# 2019-05-09

Yannick opened the meeting by announcing that Travis-CI has been enabled on the OOPS repository. This fires off the ctest suite on the OOPS repo whenever pull requests are initiated and whenever commits are pushed to existing pull requests. We will go with Travis-CI on only the OOPS repository for another few weeks to flush out and fix any issues with the Travis-CI configuration. Once that is done, we will enable Travis-CI on the other JCSDA repos.

Yannick also introduced two new JCSDA hires: Mark Olah and Clementine Gas. Mark will be working on a user interface to automatically configure and run DA flows in JEDI. Clementine will be continuing the work she performed as an intern (EDA and block methods).

## EMC/GMAO

Guillaume is coordinating/assisting with the effort to integrate new UFO operators in the SOCA flow.

Emily Liu is ramping up to speed on UFO and is learning about GSI obs and geovals data.

Cory has written tests for the GSI ncdiag ioda converter scripts of which have been merged into develop. He is currently working on a script to combine the separated variable files (one file for each of t, q and uv) into a single file for conventional obs.

Andrew is developing the capability to subset channels in CRTM, and is coordinating this work with Anna.

Rahul is refactoring the ioda converter script build process with the goal in mind to provide the library style scripts as standard python packages. This will be done in steps and the first step is to separate the bin scripts (those run from the command line) and the library scripts (those imported by the bin scripts), and install the bin scripts and library scripts into appropriate directories. A pull request for this step has been issued and is under review. Rahul will work next on getting the BUFR to netcdf flow updated and working with the NcWriter class.

Rahul asked about the availability of ODC and Yannick responded that ECMWF is finishing up the C++ interface and ODC should be available in 2 or so weeks.

Hamideh has fixed (eliminated) the infinity values in the GMI obs files (pull request has been submitted), and is currently resolving some QC issues with her obs operators.

Jong Kim ❓ was introduced as a new team member who will be helping with the ICEPACK and CICE6 model integration.

Dan has completed a code sprint that developed the in-core hofx functionality. He is also working on high resolution GEOS runs, and incremental background runs at low resolution.

## Met Office

Marek reported that LFRic has been updated with the latest develop branches.

## Boulder

Anna announced that she will be working on migrating operators using log pressure vertical coordinates to air pressure, and migrating all the geovals files containing pressure coordinates to use units of Pascals. This will require the regeneration of some of the geovals files. She asked if there were any model cases that would have an issue with providing air pressure in their GetValues method. Marek responded that LFRic will be able to handle this.

Steve V is continuing work on the MPAS interface.

Ming reported that some of his variational flows which used to work are now crashing (he noted that this is on his laptop in Singularity instead of Cheyenne, which may or may not be relevant) and he is investigating. Yannick asked Ming to put the WRF interface into a repository in the JCSDA github to facilitate catching changes that could be affecting WRF. Ming and Xin noted that the interface is already in a JCSDA repo but there is no develop branch yet. It was determined since hofx and forecast are working in Singularity, that this functionality was enough to warrant creating the develop branch. The benefit of verifying changes outside of WRF as they are introduced in pull requests is high, and the fix for the variational flow could be merged in later on.

Xin has a pull request under review for a refactoring of the ObsBiasAuxillary class (which is a step needed for his Bias Correction work).

Steve H reported that the ioda-converters repo now has 16 tests running. 2 of these tests are failing but these are coding norms tests which are straightforward to fix. There are 3 more coding norms tests passing, leaving 11 passing tests that are verifying conversion script functionality. Steve thanked everyone's hard work to get this result, and noted that it is very helpful to have these tests up and running.

Steve H announced that he will be working on fixing the missing value handling in the IODA reader next. Currently the reader substitutes missing value marks for any datum with an absolute value greater than 1e8. The end goal is to have specific values represent missing values instead of number ranges which will reduce the chance of confusing "bad" data with "missing" data. For the IODA netcdf reader, we will replace the "greater than 1e8" scheme with the specific netcdf "fill" values for the different data types. The ioda converter scripts will be required to use the netcdf fill values to mark missing values (which for the most part are already doing so).

Hailing reported very good matching between GSI and JEDI hofx for GNSSRO operators. She will be working on 3DVar comparisons next, once the current Cheyenne maintenance cycle is completed.

Mark announced that there exist new CharlieCloud and Singularity containers. These are currently available for testing and are denoted with "hpccm" in their names. Please download and test these and report any issues back to Mark. See this link for instructions: https://github.com/orgs/JCSDA/teams/jedi /discussions/26. Once these are verified, they wil be moved to the "latest" versions. One thing to note is that fckit is absent from these containers. We make changes to fckit with enough frequency to warrant making fckit part of the bundle builds. This will help reduce thrashing the containers with fckit updates. When we move to the hpccm containers, we will update the bundle CMakeLists.txt files to include fckit in the build by default. The hpccm containers have new packaging which include nco, nccmp, boost headers only, eccodes and ncep libraries, plus the same python capabilities as before.

Mark noted that a new jedi-stack methodology has been implemented of which was used to build the hpccm containers. The goal of this work is to produce containers that have near native performance on HPC systems. The new hpccm containers are step 1 toward this goal.

JJ is working on getting CRTM to simulate hyperspectral IR instruments. He is currently addressing an issue with USGS land types and how these are related to surface emissivity. He is building a new emissivity file for these land types and integrating that into CRTM.

Yali is working on surface pressure assimilation and reported an issue with a bias not being included in departure calculations. Yannick responded that he has fixed this, and the fix should be merged in soon.