-20		
IDPS Mx build I&T deploy regression support:				
BL2.1 Mx 8 I&T OMPS data review/checkout	Nov-19	Nov-19	11/12/19	
BL2.2 Mx 0 I&T OMPS data review/checkout	Apr-20	Apr-20		
BL2.2 Mx 1 I&T OMPS data review/checkout	Jul-20	Jul-20		

Consistent Check: SNPP/N20 Day-1 Solar Fluxes

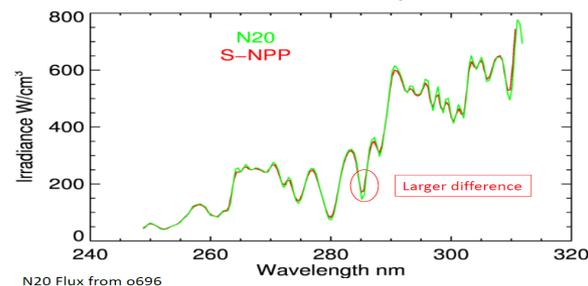


Fig. 1 Comparison of SNPP and NOAA-20 OMPS NP Day-1 solar irradiance

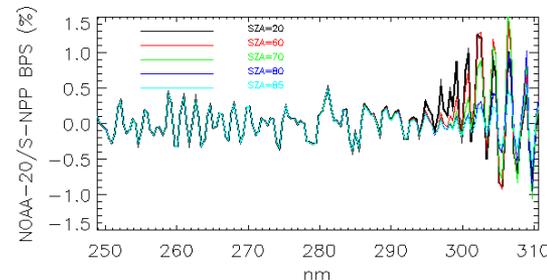


Fig. 2 Reflectance ratio (%) of NOAA-20 OMPS NP over SNPP NP vs. wavelength, based on simulations and switching the bandpass (BPS) from S-NPP NP to NOAA-20 NP.

Accomplishments / Events:

- The frame of data dissemination interface for VIIRS reprocessed data is established and the interface is under internal testing
- New round of SNPP CrIS reprocessing is scheduled
- Preparation of a peer-review journal paper for SNPP SDR Reprocessing is ongoing
- Transition of the reprocessed SNPP SDR data to NCEI/CLASS is ongoing
- Finished the production of one-day Cloud mask (CM) using operational and reprocessed VIIRS SDR, respectively (highlights)
- Delivered the one-day CM to STAR Aerosol Team for testing

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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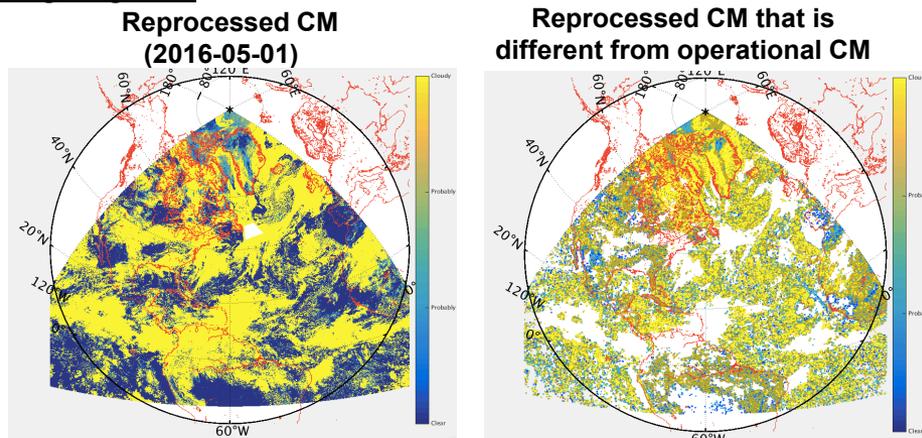
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Optimize SDR reprocessing package	Sep-20	Sep-20		
Development of VIIRS reprocessed data dissemination interface	Sep-20	Sep-20		
Evaluation of impact of reprocessed VIIRS SDR data on cloud mask product	Sep-20	Sep-20		
Finish V2 SNPP CrIS reprocessing	Sep-20	Sep-20		
Develop reprocessing data website	Sep-20	Sep-20		
Analyze the quality of reprocessed data in a journal paper	Sep-20	Sep-20		
Evaluate the impact of reprocessed data on weather forecast (HWRP)	Sep-20	Sep-20		
Readme for reprocessed SNPP ATMS, CrIS, OMPS and VIIRS data	Sep-20	Sep-20		

Highlights:

Cloud Mask (CM) from reprocessed VIIRS SDR



- The total unmatched pixels are about 0.255% of the size of reprocessed CM
- The unmatched pixels are mostly labeled as “probably clear” or “probably cloudy” pixels in the reprocessed CM
- Most of the changes occur in high latitude and between two neighbor categories, i.e. “clear” to “probably clear”, “probably clear” to “probably cloudy”, and “probably cloudy” to “cloudy”

Accomplishments / Events:

- Developed NOAA-20 vs S-NPP OMPS SDR inter-sensor bias module using 32-day averaged values to support OMSP SDR data maturity review
- Performed NOAA-20 OMPS SDR discrepancy results between NASA and NOAA calibration products
- Debugged CrIS-ABI SNO inter-sensor bias monitoring package to identify the extra bias introduced by ABI decoding source code bugs in order to improve S-NPP/NOAA-20 CrIS inter-sensor bias accuracy using double difference technique
- Kept updating NOAA-20 vs S-NPP VIIRS SDR bias using double difference technical through GOES ABI SDR as proxy data
- Developed NOAA-20 vs S-NPP ATMS TDR/SDR inter-sensor double difference bias module using radiative transfer model simulation as proxy data
- Kept updating ICVS dynamic web site by adding multiple trending products within one monitoring window

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			

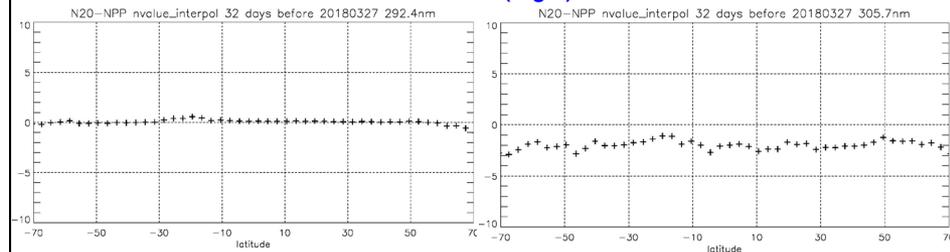
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Issues/Risks:

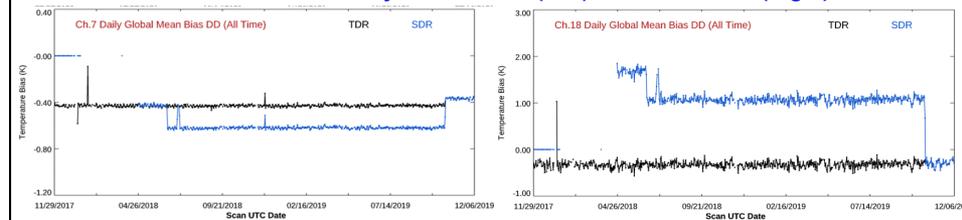
None

Highlights: Significantly contribute to STAR SDR Teams

NOAA-20 vs S-NPP OMPS N-Value 32-Day Latitude Dependent Bias at 292.4nm (left) and 305.7nm (Right)



NOAA-20 vs S-NPP ATMS TDR/SDR Inter-sensor Double Difference Bias using RT Model Simulation as Proxy at Channel 7 (Left) and Channel 18 (Right)



Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
<ul style="list-style-type: none"> • ICVS Intersensor web site beta version (e.g., direct, CRTM, 3rd instrument as transfer) • ICVS-J2 prototype beta version using J1 as proxy data • ICVS-reprocessing tool prototype 	Dec-19	Dec-19		
<ul style="list-style-type: none"> • ICVS interactive modules: beta version • OMPS geolocation error monitoring algorithm development • Cloud mask module improvement using AI-based cloud detection algorithm: beta version • IDPS cloud implementation verification task 	Mar-20	Mar-20		
<ul style="list-style-type: none"> • ICVS intersensor and reprocessing web site improvement (operational version) • ICVS Interactive modules: operational version • ICVS Module improvements (each instrument on both SNPP and NOAA-20) (with proper QCs in particular cloud mask over snow-free land) <ul style="list-style-type: none"> ▪ Inter-Sensor Comparison Modules ▪ O-B and Double Difference Bias Modules 	Jun-20	Jun-20		
<ul style="list-style-type: none"> • ICVS-AI modules for each instrument lifetime performance assessment: beta version • OMPS geolocation error monitoring module 				
<ul style="list-style-type: none"> • ICVS-AI modules for each instrument lifetime performance assessment: operational version • ICVS-AI modules for each instrument SDR data quality assessment: beta version • ICVS upgrade (if new servers are ready) 	Sep-20	Sep-20		
JPSS-ICVS System Standardization and ICVS Annual Performance Review	Feb-20	Feb-20		

Accomplishments / Events:

- **Terrain-Corrected EDR Imagery:** The terrain-correction code changes are undergoing operational testing by Raytheon. The Imagery Team will likely be involved in checking the EDR Imagery output, as the code changes move thru the steps into operations. (D. Stuhmer, D. Cumpton, Raytheon)
- **DNB-to-NCC LUT update:** The maximum gain of E12 for the lunar LUT has been added to the LUT generation tool, Other than a discontinuity in the LUT slope near 105 degrees, the lunar LUT is nearly complete. For the solar LUT, the maximum gain in the operational LUT increases from about E7 to nearly E8 from about 105 degrees to 180 degrees. A function has been fit to that linear increase in log10 space. This will be included in the next iteration of the solar LUT generation tool. (D. Hillger, S. Finley, T. Kopp)

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
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Algorithm Updates Review	Jun-20	Jun-20		
N20 NCC LUT update	Sep-20	Sep-20		
All 16 M-bands as Imagery EDRs	Aug-20	Aug-20		Before J2 launch, JCT3
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization tool development/improvement (increase Polar SLIDER storage for longer archive and more imagery/combo products with multiple satellites)	Sep-20	Sep-20		
Annual VIIRS Imagery performance report	Feb-20	Feb-20		
Verification of cloud implementation	Sep-20	Sep-20		
IDPS Mx build I&T deploy regression support:				
BL2.1 Mx 8 I&T ATMS data review/checkout	Nov-19	Nov-19	11/12/19	
BL2.2 Mx 0 I&T ATMS data review/checkout	Apr-20	Apr-20		
BL2.2 Mx 1 I&T ATMS data review/checkout	Jul-20	Jul-20		

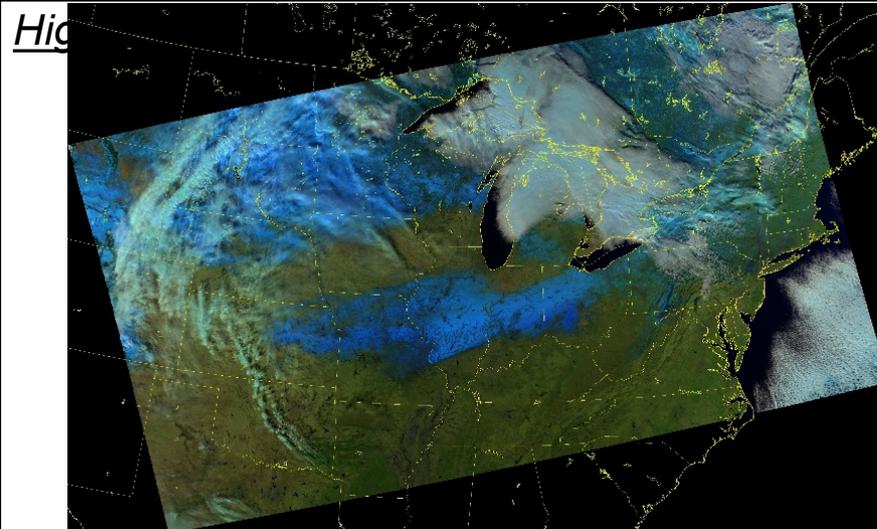


Figure: A VIIRS RGB image from 2019-12-19 at ~1843 UTC, showing the snow cover swath (blue) across the US Upper Midwest, dumped by an earlier winter storm. Green areas are land, white areas are low clouds. Note high-res details in the snow cover due to lakes and rivers and cities.

Accomplishments / Events:

- ECM team is investigating the issues brought out by the cryosphere team regarding cloud mask over very cold snow surfaces, which may involve a LUT update in early 2020.
- Added new tools to monitor confidently clear pixels over various surfaces.
- Developed new diagnostic tools to easily track cloud top height retrieval performances at pixel levels.
- Continue to finalize ECM2 for implementation in 2020.

Overall Status:

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

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

Issues/Risks:

None

Highlights: ECM Monitoring

Cloud Product: Trends

Select options
 Cloud Mask Domain:
 Anywhere: VCM ECM-op ECM-IT
 Deep water: VCM ECM-op ECM-IT
 Shallow water: VCM ECM-op ECM-IT
 Unfrozen land: VCM ECM-op ECM-IT
 Frozen land: VCM ECM-op ECM-IT
 Arctic: VCM ECM-op ECM-IT
 Antarctic: VCM ECM-op ECM-IT
 Desert: VCM ECM-op ECM-IT
 Cold Surface: VCM ECM-op ECM-IT
 Water: VCM ECM-op ECM-IT
 Warm land: VCM ECM-op ECM-IT
 Time series:
 Weekly Monthly Seasonal Year

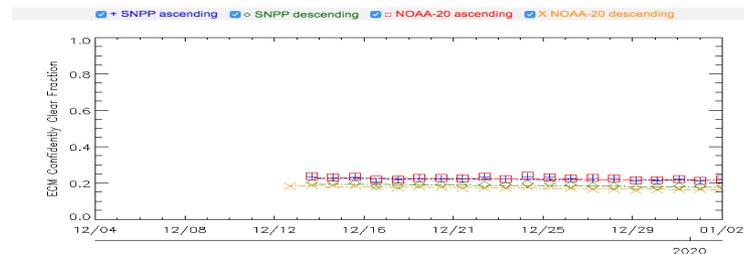


Fig. 1. Time series of ECM retrieved confidently clear fraction. This allows monitoring of ECM performance over different underlying surfaces, which are particularly important for algorithms/products whose retrievals are solely conducted over confidently clear pixels.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> Cloud Mask: Implement DNB Cloud Mask: Implement DNB Cloud Phase/Type: Optimize cloud phase thresholds for NOAA-20 ACHA: Improving multilayer ACHA CBH: Leverage DCOMP nighttime COD (DNB) to improve performance over IR-only CCL: Include super-cooled and convective fraction DCOMP: Incorporate improved surface reflectance for DCOMP channels NCOMP: Extend NCOMP cloud optical depth range to include larger values 	Mar-20	Mar-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val Visualization tool and LTM webpage development/improvement	Sep-20	Sep-20		
Support Alaska Demo and ESRL usage	Sep-20	Sep-20		

Accomplishments / Events:

- Completed software development and collection of data (S-NPP and NOAA-20 VIIRS SDR and other data) needed for the update of AOD retrieval over bright land pixels.
- Evaluated the TROPOMI Aerosol Layer Height (ALH) product. Spatial coverage of aerosol plume in the ALH product was compared with that in the JPSS Enterprise of Aerosol Detection Product (ADP) and with CALIPSO Aerosol Layer Product. Results were presented at the Copernicus Sentinel-5 Precursor Validation Team Workshop in Frascati, Italy.

Overall Status:

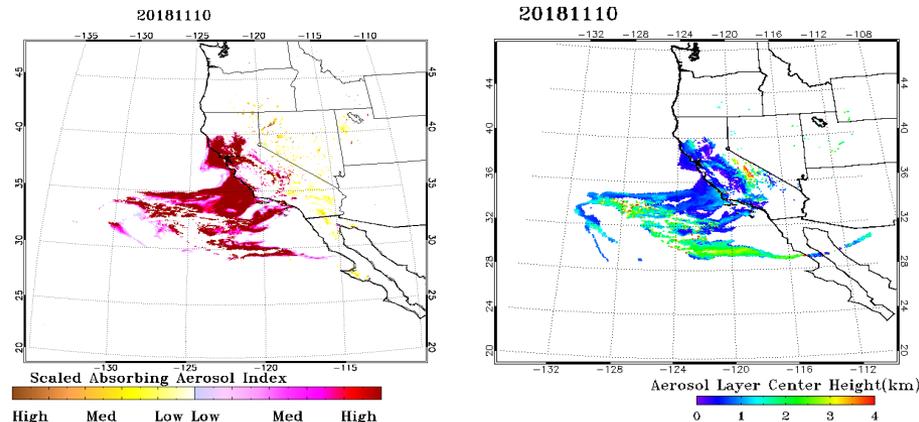
	Green ¹ (Completed)	Blue ² (On-Schedule)	Yellow ³ (Caution)	Red ⁴ (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> Re-derive surface reflectance (dark and bright land) relationships Update thresholds in internal tests of sea ice and heavy aerosol over water for NOAA-20 Fix issue with misidentification of bright surface. Retrieve AOD using dark-surface relationship ADP algorithm updates to improve correct detection and minimize false detection over high latitudes 	Mar-20	Mar-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement, update aerosol cal/val & AerosolWatch website	Sep-20	Sep-20		



Left: JPSS ADP smoke/dust flag showing scaled aerosol index on Nov 10 2019. *Right:* TROPOMI Aerosol Layer Height product on the same day.

Accomplishments / Events:

- Added to list of known NOAA-20 observations of non-trivial ash clouds
- Began FY20 cal/val activities, including continuous assessment and comparisons to validation data
- The utilization of volcanic thermal anomaly detection and characterization for improving VIIRS based detection of new ash emissions was demonstrated (see highlight). This work illustrates the importance of a holistic application based approach to product development and generation.

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		

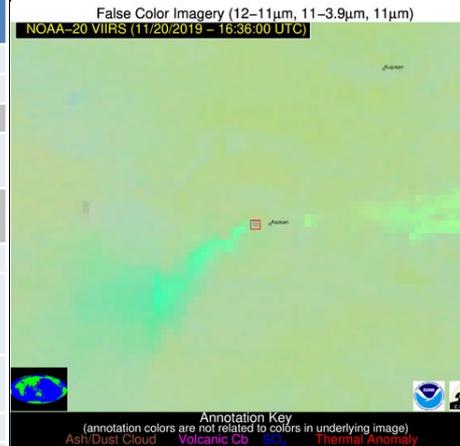
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

In early 2020, STAR management will be briefed on the challenges associated with transitioning from the enterprise algorithm to the multi-sensor based VOLcanic Cloud Analysis Toolkit (VOLCAT).

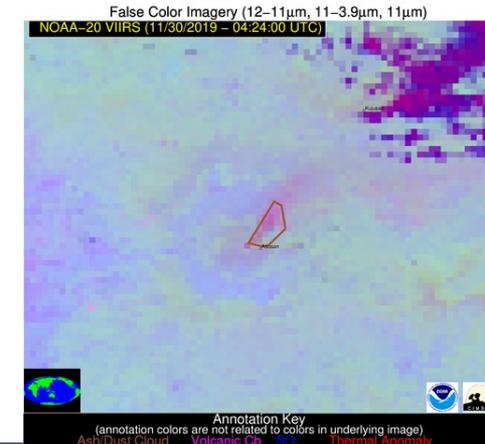
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
J2 Cal/Val Plan - final delivery	Dec-20	Dec-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Final J2 ready DAP to NDE (include NPP/N20 updates)	Jun-21	Jun-21		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
▪ Refine thresholds and LUT's for S-NPP and NOAA-20 as needed	Mar-20	Mar-20		
Pursue algorithm enhancements, including eventual transition to VOLCAT	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:



A thermal anomaly at Asosan volcano (Japan) was automatically detected on 11/20/2019 by NOAA-20.

Information on the Asosan thermal anomaly, originally detected on 11/20, was recorded in a database that automatically influences ash detection thresholds (ash emissions are more likely at volcanoes with thermal anomalies).



Annotation Key (annotation colors are not related to colors in underlying image)
Ash Dust Cloud Volcanic Cb Thermal Anomaly

Accomplishments / Events:

- As part of the effort to select a single Enterprise snow fraction algorithm for VIIRS and ABI, the current VIIRS Enterprise snow identification algorithm has been modified for use with ABI.
- The development of a snow depth product over North America is described in a new paper titled, "Mapping of snow depth by blending satellite and in-situ data using two-dimensional optimal interpolation - Application to AMSR2" (Kongoli, C. J. Key, and T. Smith, 2019, Remote Sensing, 11, 3049, doi:10.3390/rs11243049)

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			

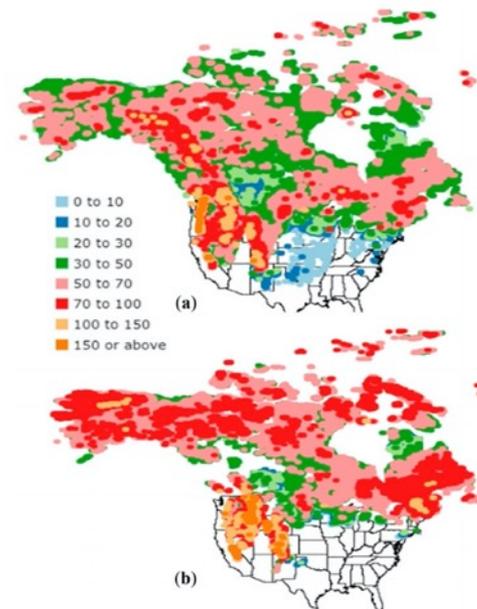
- Project has completed.
- Project is within budget, scope and on schedule.
- Project has deviated slightly from the plan but should recover.
- Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

None

Highlights:

Optimal interpolation (OI)-based snow depth (cm) over North America: on (a) 7 January 2017 and (b) 15 February



Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity: Snow Cover (Binary Map & Snow Cover Fraction)	Apr-20	Apr-20		Cover Winter
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> Add passive microwave filters to improve ice products Implement I-band ice products Evaluation of two Enterprise snow algorithms (VIIRS and ABI) and possible replacement 	Mar-20	Mar-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Accomplishments / Events:

- The emergency update of the M-band fire product was implemented in NDE operations on December 5, 2019
- Coordinated with NCEP operations regarding the operational transition; no issues have been reported
- Met with the GBBEPx team regarding FRP retrievals in British Columbia and impacts on emission modeling
- Worked with JSTAR Mapper team to update visualization of the M-band fire product
- Provided support to the AWIPS development team regarding product updates
- Monitored product performance during the Australia fire event

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		OSPO / NDE implementation

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:

Delay in OSPO / NDE's readiness to implement I-band algorithm

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity (M-Band & I-Band)	Jan-20	Jan-20		
Initial DAP (I-Band)	Mar-20	Mar-20		
Final DAP (I-Band)	Sep-20	Sep-20		With initial J2 DAP
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:	Jun-20	Jun-20		
▪ I-band algorithm improvements				
ATBD update	Dec-19	Jan-20		M-band update
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:

<https://www.star.nesdis.noaa.gov/jpss/mapper/>



NOAA-20 VIIRS I-band Fire Radiative Power in SE Australia on 12/30/2019

Accomplishments / Events:

- Consulted with Eric Vermote (NASA) regarding the update of high aerosol flag in the NDE product. This will improve retrievals over bright surfaces at high view angles.
- Worked with OSPO to clarify a Suomi NPP data anomaly detected by the OSPO Product Monitor. The anomaly turned out to be related to data outage, unrelated to product performance.
- The team determined the thresholds for the OSPO Product Monitor to issue warnings

Overall Status:

	Green ¹ (Completed)	Blue ² (On-Schedule)	Yellow ³ (Caution)	Red ⁴ (Critical)	Reason for Deviation
Cost / Budget			X		Temporary funding delay
Technical / Programmatic			X		Large data volume for validated analysis
Schedule			X		Delay validated review

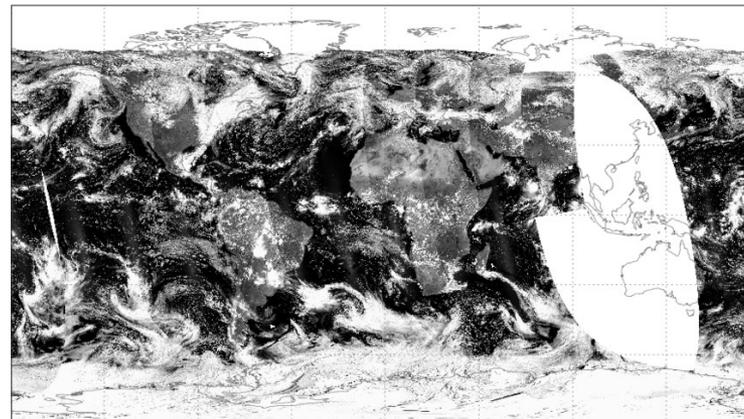
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks: delay in preparation for validated review. Low impact on product performance.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Apr-20	Apr-20		
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> ▪ Update aerosol and cloud quality information and their use ▪ Possibly adjust of some retrieval LUTs ▪ Streamline internal processing code ▪ Make product content compatible with CEOS Analysis Ready Data for Land requirements 	Jun-20	Jun-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:

Suomi NPP VIIRS - NDE Reflectance Band I2
31 Oct 2019



The Suomi NPP VIIRS data outage as shown by the JSTAR LTM system, which triggered the warning in OSPO product Monitor

Accomplishments / Events:

- Downloaded and processed S-NPP and NOAA-20 VIIRS observations acquired in December 2019 to create daily mosaics (up to the writing of this report).
- Started to create monthly composites from the daily mosaics. The composites from January to April of 2019 are completed. Most of the cloud/shadow contaminations seen in the daily mosaics have been removed from these composites.
- Identified and downloaded newly available fine resolution (~30m) land cover maps derived from Landsat, Sentinel-2, and other sub-ha resolution observations. These maps will be used to support derivation of reference data needed to develop and validate VIIRS surface type products.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity	Sep-20	Sep-20		
Validated Maturity	Sep-20	Sep-20		
Annual performance report	Feb-20	Feb-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
AST19 (Annual Surface Type):				
Collaborate with land teams on daily and monthly product gridding and compositing for NDE Enterprise Algorithm (SR/NDVI/EVI/Temperature)	Sep-20	Sep-20		
Complete monthly composites of global gridded VIIRS data (9 land bands + thermal bands) for VIIRS AST19 based on 2019 VIIRS data	Aug-20	Aug-20		
Generate VIIRS AST19 based on 2019 VIIRS data using SVM algorithm	Aug-20	Aug-20		
Comparison of AST19 with surface type validation data (Accuracy statistics of the new AST19 and LWM)	Aug-20	Aug-20		
Delivery of AST19 (available for users through STAR FTP)	Sep-20	Sep-20		
AST18 NDE delivery (ASSISTT)				
<ul style="list-style-type: none"> ▪ Download AST18 from JSTAR web ▪ Chain-run to make sure the delivery works for the down-stream products ▪ Deliver AST18 DAP to NDE 	Aug-20	Aug-20		With JRR 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				

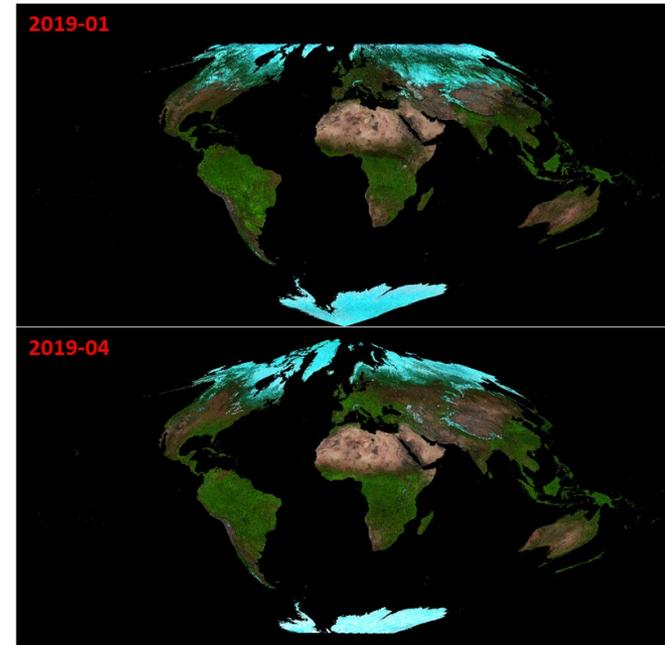
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

None

Highlights:

Monthly VIIRS composites for January and April of 2019 shown with bands M10, M7, and M5 in red, green, and blue. Our previously developed compositing algorithm (Bian et al. 2018) was effective in selecting clear view observations, including snow (cyan color) and baren, over clouds and shadow. Most of the clouds and shadow seen in individual day VIIRS observations have been removed from these composites.



Accomplishments / Events:

- Perform the radiance based (R-Based) method as an alternative LST validation approach to complete the traditional temperature based validation.
- Use parallel computing technique with the support of NOAA S4 system in the R-Based simulation to overcome the time-consuming issue. Granule level R-Based LST could be generated within 3 hours and could be further improved by adopting the fast radiative transfer model like CRTM.
- The regular R-Based validation using NCEP analysis data (0.25 degree and 6 hours), while the emissivity is developed by NOAA LST AWG.
- Use the radiosonde data from NOAA Products Validation System (NPROVS) to do the R-Based Validation, in which the special dataset is collected synchronized with SNPP/NOAA20, with high quality and more layers.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Nov-19	Nov-19	11/21/19	
Validation of global gridded LST product (B/P/V ?)	Sep-20	Sep-20		
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> ▪ Update of coefficients with better stratification for TPW ▪ Uncertainty study of the JPSS LST product ▪ Additional cloud filtering ▪ Improved emissivity dataset ▪ LUT update 	Mar-20	Mar-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-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			

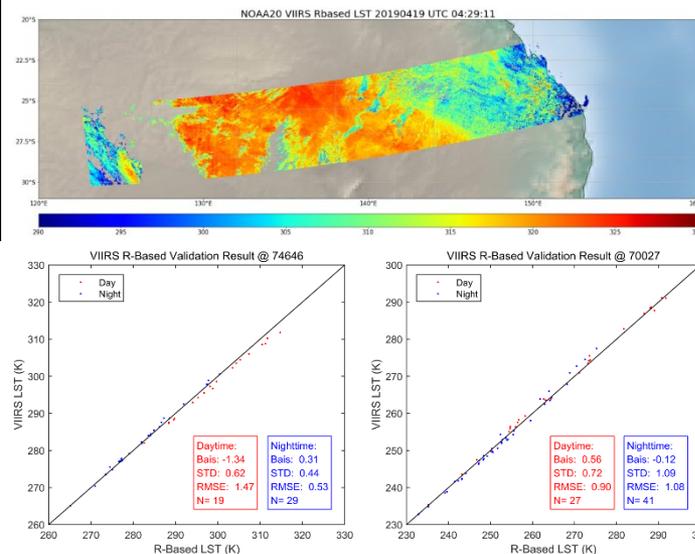
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

Schedule change due to the government shutdown

Highlights:

Radiance-Based VIIRS LST validation



S4 system significantly accelerate the R-Based processing. NOAA20 VIIRS R-Based granule LST over Australia area.

Two NPROVS special Sonde site: Barrow (US/AK, 70027) and SGP (US/OK, 74646) are selected for VIIRS LST validation during 2017.

Accomplishments / Events:

- Time series comparison between NOAA-20/SNPP albedo products (highlight and Slide #2)
- Improving the in situ daily mean albedo calculation algorithm to produce reliable validation result of satellite VIIRS surface albedo product
- Participated in the meeting with ASSISTT and learned about the scheme and API of the Algorithm Services Framework (ASF)
- Analyzed the albedo variation after wildfire over a test area in Amazon in 2013 (Slide #3)

Overall Status:

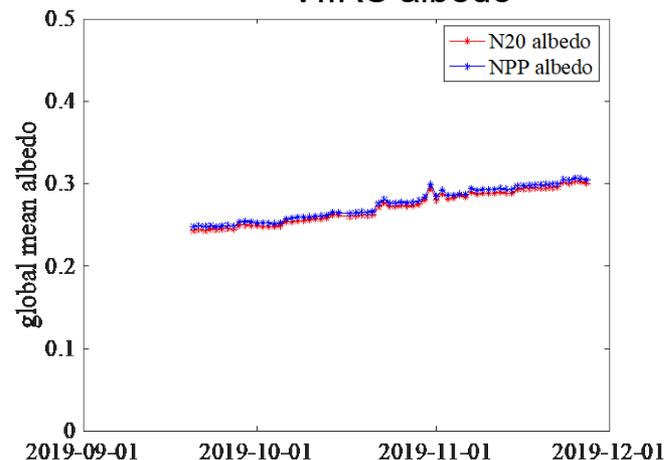
	Green ¹ (Completed)	Blue ² (On-Schedule)	Yellow ³ (Caution)	Red ⁴ (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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

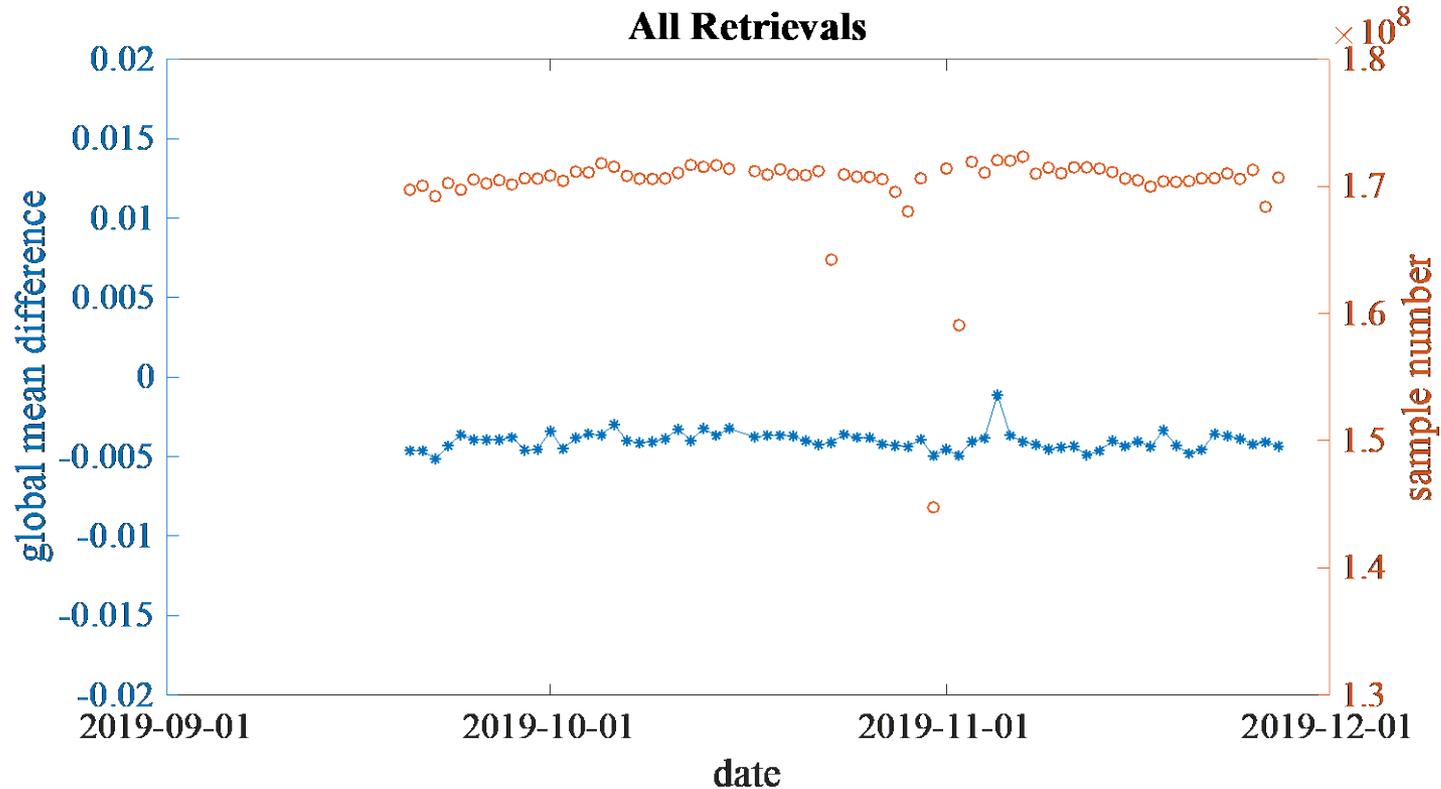
Issues/Risks:

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Nov-19	Nov-19	11/21/19	
Validation of global gridded SURFALB product (B/P/V ?)	Sep-20	Sep-20		
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> Improve the heterogeneity uncertainty analysis method Refining the 1-km climatology LSA 	Mar-20	Mar-20		
Developing a blended albedo product	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights: Global mean of NOAA-20 vs S-NPP VIIRS albedo



The VIIRS global mean albedos (over land and sea-ice surface) show stable increasing trend from September to December due to the increase of snow/ice coverage



NOAA-20 and S-NPP shows very similar results. The global mean difference keeps around -0.005 (N20 - NPP)

Data:

Albedo: VIIRS NPP albedo, in 2013
 Fire: burned area (MCD14, monthly) for 2013

- Only tile H11V08 at Amazon was checked because extraction and calculation pixel by pixel are very slow.
- Pixels that are not affected by fires in entire year are also chosen for demonstrating the natural variation
- Yellow zone is the burning time we selected.
- Albedo kept stable before fire events happen.
- Albedo decreased considerably at Feb. and Mar. with little vibration.
- Albedo gets recovered since April.
- Burned area in following season has non-stable albedo and this may be caused by data uncertainty and land cover change.
- It needs to be pointed out that in Feb-Mar., there is not just one fire event in this tile and different pixels at this tile may burn at different dates so in the yellow zone it's not directly decrease.

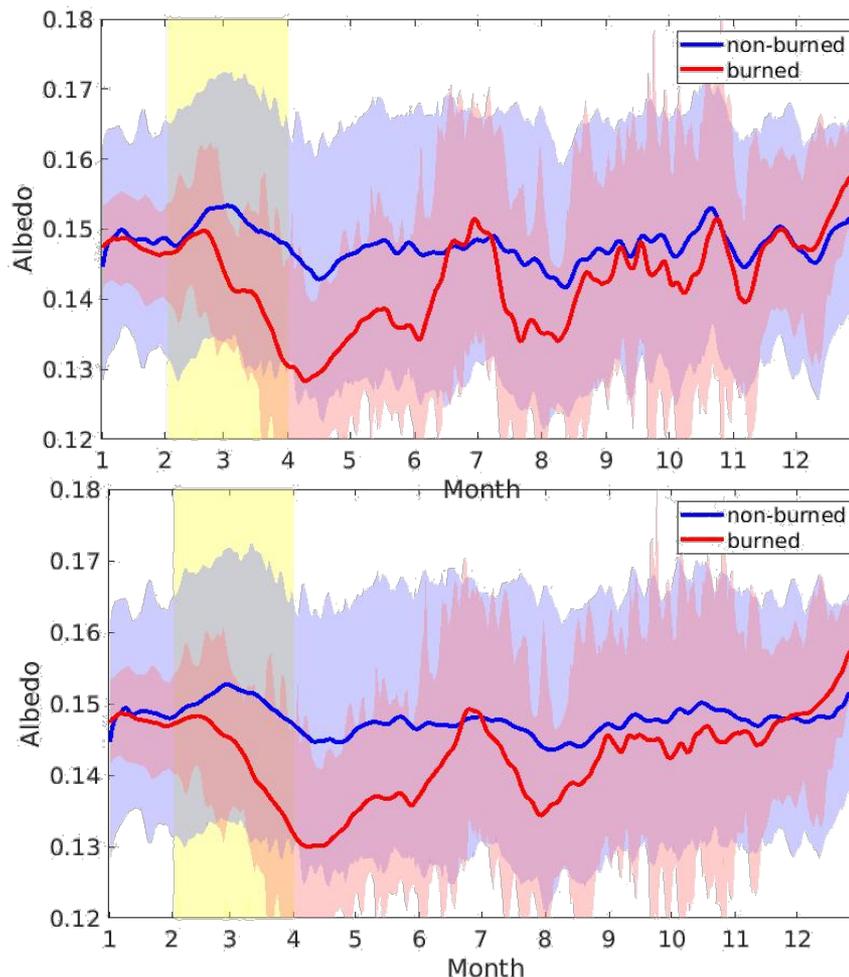


Figure. Temporal variation of surface albedo at corresponding burned pixels. 1x standard deviation is considered as the uncertainty among pixels. (1) smoothed by 15 days; (2) 30 days

Accomplishments / Events:

- Data gathering for VI/GVF validation review complete.
- Comparison of global satellite VI/GVF products for validation review in progress.
- New quality flag scheme for VI products has been determined.
- New quality flag scheme coding is in progress

Overall Status:

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

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

Issues/Risks:

None

Highlights: Ameriflux sites producing VI to be used for VI validation

ID	Name	Latitude	Longitude	Type
US-A03	ARM-AMF3-Oliktok	70.495	-149.882	BSV
US-A10	ARM-NSA-Barrow	71.324	-156.615	BSV
US-ARM	ARM Southern Great Plains - Lamont	36.606	-97.489	CRO
US-Bi1	Bouldin Island alfalfa	38.099	-121.499	CRO
US-Bi2	Bouldin Island corn	38.109	-121.535	CRO
US-GLE	GLEES	41.367	-106.240	ENF
US-Ne1	Mead irrigated maize	41.165	-96.477	CRO
US-Ne2	Mead irrigated rotation	41.165	-96.470	CRO
US-Ne3	Mead rainfed rotation	41.180	-96.440	CRO
US-NGB	NGEE Arctic Barrow	71.280	-156.609	SNO
US-NR1	Niwot Ridge	40.033	-105.546	ENF
US-PHM	Plum Island high marsh	42.742	-70.830	WET
US-Sne	Sherman Island restored wetland	38.037	-121.755	GRA
US-SRG	Santa Rita Grassland	31.789	-110.828	GRA
US-SRM	Santa Rita Mesquite	31.821	-110.866	WSA
US-Ton	Tonzi Ranch	38.432	-120.966	WSA
US-Tw1	Twitchell Wetland West Pond	38.107	-121.647	WET
US-Tw3	Twitchell Alfalfa	38.116	-121.647	CRO
US-Tw4	Twitchell East End Wetland	38.103	-121.641	WET
US-Tw5	East Pond Wetland	38.107	-121.643	WET
US-Uaf	University of Alaska Fairbanks	64.866	-147.856	ENF
US-Var	Vaira Ranch	38.413	-120.951	GRA
US-Whs	Walnut Gulch Lucky Hills Shrub	31.744	-110.052	OSH
US-Wkg	Walnut Gulch Kendall Grasslands	31.737	-109.942	GRA
US-xBR	NEON Bartlett Experimental Forest	44.064	-71.287	DBF
US-xHA	NEON Harvard Forest	42.537	-72.173	DBF
US-xKZ	NEON Konza Prairie	39.101	-96.563	GRA
US-xSR	NEON Santa Rita Experimental Range	31.911	-110.835	OSH

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Feb-20	Feb-20		
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	sep-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> ▪ NVPS algorithms optimization and improvement (to reduce the process time) ▪ Sensitivity analysis of the GVF/VI gridding algorithms 	Jun-20	Jun-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		
Deep-dive analysis for the anomaly watch	Sep-20	Sep-20		

New quality flag scheme for VI products

Rank		Conditions						
#	Name	Valid data	Cloudiness		No snow /ice	No cloud shadow	View Zenith Angle	Aerosol Quantity
			Confidently Clear	Probably clear				
0	Excellent	x	x	.	x	x	< 20°	Low
1	Good	x	x		x	x	>= 20° & < 40°	Low
				x			< 40°	
2	Acceptable	x	x	x	x	x	>= 40°	Low
3	Marginal	x	x	x	x	x	< 20°	Average
4	Pass	x	x	x	x	x	>= 20° & < 40°	Average
5	Questionable	x	x	x	x	x	>= 40°	Average
6	Poor	x	x	x	x	x	< 90°	High/Climatology

Accomplishments / Events:

- Derived trend and oscillation components of VHP NDVI and solar zenith angle (SZA) using empirical mode decomposition (EMD) approach, built the linear relationship between trends of NDVI and SZA, then removed the SZA caused trend from NDVI, re-composed NDVI from modified trend and original oscillation components (highlighted);
- Applied the EMD correction approach to VHP 4km NDVI/BT with Australian cropland mask, and then generated corrected SM, climatology, and VH products;
- Routinely maintained the VH data base and web site;

Overall Status:

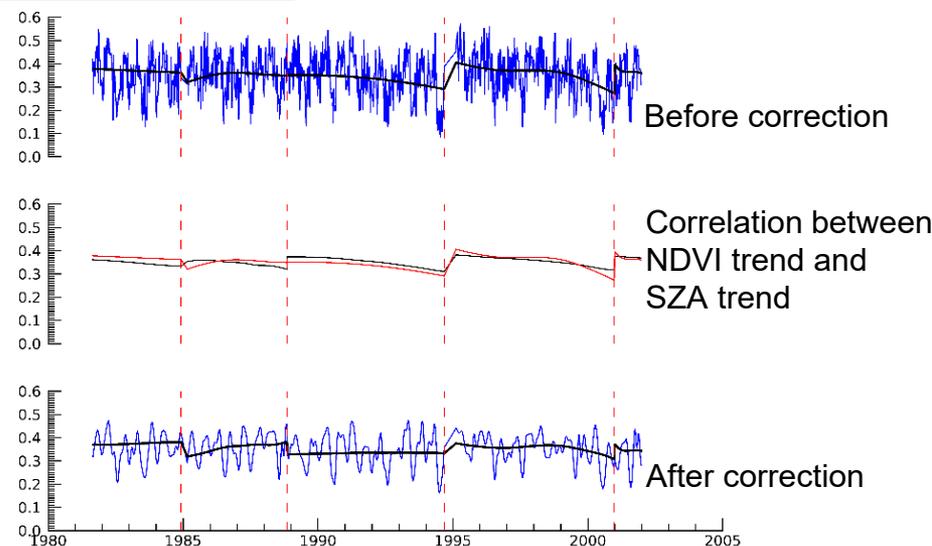
	Green ¹ (Completed)	Blue ² (On-Schedule)	Yellow ³ (Caution)	Red ⁴ (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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

Issues/Risks:

None

Highlights: NDVI Time Series Before and After EMD Correction



Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
N20 Final DAP	Mar-20	Mar-20		Combine with init J2 ready DAP?
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		With final N20 ?
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT: ▪ Algorithm updates/improvements	Jun-20	Jun-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Accomplishments / Events:

❑ Ocean Color Team Publishes EOS Article:

Dr. Xiaoming Liu of SOCD's Ocean Color Science team and Team Leader Dr. Menghua Wang just published an EOS article entitled "Filling the Gaps in Ocean Maps" describing NOAA's new software application which provides gap-free, near-real-time (NRT) monitoring of the global ocean environment. Although NRT ocean color images are produced daily by the science team; cloud cover, glint, and sub-optimal data-collection angles result in data gaps in those images. By merging images from multiple VIIRS sensors (SNPP and NOAA-20), the Ocean Color Team now produces gap-free daily global NRT ocean color Chl a maps that are accessible online via CW. Gap free imagery increases scientists' understanding of the ocean and helps resolve important features that may drive ecosystem functions affecting fisheries, weather and storm events, ocean circulation, Harmful Algal Blooms (HABs) and climate change.

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
Validated Maturity	Jun-20	Jun-20		
N20 Final DAP to CoastWatch	Nov-20	Nov-20		Cprbine with init J2 DAP?
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		CoastWatch ?
Algorithm Updates Review	Sep-20	Sep-20		
Improve the merged VIIRS OC data from SNPP and NOAA-20	Sep-20	Sep-20		
Vicarious calibration for VIIRS-NOAA-20 using MOBY in situ data	Jun-20	Jun-20		
Complete the Sixth VIIRS ocean color dedicated cruise	Apr-20	Apr-20		
Complete the fifth VIIRS cruise report and in situ data analyses (e.g., improve in situ data quality)	Sep-20	Sep-20		
Routine ocean color data production for both NRT and science quality data streams	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:

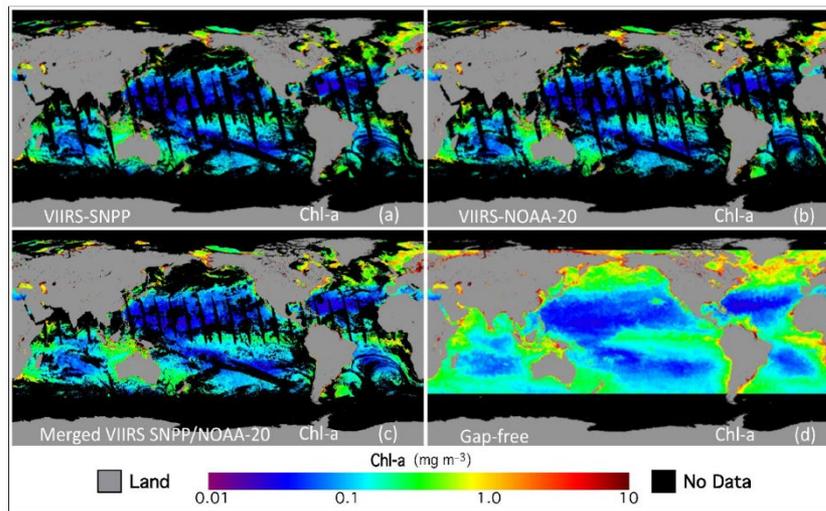


Figure: This sequence of global maps above show VIIRS-measured chlorophyll a (Chl a) concentrations on 29 July 2019 from (a) SNPP, (b) NOAA-20, (c) the merged Chl a image, and (d) the gap-free Chl a image. Chl a concentrations are in milligrams per cubic meter.

Accomplishments / Events:

- Complete SST records from NPP and N20, in two formats (L2P, swath projection; and L3U, 0.02° equal-grid uncollated), going back to 1 Feb 2012, and 5 Jan 2018, respectively have been generated at STAR and transitioned to PO.DAAC.
- Corresponding validation time series have been generated in SQUAM www.star.nesdis.noaa.gov/sod/sst/squam/. Mean biases wrt drifters+tropical moorings is shown in Figure, for “skin” SST (top) and “bulk SST” (bottom). Both are well within the $\pm 0.2K$ requirements.
- Next step would be to populate the NCEI archives. Work is underway with NCEI to populate via PO.DAAC or directly from STAR.
- All project milestones (see table below) are on track.

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.

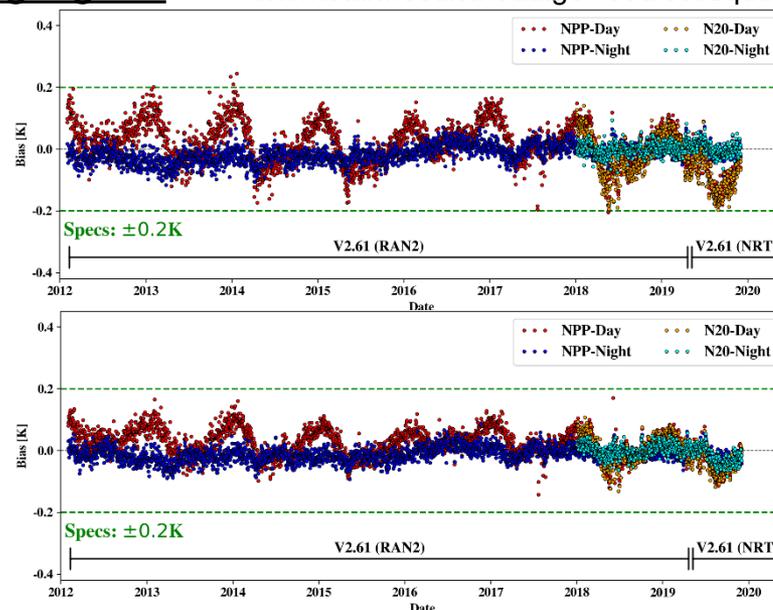
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Updated DAP (ACSP0 2.80, implement thermal fronts. improvements to support data fusion, J2 readiness)	Aug-20	Aug-20		With initial J2 DAP
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		ACSP0 2.80
Algorithm Updates Review	Sep-20	Sep-20		
Complete VIIRS RAN2 archival with PO.DAAC & NCEI	Aug-20	Aug-20	Dec-19: DAAC	
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		
Maintain SQUAM/iQuam/ARMS. Resolve anomalies	Sep-20	Sep-20		

Highlights:

www.star.nesdis.noaa.gov/sod/sst/squam/



Accomplishments / Events:

Direct Broadcast winds back online: Direct broadcast sites at McMurdo and Rothera, both in Antarctica, have been brought back into operation after hardware issues at the sites. While the polar winds are generated with MODIS (McMurdo) and AVHRR (Rothera) data, the new “container” code that was developed for VIIRS will be implemented and tested at these sites in the coming months. Additionally, VIIRS data from the Fairbanks DB site will be processed with the new software system.

Overall Status:

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

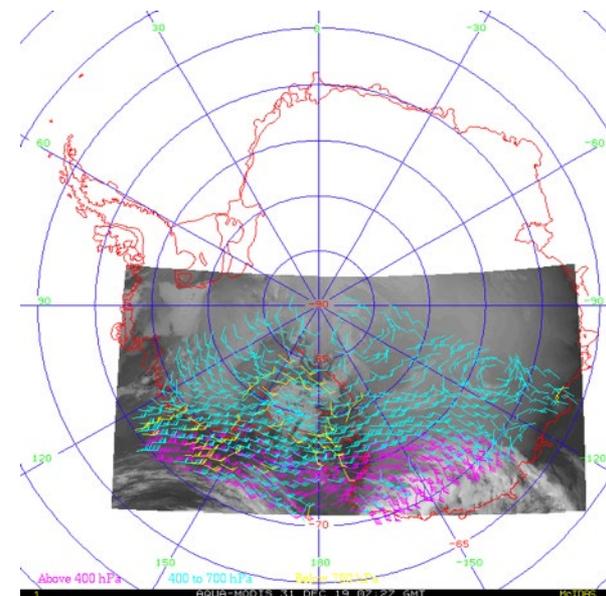
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

None

Highlights:

Aqua MODIS polar winds produced at McMurdo, Antarctica, on 31 December 2019.



Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Wind product updates/improvements: continue routine generation of combined S-NPP/NOAA-20 global winds	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Accomplishments / Events

- NUCAPS team continued efforts in generating a NUCAPS version that uses MiRS a-priori for the NUCAPS MW-only retrieval to test and verify the impact on polar regions. The team has made significant progress in ingesting MiRS climatology into NUCAPS code to develop a NUCAPS version.
- NUCAPS team continued preparations for the upcoming S-NPP/NOAA-20 CH4 validated maturity S-NPP/NOAA-20 CO2 provisional reviews. The following items are being worked out for CH4/CO2:
 - CO2 A-priori development using ATOM-4 data, optimize channel selection and quality flags
 - IR tuning verification through ATOM-4 data
 - Expansion of truth data sets - ATom-4 dataset (24 April to 21 May 2018)
 - Tuning updates for SNPP/NOAA20_CrIS as necessary using CAMS data set
- NUCAPS team worked with STC team members and received SARTA code wrapper and regression codes. The MetOp-C SARTA wrapper scripts received from STC were implemented, tested and verified. Preparations are on towards using this SARTA code for MetOp-C IR tuning. Regression code routines received from STC are looked into for their robustness and ease in implementation. Sample regression runs using the code received from STC will be compared with the regression LUT generated in-house as part of verification.

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			

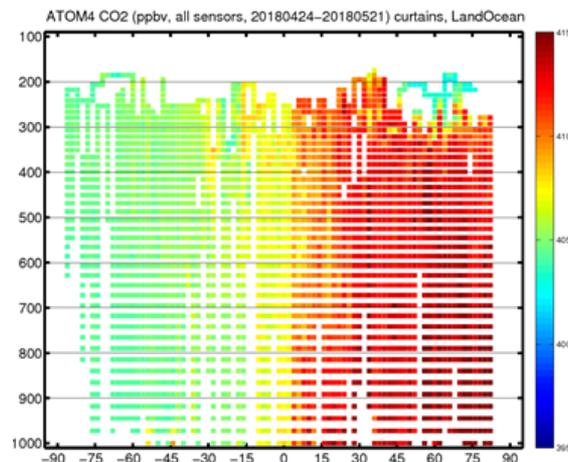
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

Metop C NUCAPS delivery has been postponed to FY2020, TBD.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity: CH4 (S-NPP & NOAA-20)	Feb-20	Feb-20		
Provisional Maturity: CO2 (S-NPP & NOAA-20)	Feb-20	Feb-20		
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> ▪ Optimization of CO related look up tables ▪ Improve NOAA-20 CH4/CO2 algorithms ▪ J2 HEAP algorithm 	Jun-20	Jun-20		
Validation against NUCAPS SNPP trace gas EDRs, other instruments (MOPITT, AIRS, IASI) and in situ measurements (TCCON, ATom, WE-CAN, KORUS)	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		
Peer reviewed paper on NUCAPS HEAP cal/val	Sep-20	Sep-20		

Highlights



The team is actively working on generating the CO2 a-priori using ATOM-4 data (24 April to 21 May 2018). Necessary procedures to extend CO2 data beyond 200 mb are in works.

Accomplishments / Events:

- Work progressing on development of an experimental version of MiRS optimized for retrievals near tropical cyclones, allowing simultaneous retrieval of temperature anomaly structure and rainfall patterns. Retrieval experiments have been run on multiple days for the case of Hurricane Dorian. Experiments run show high sensitivity to choice of background mean and covariance structure, as well as channel selection. Results were presented at the AGU Fall 2019 meeting in poster titled: "Preliminary Development and Assessment of the NOAA Microwave Integrated Retrieval System for Tropical Cyclones (MiRS-TC) : A Passive Satellite Microwave Retrieval Algorithm Optimized for the Tropical Cyclone Environment".

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			

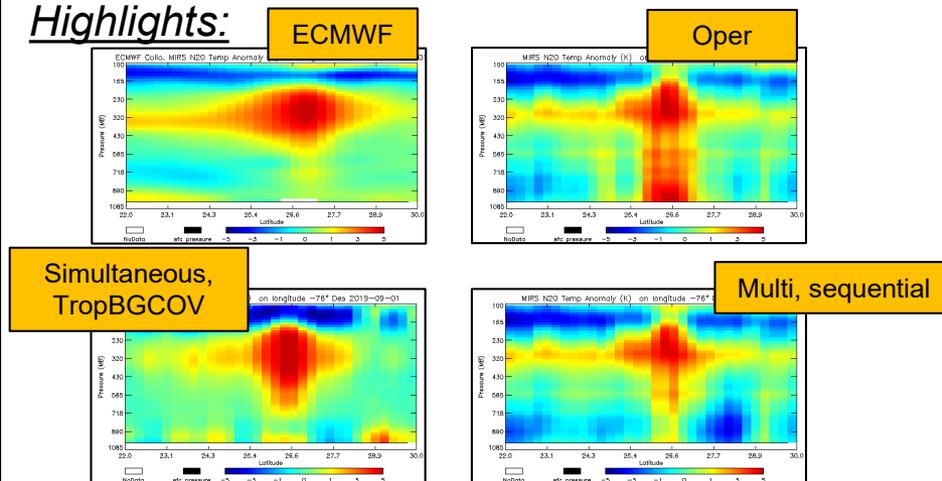
- Project has completed.
- Project is within budget, scope and on schedule.
- Project has deviated slightly from the plan but should recover.
- Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT: <ul style="list-style-type: none"> Optimize MiRS for NOAA-20 and SNPP SFR integration; Algorithm test and verification 	Jul-20	Jul-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:



Analyzed and retrieved temperature anomaly cross-sections from N20/ATMS for Hurricane Dorian on 2019-09-01. Clockwise from top left are the ECMWF analysis, operational MiRS, experimental MiRS using reduced channel selection and sequential retrieval, and experimental MiRS simultaneous retrieval using mean background and covariance from a sampling of tropical analyses for 9 different tropical cyclones.

Accomplishments / Events:

- Further study on the calibration of the MHS (POES and Metop) SFR algorithm has resulted in the improvement of the transition between different calibration ranges. It was accomplished through the enhancement of both the methodology and the calibration data.
- An SFR processing system parallel to the CISESS SFR system was set up to produce SFR using the re-calibrated algorithms and the SFR images posted online at near real-time. The parallel system allows the SFR team to monitor the performance of the new algorithms as compared to the existing products. The NOAA-19 SFR images in the Highlights section show a snowfall event near Quebec City, Quebec, Canada on December 22. The new SFR algorithm appears to produce snowfall rates closer to the NOHRSC snow analysis than the existing algorithm.

Overall Status:

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

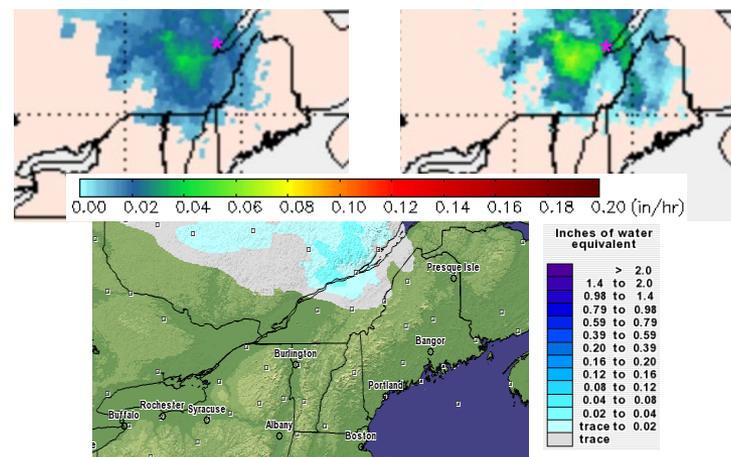
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Annual algorithms/products performance report	Feb-20	Feb-20		
Enhance the calibration method to mitigate existing issues including reducing non-convergence rate	May-20	May-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Deliver updated SFR package to MiRS team	Jun-20	Jun-20		
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		
Algorithm Updates Review	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:



NOAA-19 SFR produced from the newly calibrated algorithm (top left) and the existing algorithm (top right) compared to the NOHRSC snow analysis (bottom) on Dec 22. The new product is closer to NOHRSC in magnitude (0.02~0.04 in/hr) than the existing SFR (0.04~0.08 in/hr) in the area west of Quebec City, Quebec, Canada (marked by magenta star).

Accomplishments / Events:

OMPS NM SDRs have dark correction errors.
 New SDR wavelength scales do not give full agreement between V8Pro for S-NPP and NOAA-20.
 We will need to alter V8Pro for bandpass differences.
 ORR completed for V2Limb SDRs and EDRs at NDE.
 Working on soft calibration, throughput degradation, and filtering and information concentration for V8TOz and V8Pro.
 Developing V8TOz enterprise package for GSICS.

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, code change

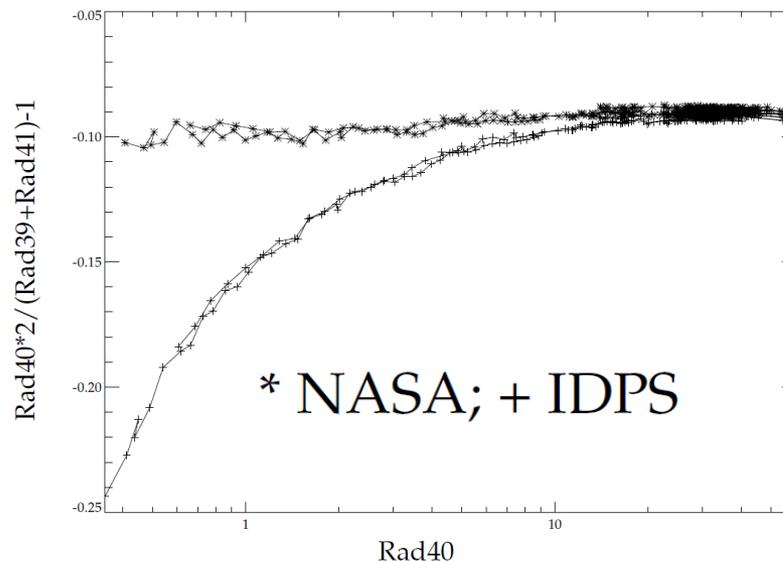
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

Code Changes for OMPS V8Pro EDR on path to maturity will not be implemented at NDE until Jan 2020. Adjustments for SDR changes TBD.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity: V8Pro	Jan-20	Apr-20		Bandpass differences
Limb SDR and EDR to operations	Feb-20	Feb-20		Dec-19: ORR
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
RT Tables with Wavelengths, Bandpasses	Mar-20	Mar-20		With Aug-20 DAP
V8TOz with Cloud top optical centroid algorithm	Aug-20	Aug-20		With Aug-20 DAP
Annual algorithms / products performance report	Feb-20	Feb-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Jun-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Additive errors in OMPS NM SDRs for 317-nm channel CT 10



Accomplishments / Events:

- Activities continue with NESDIS IA and JPSS to discuss AMSR3 and AMSR2 progress/plans
- Engaging JPSS Program Office on budget needs/planning for AMSR-3
 - Learned that AMSR-3 was approved by JAXA for a 2023 launch date!
- Continued product cal/val; all products meeting requirements
- Reprocessing of AMSR-2 period of record completed
- Planning for participation in the JAXA GCOM PI meeting on January 20, 2020
- Preparing for AMS Annual Meeting, January 2020 (Boston)
- Portions of GCOM system under consideration for EPS-SG MWI

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:

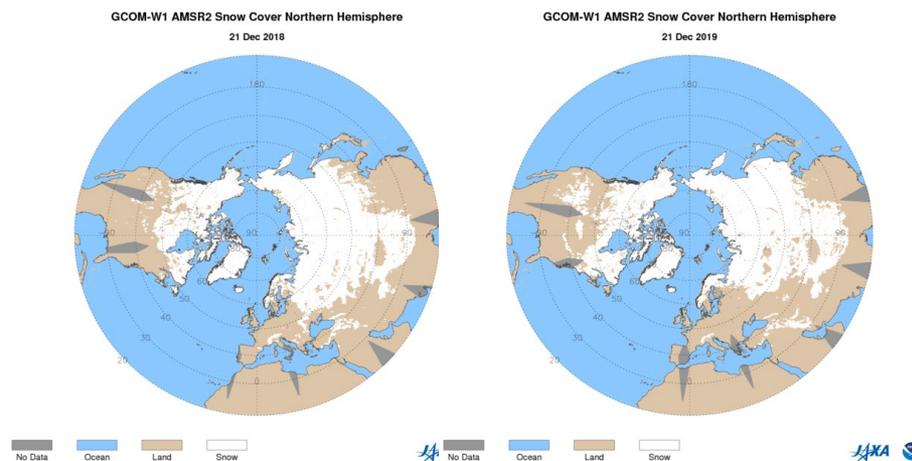
None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Annual report on AMSR2 algorithms and data products performance	Feb-20	Feb-20		
Algorithm Cal/Val	Sep-20	Sep-20		
Algorithm improvement/bug fix	Sep-20	Sep-20		
Deliver updated algorithm DAP to NDE	Sep-20	Sep-20		
Long-term monitoring tool/website development/improvement	Sep-20	Sep-20		
Complete reprocessing of entire mission dataset of AMSR2	Sep-20	Sep-20	Dec-19	

Snow Cover Interannual Changes

Highlights:

NH snow cover products one-year apart on December 21 (2018 left, 2019 right) reveal a few differences, including snow cover further south over the CONUS in 2019 and less snow over W. Europe in 2019.



Accomplishments / Events:

- Continued routine compilation of NPROVS collocation datasets, approximately 30,000 individual comparisons per day (**Highlight**).
- Processed collocated observations from the ongoing ARM / GRUAN /JPSS Radiosonde Inter-comparison VALidation (RIVAL) campaign.
- Continue to monitor and plan the execution of FY20 funds for JPSS / ARM Special radiosonde program; field supply shortage remain.
- Continued preliminary review of experimental Artificial Intelligence (AI) sounding EDR developed at STAR
- Provided inputs for pending GRUAN article on the Vaisala RS92 to RS41 radiosonde transition.
- Delivered and presented NPROVS assessment of the four (4) NWS radiosonde field campaigns conducted in 2019
- The EDR LTM team finalized the VIIRS NDE Land Surface Temperature (LST) images on LTM web site for NPP and NOAA-20.

Overall Status:

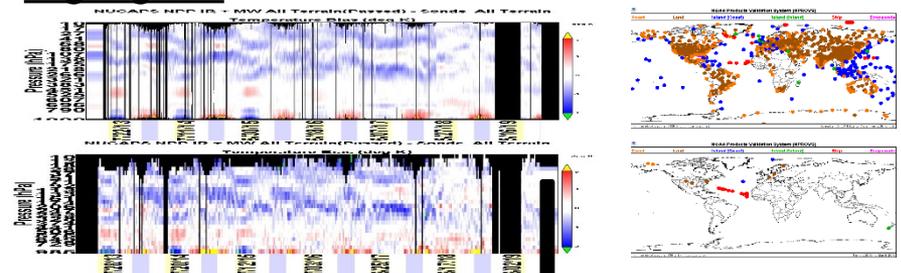
	Green ¹ (Completed)	Blue ² (On-Schedule)	Yellow ³ (Caution)	Red ⁴ (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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

Highlights:



NPROVS 1: The left side panels show weekly averaged time series (2013 to 2019) of NUCAPS NPP temperature bias from collocations with Conventional (top) and Special radiosondes (bottom) routinely compiled by NPROVS; associated geographic distribution are shown on right. The top consider collocations within 6 hr and the bottom within 2 hr at 100 (<1km) and 30 (>1km) vertical layers, respectively. Despite the large differences in spatial and temporal coverage, the time series are consistent denoting the high value of conventional radiosonde to monitor and assess NUCAPS global

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
LTM				
Maintain / expand existing EDR LTM web pages and mappers	Sep-20	Sep-20		
NPROVS				
Support NUCAPS / MiRS EDR soundings for NPP, NOAA-20 and MetOp-C; COSMIC-2 (w/Cao) ...	Sep-20	Sep-20		
Manage JPSS dedicated radiosonde program (ARM, AEROSE, RIVAL ...), expand to store SDR (GSICS); support EUMETSAT ...	Sep-20	Sep-20		
Support NWS Raob Transition Monitoring (Sterling) and NUCAPS AWIPS-2 users	Sep-20	Sep-20		