



Data Systems Working Group Report

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Aura Science Meeting - Data System Working Group

Helsinki, Finland

Jet Propulsion Laboratory

California Institute of Technology



Topics

- Instrument Team Ground Data System Reports
 - TES (Doug Shepherd)
 - HIRDLS (Vince Dean)
 - MLS (Paul Wagner)
 - OMI (Jacques Claas)
- Aura HDF-EOS Guidelines
- GES DISC Report (James Johnson)
- ESDIS Report (Jeff Walter)
- Toolkit, HDF-EOS
- Archiving Issues with Aura Data (John Moses)



TES

- Software is at Release 12.1 Version 5
 - Started reprocessing in August
 - Added Instantaneous Radiative Kernel (IRK) product for ozone
 - All Band Retrieval (BAR)
 - Added nitrous oxide
 - Data supporting a planned joint TES-MLS CO product being written to TES database
- Prototype developed and being exercised for joint TES-MLS CO product
- Release 12.2 will read GEOS-5.7.2 data in netcdf4/hdf5 format
- Release 13 will
 - Create joint TES-MLS CO and TES-OMI products
 - New methanol and formic acid products
 - New “Lite” products for HDO, methanol, ammonia



HIRDLS

- Software at version 6
 - 5 product files, including 2 zonal averages and 2 grids
 - New joint HIRDLS/MLS IWC level 3 product
 - Continued improvements in correcting for obstruction
- Implementing Scientific Linux 6
- Hardware upgrade switching from SGI to 64-core AMD Opteron for main production
 - More power at less expense
 - Savings on cooling, electrical usage
- Installed and tested 1402 different software configurations since launch, mainly to test algorithms for correcting obstruction
- Will be arranging to deliver final versions of documentation, algorithms, records, for smooth handoff and preservation



MLS

- Near-real time products delivered in under 3 hours
 - L1/2 products delivered to SCF and GES-DISC
- Standard processing continues with 2 versions
 - V2.24, upgraded to for compatibility with “B”-side scan table
 - V3.33, the newer algorithm, also upgraded for “B”-side compatibility
- V3.40 should replace V3.33 before GMAO 5.20 ends; it will use GMAO 5.7.2 netcdf4/hdf5
- THz level 1 radiances and standard OH level 2 products resumed production for temporary period August 15 – September 15, 2011
- V4.00 will be next major release, more than a year away
 - Eliminate problems with V3 products
- Near-real time improvements planned
 - Improve quality, add new products, but no added delay



OMI

- Standard products currently at Data Collection 3
- Some data also available on the OMI very fast delivery (VFD)
 - Less than 15 minute delay
 - Including level 2 volcanic and ozone
- Near-real time also available on LANCE, TEMIS
- Row anomaly not currently corrected during processing
 - Affected ground pixels identified using flags
 - If requested daily correction parameters will be supplied
 - Changes to affected ground pixels will be noted—the dates processed with outdated flags will be post-processed in level 1, and reprocessed in level 2 and above
- No plans currently to implement correction parameters



Aura HDF-EOS Guidelines

- Result of careful consensus reached among all 4 Aura teams
- Cheryl Craig achieved this by hard work and exceptional skill
- The document will be subject to continued revision by its named authors, but the only copy will be hosted on an ESDIS server
- Links on teams' own web pages should point to the unique copy
- Main point is to avoid multiple, conflicting versions
- After Aura mission ends responsibility for document will be transferred like final documentation, algorithms



GES DISC Report

- Added 4 new HIRDLS v6 products
- Added new joint HIRDLS-MES IWC product
- Arranged to deliver subsetted GEOS 5.7.2 products to MLS and TES
- Replacing outmoded WIST distribution service with faster and easier-to-use Reverb
- Continuing to offer ftp, Giovanni, Mirador, SSW, OpenDAP, OpenGIS WMS, OpenGIS WCS
- ACP in beta between NASA and DLR



ESDIS report

- Delivers 274 Aura products to 5606 users at an average daily rate of 213.5 GB
- Maintains LANCE for near-real time availability of products from MODIS, OMI, AIRS, MLS, and AMSR-E
- Rolling out Reverb to replace WIST with better features
- Moving to support the metadata format ISO 19115 in ECHO and its Reverb client
- Consolidating ESDIS-supported sites into a single website powered by a Content Management System and a uniform menu appearing as a “Top Hat” at all Data Centers



Toolkit and HDF-EOS

- SDP Toolkit: Complete Science Processing Data Tools for SIPS, DAAC
- MTD Toolkit: a minimal subset of SDP Toolkit
- HDF-EOS 2 and HDF-EOS 5: higher data types based on hdf and hdf5
- HDFView plugin for HDF-EOS
- Supported on
 - Solaris 10, 32-bit and 64-bit Linux, PowerPC and Intel MacOS, Cygwin, and newer Windows
 - Fortran 77, 9x, g77, pgf90, Intel ifc, gfortran, c, c++, gcc,g++
- Current version is 5.2.17
 - Improves on writing XML-formatted metadata writing by fixing bugs and enabling browsers to display the metadata



Archiving Aura Data

- ESDIS Data Centers will hold and distribute data while it is in active use or production
- Problem is how to ensure data remains useable and understandable afterwards—what critical information would be needed
- Identify that information and knowledge early, but too early, and arrange for its smooth handoff at end of mission
- Checklist approach: show items delivered, still due
- ISO Metadata Standard 19115 provides guidance for interoperability
- Long-Term Data Preservation Documents
- Persistent Data Identifiers and Digital Object Identifiers cope with Relocating data archives