MEMORANDUM FOR: The Record
FROM: Jeff Key and Jaime Daniels, JPSS VIIRS Polar Winds Team Leads
SUBJECT: SNPP VIIRS Polar Winds Validated maturity status and public release
DATE: 10/18/2016

Validated maturity status declaration for VIIRS Polar Winds
Maturity Review Date: **10/18/2016**
Effective Date: **mm/dd/yyyy**
Operational System: **NDE Version 1.0**

The JPSS Algorithm Maturity Readiness Review Board approved the release of the VIIRS Polar Winds to the public with a Validated maturity level quality as of mm/dd/yyyy (effective date), based on JPSS Validation Maturity Review held on 10/18/2016.

1. Validated maturity stage definition: Product performance has been demonstrated over a large and wide range of representative conditions (i.e., global, seasonal). Comprehensive documentation of product performance exists that includes all known product anomalies and their recommended remediation strategies for a full range of retrieval conditions and severity level. Product analyses are sufficient for full qualitative and quantitative determination of product fitness-for-purpose. Product is ready for operational use based on documented validation findings and user feedback. Product validation, quality assurance, and algorithm stewardship continue through the lifetime of the instrument.
2. Algorithm Description:
   - List of Products (Collection Short Name (CSN)):
     - NetCDF: PAMV-VIIRS-CD-NH, PAMV-VIIRS-CD-SH
     - BUFR: PAMV_v1r0_npp
     - CLASS: POLWINNH and POLWINSH
   - Product requirements/Exclusions (L1RDS): Product requirements and their corresponding observed/evaluated values are given in the table at the end of this document.
   - Quality flags: Quality metrics contained in the VPW output are the Quality Indicator (QI) and the Expected Error (EE).
   - Product evaluation/validation: Validation information is provided in the JPSS Validation Maturity Review presentation on VPW, 10/18/2016. (add link to presentation)
   - Product availability/reliability: EDR data were produced since 05/08/2014, when the product became operational in NESDIS. Data before that date were not generally available.
   - Algorithm performance dependence: The performance of the winds algorithm is dependent in part on the accuracy of the cloud mask and cloud height products.
   - Known errors/issues/limitations: None
3. Changes since last maturity stage: There were no previous maturity reviews.
4. Review board recommendations: TBD
5. Path Forward/Future Plan: The cloud mask product will be changed to the Enterprise algorithm for

NDE 2.0 in late 2016/early 2017.

6. Additional Items to note: None

Additional information is available in the VIIRS Polar Winds algorithm theoretical basis document (ATBD) and validation maturity review briefing, which can be accessed at:

http://www.star.nesdis.noaa.gov/jpss/Docs.php

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JPSS L1RD supplement (threshold) requirements versus observed

Attribute	Threshold	Observed/validated
Geographic coverage	~70° latitude to poles	~65° to poles
Vertical Coverage	Surface to tropopause	same
Vertical Cell Size	At cloud tops	same
Horizontal Cell Size	10 km (should be ~19 km, CCR Aug 2015)	same
Mapping Uncertainty	0.4 km (nadir); 1.5km (edge of scan)	0.57 km
Measurement Range	Speed: 3 to 100 m s^{-1}; Direction: 0 to 360 degrees	same
Measurement Accuracy	Mean vector difference: 7.5 m/s	5.7-7.0 m/s (w/raobs)
Measurement Precision	Mean vector difference: 4.2 m/s (was 3.8 m/s)	2.7-3.8 m/s (w/raobs)
Measurement Uncertainty	Not specified	Not applicable