**First In Class Work Flow:**

**Arrays and Platforms used in First In Class check:**

**Pioneer**: CP05MOAS-GL388, CP02PMCI

**Endurance**: CE09OSSM, CE01ISSP

**Global**: GI01SUMO, GI02HYPM, GI03FLMA

**Cabled**: RS01SBPS, RS01SBPD, RS01SLBS, CE04OSBP

**Key Notes**:

* The purpose of the First in Class checks is to use a subset of representative platforms to ensure that data can be accurately and completely delivered through the system end to end for all instrument types, from the in-water sensors to the display and download of calibrated data products, checking each step in between (As outlined in the test cases below).
* Following the First in Class checks that ensure that the system can deliver data within the required specifications, we will be checking all instruments on all platforms on all arrays to catch any individual errors and do complete quality control checks.
* The Subject Matter Expert effort will assist in this process by providing outside validation of the OOI data algorithms and calibration values, especially for some of the unique instrument classes that have less available documentation or publication record to consult.
* Data files are created by stream.
* Each instrument can have multiple science and engineering streams.
* Only science parameters are checked for reasonability.
* Engineering streams are checked for presence/absence and list of parameters.

**Data Request**:

* Select a platform and a deployment time range.
* Run data requests on the production server: [http://ooiufs01.ooi.rutgers.edu](http://ooiufs01.ooi.rutgers.edu/)
* Push received data files to the First In Class folder on the THREDDS server.
* Plot data (.ncml files) using the OOI data team toolbox.
* Post plots to the data team webpage.
* Extract computed provenance from data files (.nc files) and check for errors.
* Read provenance off the URL data request to identify raw data files and driver/parser paths.

**Test Suite**:

* Use test cases to check presence and absence of data products and evaluate data reasonability.
* Use status to mark test cases (see below).

**Test 1**: Reference Designator Availability Test

*Testcase:* This instrument reference designator is available for download.

*Reasoning:* Check the database against what the system returns when a data request is submitted.

*Status:*

Pass [Expected instrument is available]

Fail [Expected instrument is not available] *report in redmine*

**Test 2**: Stream Availability Test

*Testcase:* This stream is available for download.

*Reasoning:* Check the database against what the system returns when a data request is submitted.

*Status:*

Pass [Expected stream is available]

Fail [Expected stream is not available] *report in redmine*

Modified [stream ID used in the database is no longer used by the system] *update database*

**Test 3**: File Parameter Test

*Testcase:* This stream file has all parameters listed in the database.

*Reasoning:* Check the database against what the system returns in the data files (.ncml files).

*Status:*

Pass [Data products listed in the database are available in the data file]

Fail [Data products listed in the database are not available in the data file] *synchronize database*

Blocked – Instrument Unavailable [Expected instrument is not available] *report in redmine*

Blocked – Stream Unavailable [Expected stream is not available] *report in redmine*

**Test 4**: Database Parameter Test

*Testcase:* This stream in the database has all parameters listed in the stream file.

*Reasoning:* Check the data files against what is in the database.

*Status*:

Pass [Data products listed in the data file are available in the database]

Fail [Data products listed in the data file are not available in the database] *synchronize database*

Blocked – Instrument Unavailable [Expected instrument is not available] *report in redmine*

Blocked – Stream Unavailable [Expected stream is not available] *report in redmine*

**Test 5**: Provenance Errors

*Testcase:* One stream NetCDF file has no provenance errors.

*Reasoning:* Check data errors reported in the computed provenance listed in the data files.

*Status:*

Pass [Provenance is not listing any data products generation errors]

Fail [Provenance is listing errors on data products generation] *report in redmine*

Blocked – Instrument Unavailable [Expected instrument is not available] *report in redmine*

Blocked – Stream Unavailable [Expected stream is not available] *report in redmine*

**Test 6**: Parser Test

*Testcase:* One raw data file passes the parser/playback test.

*Reasoning:* Run system parsers on the OMC identified raw data files and check the data output arrays against what is in the data files and the log files for parser errors. NOTE: if the log files have warning about data being omitted from the output data files a redmine ticket is communicated to the MIO for possible solutions to salvage data.

*Status:*

Pass [Parser output match exactly the data and the log files have no parser errors]

Fail [Parser output do not match exactly the data and/or log files are returning parsers errors] *report in redmine*

Blocked – Instrument Unavailable [Expected instrument is not available] *report in redmine*

Blocked – Stream Unavailable [Expected stream is not available] *report in redmine*

**Test 7**: Algorithm Test

*Testcase:* This stream passes the algorithm input/output check.

*Reasoning:* Check the data algorithm outputs against what is in the data file.

*Status:*

Pass [Algorithm log file data output match exactly the data]

Fail [Algorithm log file data output do not match exactly the data] *report in redmine*

Blocked – Instrument Unavailable [Expected instrument is not available] *report in redmine*

Blocked – Stream Unavailable [Expected stream is not available] *report in redmine*

**Test 8**: Parameter Availability Test

*Testcase:* This science parameter is available in file.

*Reasoning:* Check presence absence of parameters in the system data files.

*Status:*

Pass [Expected parameter is listed in the data file]

Fail [Expected parameter is not listed in the data file] *report in redmine*

Blocked – Instrument Unavailable [Expected instrument is not available] *report in redmine*

Blocked – Stream Unavailable [Expected stream is not available] *report in redmine*

**Test 9**: Parameter Reasonability Test

*Testcase:* This science parameter is plotting with reasonable values.

*Reasoning:* Check parameters reasonability against global ranges and consult with MIO and SOC to confirm the data status.

*Status:*

Pass [data look reasonable]

Fail [data look unreasonable] *report in redmine*

Suspect [data need further investigation]

Blocked – Instrument Unavailable [Expected instrument is not available] *report in redmine*

Blocked – Stream Unavailable [Expected stream is not available] *report in redmine*

Blocked – Parameter Unavailable [Expected parameter is not available] *report in redmine*

**First In Class working Google sheets:**

Pioneer [[link](https://docs.google.com/spreadsheets/d/1uGT-Bh8bAfYnW0WWm7Y3eCGKsrQueercS2BVT4izoac/edit#gid=1262088199)]

Cabled [[link](https://docs.google.com/spreadsheets/d/1BuHLOIlURSX7V8fjqra6l9i_8q9RYLkfycGM8QfQZZE/edit#gid=2089883607&fvid=1993046414)]

Endurance [[link](https://docs.google.com/spreadsheets/d/1XwEu6OBFS8zKrDQGrFiOi41ADeucriPl0w28DFQ1-A0/edit#gid=507681874&fvid=1978561967)]

Global [[link](https://docs.google.com/spreadsheets/d/1uTHz17nxdXi5jy0AdxTZx8EW5SKyVvIpvmqGQ5ZjKRU/edit#gid=300358395)]

Summary [[link](https://docs.google.com/spreadsheets/d/14T4qvjLT4E3PWEDZWqmQmXC67A-T66JZs7cVIfMwk7k/edit#gid=242154222)]

**Google sheets** **Chart Key:**

* *% Complete*: refers to the number of test cases that have been completed out of the total number test cases per Array, Platform, or test cases.
* *Pass of Complete*: refers to the number of test cases that were completed and their status marked as Pass.
* *n = number of instruments.*