NOAA Scientific Data Stewardship for OSTM/Jason-2 and Jason-3 Products

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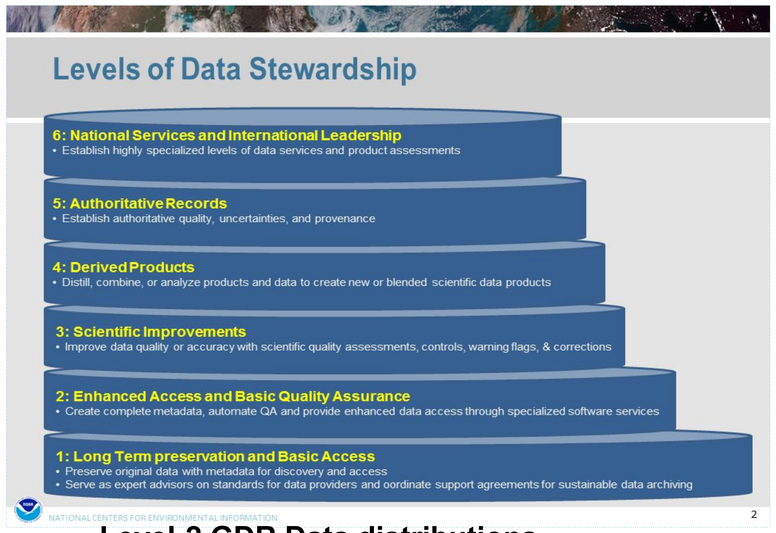
Overview

In its role as the US archive for geological, meteorological and oceanographic data, the NOAA National Centers for Environmental Information (NCEI) provides rigorous data archive, distribution, and value-added data development services for NOAA satellite oceanographic products. NCEI provides different levels of scientific data stewardship from long-term preservation to quality assurance and enhanced access, as well as development of scientifically value-added satellite products. In a basic service tier, NCEI supports OSTM/Jason-2 and Jason-3 products ingestion, archival, and basic access. In a higher service tier, NCEI develops tools to monitor and track the granule data quality assurance statistics and provides those results to the public. NCEI also provides archive reconciliation services between two data centers in NOAA and CNES that ensures they identically archive all the Jason-2/3 products.



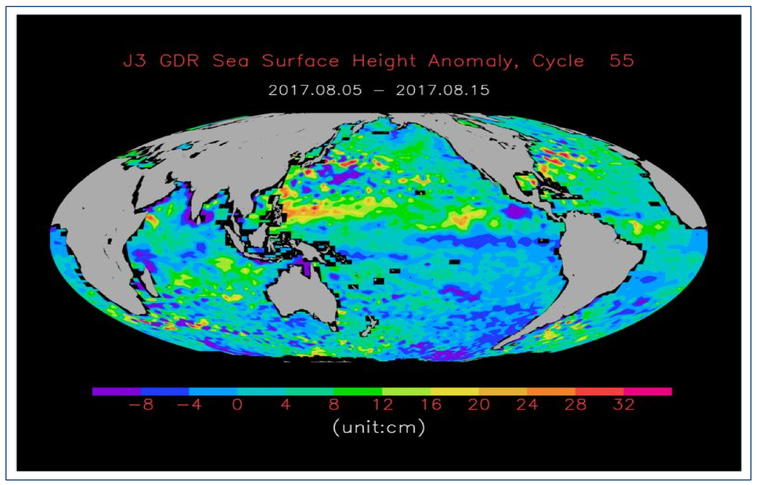
Level-2 GDR Data distributions

NCEI has instituted a mirror service, replicating all Jason-2 and Jason-3 level-2 Geophysical Data Records (GDRs) directly from NOAA's Data Distribution Service (DDS). This has reduced the latency of providing the operational GDRs to the public to under an hour.

All operation, interim and final GDRs from OSTM/Jason-2 and Jason-3 have been provided to public through ftp, http, OPeNDAP, and THREDDS servers:

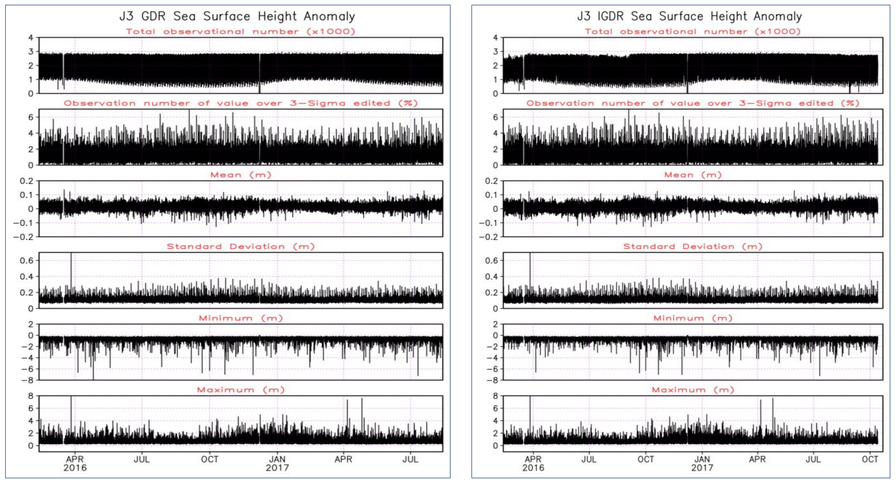
https://www.nodc.noaa.gov/sog/jason/

Real-Time Derived Gridded Data



NCEI Jason-2/3 processing system automatically generates cycle-mean 3.0°x1.0° and 0.25°x0.25° grids for the monitored Interim /Operational/GDR variables (including sea level anomaly and other 5 parameters). The 3.0°x1.0° gridded I/GDR data (in NetCDF format) are accessible via ftp, http, OPeNDAP and THREDDS Servers.

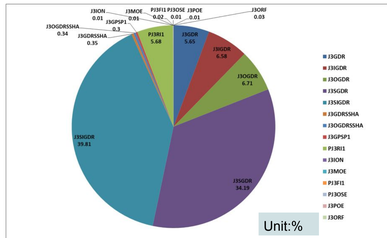
Level-2 Data Real-time Data Quality Monitoring



Data Quality Assurance statistics in each data granule of Jason-3 GDR (left) and IGDR (right).

Data quality monitoring for the OSTM/Jason-2 and Jason-3 final and interim GDRs is provided on a per-pass basis. The data quality assurance (QA) descriptive statistics are computed at the time of the data file being ingested into the NOAA archive system. Visualizations of the QA statistics are publicly accessible through the NCEI Jason data quality monitoring website: https://www.nodc.noaa.gov/sog/jason/qa.html

Products Archive and Reconciliation



NOAA/CLASS Jason-3 Products Archive:
2016-04-01 to 2017-03-31
Total = 851.084 GB

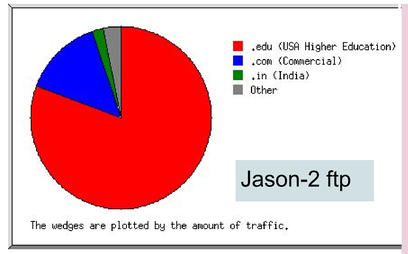
NOAA/NCEI/CLASS - CNES/SSALTO/SIPAD Jason-3 Archive Reconciliation for 2017

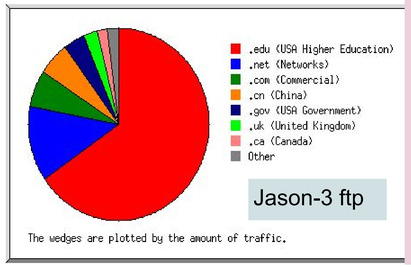
Compare names and sizes for 21 file types archived at CLASS vs. SIPAD

1. Cross-check all files from 01-APR-2016 until 31-MAR-2017
2. HKTM-R, PLTM-1, PLTM-2 telemetry not compared (neither Frames nor Packets)
3. OGDR-BUFR and Two-Line Element files not archived at SIPAD
4. Archiving at CLASS (daily) differs from SIPAD (twice/week): JA3_ORF, JA3_OS1 & SMM_POL
5. No files received for 2 file types: J3AVE and PJ3_CH1.

– This year's comparison shows 94 files 'missing' at CLASS and 0 'missing' at SIPAD.
– Missing files represent **0.115% & 0%** of ALL files received at CLASS & SIPAD, respectively.

NCEI Jason-2 & 3 Level-2 Data User Statistics
(2016-10-01 to 2017-09-30)





⇐= level-2 data users' Domain Statistics.

Volume of Data Downloading

	Jason-3	Jason-2
ftp	13.1 TB	9.4 TB
WWW	5.9 TB	2.9 TB
OPeNDAP	2.7 GB	3.0 GB
THREDDS	29.7 GB	63.6 GB

Summary

In summary, NCEI provides multiple levels of scientific data stewardship of OSTM/Jason-2 and Jason-3 products:

- Provides a mirror of all level-2 O/I/GDRs products, reducing the latency of data to the public under an hour;
- Provides data quality monitoring on the level-2 IGDR/GDRs and generates gridded cycle-mean data for the data archive manager and public users to access the data quality information in near real time.
- Provides NCEI/CLASS-AVISO/SIPAD archive reconciliation services that ensures two data centers in NOAA and CNES identically archive all the Jason-2/3 products.

Acknowledgements
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