GOES-R PS-PVR Chair Disposition Form

Product Validation Level

☑ Beta ☐ Provisional ☐ Full Validation

Date: 09/18/2017

Algorithm

☐ Aerosol Detection	☐ Aerosol Optical Depth	☐ Cloud Mask
☐ Cloud Optical Depth	☐ Cloud Particle Size	☐ Cloud Top Height
☐ Cloud Top Phase	☐ Cloud Top Temperature	☐ Derived Motion Winds
☐ Derived Stability Indices	☐ Fire/Hot Spot Characterization	☐ Hurricane Intensity Estimation
☐ Land Surface Temperature	☑ Rainfall Rate/QPE	☐ Reflected Shortwave Radiation
☐ Sea Surface Temperature	☐ Shortwave Radiation	☐ Snow Cover
☐ Total Precipitable Water	☐ Vertical Moisture Profile	☐ Vertical Temperature Profile
☐ Volcanic Ash		

1. Review Board Comments

The Board thanks Dr. Kuligowski and the AWG RRQPE team for a fairly extensive reference data comparison with the NASA Global Precipitation Mission (GPM) dual frequency radar-derived rainrate, which provides an independent high quality space-based comparison across a large domain from 60N-60S latitude. this is good. However, the RRQPE as presented is far from meeting spec and requires considerable improvement to be fit for operational use. We do not think it prudent ot present the product to users when the performance is not what users expect. We therefore consider the RRQPE product to be only conditionally approved at this time. The baseline science algorithm has been improved through the use of Himawari AHI data, and appears to more advanced and perhaps able to meet the ABI spec. We request a prioritized sensitivity assessment of which of the identified improvements (limb cooling correction, RH adjustment, dynamic cal adjustment against passive microwave measurements, parallax correction) best address the deficiencies in meeting spec. Determine how often the

Approval Status

☑ Approved ☐ Conditionally Approved

2. If conditionally approved, list actions required to become approved.

The ADR was implemented on 09-13-2017 as part of patch, PR.05.02, as ADR 412 - ABI L2 Rain Rate Coefficient File Update. The lien on 05-17-2017 is removed and RainRate has acheived beta maturity validation.

	PS-PVR Chair	Signature	Date
Conditionally Approved			
Approved	Steven J. Goodman	GOODMAN.STEVEN.J.1365862652 Digitally signed by GOODMAN.STEVEN.J.1365862652 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OTHER, cn=GOODMAN.STEVEN.J.1365862652 Date: 2017.09.18 16:29:55 -04'00'	09/18/2017

3. Other Notes

RRQPE- native 2 km resolution line up with CMI. GPM DPR (not GMI) used for quantitative assessment (60S-60N) ? GMI native pixels not 4 km?

Accuracy and precision of 2 mo, 18,000 point comparisons out of spec for March-May.

Identified contributing factor- limb (satellite zenith angle issue) cooling false rain rates at high latitude (greater problem than SEVERI tests with NIMROD radar in Europe).

Spec still not met when latitude <45 deg latitude. Within what lat bounds do you meet spec? Perhaps relevant for beta release caveat?

Showed comparison between ABI and AHI vs DPR for same time period.

No RH adjustment in dry regions in this algorithm vs current GOES operational algorithm, no parallax implementation.

AHI comparison (updated science) with DPR does meet GOES-R accuracy and precision spec. Why is that?

Dynamic adjustment/calibration- ? not fixed calibration- against what parameters- uwave rainrate matched data (operationally is this supposed to be from ADRS ingest of uwave constellation)? water vapor?

Path to provisional- MRMS comparison. What is performance of Hydroestimator and can you compare G13 with G16? What about overlap with SEVERI in S America fov?

Risks identified- limb cooling, parallax adjustment, no RH correction. Upstream minor impacts small number of pixels due to ABI INR, L1b striping, ABI calibration.

Mike Johnson- asks about phenomenology/topography biases over land vs water. Also convective (flooding rain) vs all rain? Solicit user feedback?

Not ready for operational use. Schedule timeline for addressing provisional maturity issues to be resolved in work. Don't see show stoppers.

Recommendation- ADRS dynamic cal implementation for provisional. Readme where performance meets or close to spec, vs where needs further corrections.
.....
We request a prioritized sensitivity assessment of which improvements best address the deficiencies in meeting spec.
Complete product performance assessment with MRMS. How often is dynamic cal required?
A fair amount of work needed to reach Provisional. Stratify results land vs ocean on Path to Provisional
Need dynamic cal, limb cooling, parallax and microwave ancillary input to reach provisional spec. Concern over timeline - priorities to make the updates required. Determine what can be done quickly. Need to get to Himawari RRQPE science capability at a minimum which has shown to meet spec. Suggest user feedback.

Declared beta- PRO to writeup the tasking to AWG. Provisional at risk.