Overview & Status of the Aquarius Phase-F Preservation Task for Mission Closeout

- Reviewed NASA/EOSDIS mission preservation guidelines & recent mission decommissioning approach (TRMM)
  Artifacts beyond the science data & documentation already at PO.DAAC include a range of items: ancillary datasets, processing software/documentation, calibration data/documentation, etc.

- Developed a checklist spreadsheet of mission artifacts from Aquarius Phases **E-F** for preservation at the PO.DAAC
  (materials from phases A-D are already archived separately at JPL and not part of this)

- PO.DAAC and GSFC teams have developed a joint inventory of artifact holdings:
  - worked together to compile outstanding materials to be physically preserved at the PO.DAAC
  - or in lieu of this provide pointers to select high volume materials to be archived in place at GSFC/OB-DAAC (eg. ancillary data).

- Transfer & archive all identified outstanding artifacts to be hosted at the PO.DAAC

- Distribute any artifacts per project request

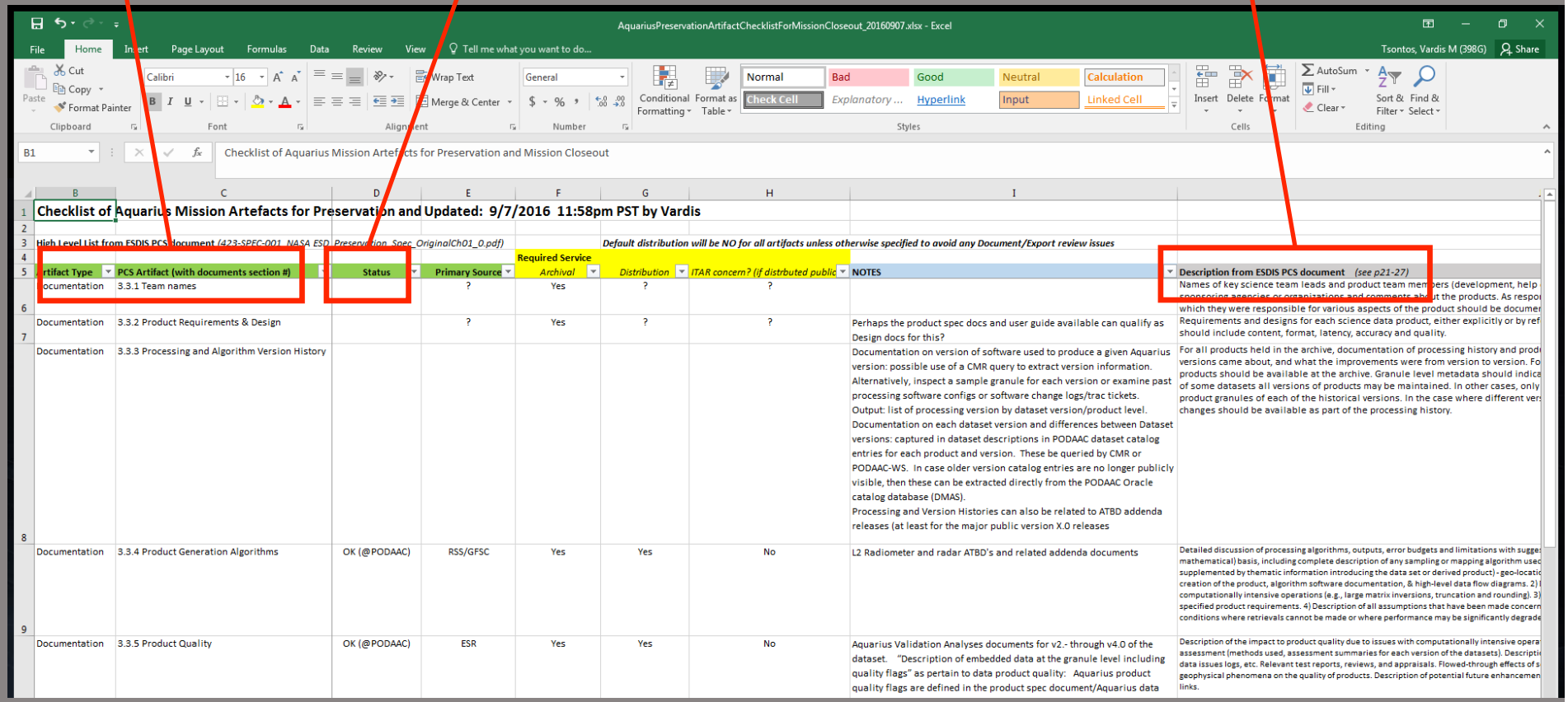
- Timelines / Milestones:
  - **Mission Operations Closeout** (Dec.2016.) - **GSFC Ops Closeout Workshop** (Oct.2016)
    Artifacts: packaged downlink data from CONAE, instrument performance reports, TRAC Event logs, lessons learned, …
  - **Science Activities & Final Closeout** (by Dec.2017) - Artifacts: All science data & finalized documentation (ATBDs, Validation reports), cal/val meeting presentations, key publications, etc. through V5.0

Preservation Inventory Checklist mapped against NASA/ESDIS Mission Artifact Closeout Requirements

Artifact type

Disposition status

ESDIS Requirement



AquariusPreservationArtifactChecklistForMissionCloseout_20160907.xlsx - Excel

Checklist of Aquarius Mission Artefacts for Preservation and Updated: 9/7/2016 11:58pm PST by Vardis

High Level List from ESDIS PCS document (423-SPEC-001_NASA ESD_Preservation_Spec_OriginalCh01_0.pdf)

Default distribution will be NO for all artifacts unless otherwise specified to avoid any Document/Export review issues

Artifact Type	PCS Artifact (with documents section #)	Status	Primary Source	Required Service: Archival	Required Service: Distribution	ITAR concern? (if distrbuted public	NOTES	Description from ESDIS PCS document (see p21-27)
Documentation	3.3.1 Team names		?	Yes	?	?		Names of key science team leads and product team members (development, help sponsoring agencies or organizations and comments about the products. As respo which they were responsible for various aspects of the product should be docume
Documentation	3.3.2 Product Requirements & Design		?	Yes	?	?	Perhaps the product spec docs and user guide available can qualify as Design docs for this?	Requirements and designs for each science data product, either explicitly or by ref should include content, format, latency, accuracy and quality.
Documentation	3.3.3 Processing and Algorithm Version History						Documentation on version of software used to produce a given Aquarius version: possible use of a CMR query to extract version information. Alternatively, inspect a sample granule for each version or examine past processing software configs or software change logs/trac tickets. Output: list of processing version by dataset version/product level. Documentation on each dataset version and differences between Dataset versions: captured in dataset descriptions in PODAAC dataset catalog entries for each product and version. These be queried by CMR or PODAAC-WS. In case older version catalog entries are no longer publicly visible, then these can be extracted directly from the PODAAC Oracle catalog database (DMAS). Processing and Version Histories can also be related to ATBD addenda releases (at least for the major public version X.0 releases	For all products held in the archive, documentation of processing history and prod versions came about, and what the improvements were from version to version. Fo products should be available at the archive. Granule level metadata should indica of some datasets all versions of products may be maintained. In other cases, only product granules of each of the historical versions. In the case where different ver changes should be available as part of the processing history.
Documentation	3.3.4 Product Generation Algorithms	OK (@PODAAC)	RSS/GFSC	Yes	Yes	No	L2 Radiometer and radar ATBD's and related addenda documents	Detailed discussion of processing algorithms, outputs, error budgets and limitations with sugge mathematical) basis, including complete description of any sampling or mapping algorithm use supplemented by thematic information introducing the data set or derived product) - geo-locati creation of the product, algorithm software documentation, & high-level data flow diagrams. 2) computationally intensive operations (e.g., large matrix inversions, truncation and rounding). 3) specified product requirements. 4) Description of all assumptions that have been made concern conditions where retrievals cannot be made or where performance may be significantly degrade
Documentation	3.3.5 Product Quality	OK (@PODAAC)	ESR	Yes	Yes	No	Aquarius Validation Analyses documents for v2.- through v4.0 of the dataset. "Description of embedded data at the granule level including quality flags" as pertain to data product quality: Aquarius product quality flags are defined in the product spec document/Aquarius data	Description of the impact to product quality due to issues with computationally intensive opera assessment (methods used, assessment summaries for each version of the datasets). Descripti data issues logs, etc. Relevant test reports, reviews, and appraisals. Flowed-through effects of s geophysical phenomena on the quality of products. Description of potential future enhancemen links.

Inventory of Science Artifact Holdings: Phase E

Archived at PO.DAAC

- Documentation:

  Aquarius Brochure and Mission Overview Document

  Product Specification Documents: L2 & L3 Aquarius Salinity Validation Analysis document (for v2-v4 of Aquarius dataset)

  Aquarius Flagging & Masks document (for v3-v4 of Aquarius dataset)

  ATBDs:

  - Aquarius L2 ATBD and addenda (for v2-v4 of Aquarius dataset)
  - Aquarius Radar ATBD and Radar RFI algorithm document
  - L3 smoothing algorithm description document

  Radiometer calibration methodology with RFI algorithm description

  Radar calibration report

  Antenna Pattern Correction (APC) updated memo (for v3.0-v4.0 of Aquarius dataset)

  Pointing correction analysis document

  Aquarius Salinity Uncertainty estimation document (for v4.0 of Aquarius dataset)

  Aquarius-Derived Sea Surface Density estimation document (for v4.0 of Aquarius dataset)

- Aquarius Datasets & Metadata:

  CalVal/Evaluation/Restricted Versions [21]: Simulated , 3.6 (61), 3.5 (67), 3.4 (67), 3.3 (67), 3.1 (67), 2.10.1 (67), 2.9.1 (49), 2.8.1 (49), 2.7.1 (28), 2.6.1 (1), 2.5.1 (28), 2.3.1 (25), 2.3 (25), 2.2 (25), 1.3.9 (9), 1.3.7 (13), 1.3.6 (13), 1.3.5 (13), 1.3.4 (13), 1.3.2 (13) , 1.3.1 (15)

  Public/Validated/Open Versions [3]: 4.0 (98), 3.0 (67), 2.0 (34); L0 (1), L1A (2)

  Public/Validated/Registration Versions [7]: 1.0 (19) , 1.1 (1) , 1.2 (17), 1.2DR (13), 1.2.2 (13), 1.2.3 (15), 1.3 (15) Miscellaneous CalVal datasets/versions [8]: MWR L1 (5), MWR L2C (2), RIM (1), HYCOM (1)

  Dataset and granule metadata catalogued and searchable for each of the aforementioned datasets and types

- Ancillary Datasets and Descriptions (@ADPS)
- Aquarius Processing Software and Documentation: SeaDAS (@ADPS)
- .....

Aquarius Mission Operations Artifacts for Preservation: Phase E

- Raw downlink telemetry data during Science Operations (from CONAE – All at GSFC)
- Mission operations Event logs
- Instrument Performance Reports
- Lessons Learned - Science Mission Operations
- *Other*?

Disposition of Inventory Items

- The PODAAC will physically store operations-related documentation.
- OBPG will provide documents to be added to PODAAC's repository of items.
- OBPG will provide links to software, tools, and web interfaces that will remain active.
- The final, password protected repository resides on samoa and can be accessed via Aquarius Mission website. http://aquarius.umaine.edu/cgi/sci_links.htm