GOES-R PS-PVR Chair Disposition Form

Product Validation Level

- [ ] Beta
- [x] Provisional
- [ ] Full Validation

Date: 11/28/2018

Algorithm

- [x] ABI L1b/CMI
- [ ] EXIS L1b
- [ ] GLM L2
- [ ] MAG L1b
- [ ] SEISS L1b
- [ ] SUVI L1b

1. Review Board Comments

This is the Provisional PS-PVR for GOES-17 ABI L1b Radiances (presented by Fred Wu) and GOES-17 ABI CMI & SCMI in AWIPS (presented by Tim Schmit). The guidance and scope of this review is a 'cool times assessment' that focuses on the periods that are not susceptible to the LHP anomaly.

Congratulations to both teams on their successful achievement of Provisional Maturity! As always, the dedication of the teams to their tasks is very apparent. We also applaud the teams ability to successfully arrive at this PS-PVR given the significant schedule and analysis hurdles presented by the LHP anomaly. Given the achievement of the Provisional milestone, all subscriptions to PDA, the Big Data Partners, and CLASS will receive any GOES-17 data requested. Further, barring any new revelations associated with the cryo-cooler anomaly, the science products are fit for Dec 10 GOES-West assignment should OSPO make that decision to proceed at this Friday's GOES-17 OTRR.

Both teams presented compelling analysis which demonstrated data caveats are well understood and captured. The GOES-17 ABI L1b & CMI data caveats are much like those currently associated with GOES-16 (e.g. stray light, striping on some channels (e.g. 8,9,10,16) not including stripes which are mitigated via BDS corrections, and cold pixels around fires) with the exception of saturated/degraded channel hours resulting from the LHP anomaly and the on-going cryo-cooler anomaly with its associated image degradation. Given the LHP anomaly is well understood and strategically mitigated, it does not have an impact on this PS-PVR. Given the cryo-cooler anomaly remains on-going and is not yet fully understood and mitigated, it too does not impact this PS-PVR but could certainly impact PC/PD and operational assignment for GOES-17.

Approval Status

- [x] Approved
- [ ] Not Approved

2. If not approved, list actions required to become approved.

	PS-PVR Chair	Signature	Date
Not Approved			
Approved	M. Seybold (proxy D. Lindsey)	SEYBOLD.MATTHEW.G.1078301500 Digitally signed by SEYBOLD.MATTHEW.G.1078301500 Date: 2018.11.28 16:26:28 -05'00'	11/28/2018

3. Other Notes

----------Fred Wu on GOES-17 ABI L1b Radiances----------
SCOPE & BACKGROUND:
- Analysis focus is on times when focal plane temperature is nominal.
- Mode 3 during stable periods of PLPT.
- Performance: Geometric (INR), Radiometric - Solar (VNIR), Radiometric - Emissive (IR)
- Metrics: Accuracy (difference from ref "truth"), Precision (confidence of evaluation), Stability (variation in time, space etc)
- There are a total of 36 PLPTs.
- Reference to "On-going" PLPT progress is actually "Complete and continuously repeated for path to Full Maturity".
- Note: The new "nominal" function of GOES-17 ABI still has a focal plane temperature ~20-40K higher than GOES-16.

PLPT RESULTS:
- Analysis is based on only gain set 3 when instrument is stable.
- G17 ABI IR radiance bias is small and stable during “cold” FPM (focal plane module) period (except for B16).
- No strong scene radiance Tb bias for all the IR bands
- No apparent diurnal variation during the cold FPM period
- Latitude/Longitude dependent Tb bias can be observed
- Large Tb bias during the hot PFM period
- Channel 1 dependency on East/West during two specific days: 7/30 and 10/20 at noon day.
- VNIR Noise: B04 failed MRD. B05 & B06 failed PB. Mean are comparable to G16, suggesting BDS issue.
- IR Noise: All worse than G16. All failed PB. 6 of the 10 bands failed MRD. Except for 9.61 and 13.3 channels, mean is within MRD and comparable to G16. Negative impacts on user experience may be somehow limited.
- VNIR & IR Accuracy is acceptable.
- Missing G17 in VNIR SNR chart. (chart error)
- Navigation accuracy is excellent for G17. All modes are in family.
- Frame-to-Frame and Swath-to-Swath accuracy are better than baseline.

----------Tim Schmit and Mat Gunshor on GOES-17 ABI L2 CMI & SCMI in AWIPS----------
- Analysis performed using GLANCE tool differencing comparisons and statistics.
- Visual inspections of spectral/spatial/temporal against GOES-15 (legacy) and also GOES-16 (GOES-R).
- Issues continuing to be inspected are cold pixels around fires, stray light, lunar intrusion during star looks, LHP-induced saturation/degradation mitigations (DQFT, channel substitutions, enterprise algorithms), and cryo-cooler shutdown -induced imagery degradation.

----------Cryo-cooler anomaly update from Alexander Krimchansky----------
In late November, 2018 a series of three separate cryo-cooler temperature regulation challenges resulted in degraded memory. Aspects of the anomaly included unchecked memory consumption, ABI commanding inspection, and instrument restarts. Current status of the anomaly expects a full recovery without any lasting science product impacts; therefore, the cryo-cooler anomaly is not a factor in the disposition of the PS-PVR. After one of the resets a navigation issue resulted from the inadvertent lack of line-of-sight upload. It was subsequently rectified.

----------Brian Gockel NWS Update----------
- NWS is very much enjoying the GOES-R series capabilities over the western domain including the Pacific Ocean. Customers are particularly enjoying the AK and HI coverages.
- ABI VIS, NIR, and window bands are very good. Preparing for next period of saturated/degraded channel hours beginning in January and will spend time assessing impact to NWS mission deliverables (e.g. forecast generation, etc.).
- Need to keep frequent and thorough communication of change management flowing in order to avoid anything like the DO.07 patch install anomalies from summer, 2018.
- Activation of SCMI for AWIPS (via SBN) at WFOs/RFCs/RHQs went off without a hitch on Nov 15, 2018. This is good. It was noted that SCMI is not full res at this time. Good cooperation among folks (ie., SET, etc) to deal with display issues, etc...
- All NWS sites have taken the core training, but continues.
- Good to hear that the TOWR-S team has developed an automated process to monitor the degradation present in the ABI IR