MODIS and VIIRS L1 Product Status

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MODIS L1 Product Status: C6 and C61

- Forward processing at MODAPS includes C6 and C61 L1B generated using the forward LUTs delivered by MCST
  - C61 Atmosphere and C6 Land processing at leading edge
- C6 L1 and Land processing to continue through end of year 2021
  - C6 products to be decommissioned in 2021 with consent from MCST and science teams.
C7 Reprocessing

• All products to be produced in netCDF4/HDF5-EOS5 format

• Operational C61 PGEs will be updated to pre-C7 version to generate products in netCDF4
  • C61 PGEs to be seamlessly transitioned to early C7 version using the APIs developed in-house at LDOPE replacing the current SDP Toolkit.
  • Science teams to use these PGEs to implement C7 specific changes
  • C7 PGEs to be deployed and maintained through GitLab

• Tentative Schedule
  • Spring 2021: Initial delivery of C7 L1B with changes to calibration by MCST for evaluation by discipline teams
  • Summer 2021: Delivery of C7 operational versions of Geolocation and L1B
  • Fall 2021: Start of C7 L1 reprocessing
  • Mid 2022: Start C7 reprocessing of Atmosphere and Land
C1 SNPP VIIRS L1 Products

• C1 L1 products
  • LAADS AS 5000: Generated using Mx8 version of the operational IDPS L1B SDR algorithm and the NASA VCST delivered calibration LUTs.
  • LAADS AS 5110: Generated using the NASA VCST delivered Calibration algorithm and LUT.

• C1 Land products are generated using the Mx8 version of the operational IDPS L1B SDR algorithm and the NASA VCST delivered calibration LUTs. (AS 5000)
C2 SNPP and J1 VIIRS L1

• C2 SNPP VIIRS L1 Reprocessing in progress (LAADS AS 5200)
  • Uses the latest version of the VCST delivered calibration algorithm and LUT
  • Processing complete through mid-2016
  • Expect to complete reprocessing the mission period by April/May 2021.

• C2 J1/NOAA-20 VIIRS L1 Reprocessing
  • C2 reprocessing of L1B and geolocation products for the mission period completed in Aug 2019 (AS 5200)
  • J1 VIIRS experimental land products generated using the NASA J1 VIIRS L1B and C2 VIIRS land algorithms are made available to science teams only (AS 3194).

• C2.1 J1/NOAA-20 VIIRS L1 Reprocessing
  • C2.1 reprocessing of L1B and geolocation product using the latest version 3.1 algorithm and calibration LUT started in Jan 2021.
  • Currently processing Oct 2019. Expect to complete reprocessing the mission period in March 2021.

• C2 VIIRS SNPP and J1/NOAA-20 Land reprocessing expected to start by Spring 2021
Cross Comparison of SNPP and J1 VIIRS

Mean Ratio: 0.981

Mean Ratio: 0.965

Mean Ratio: 0.948

Mean Ratio: 0.955
Conclusion

• MODAPS currently generating both C61 and C6 MODIS L1 products. C6 to be discontinued at the end of this year.

• C7 MODIS products to be in netCDF4. C7 reprocessing of MODIS L1 expected to start in Fall 2021.

• C2 reprocessing of SNPP VIIRS L1 to complete in April/May 2021 and C2.1 NOAA-20 VIIRS L1 to complete in March 2021.

• Persistent bias of ~2% - 6% between the S-NPP and J1/N20 L1B TOA values, for most RSB noticed in the operational C2 L1 products.

• C2 VIIRS land reprocessing to start in Spring 2021.