2018-11-29

There was no special topic for this week, so Yannick opened the floor to updates and issues from everyone.

Marek was testing the background filter and asked if it was supposed to be passive. Yannick confirmed that there is a piece missing and he has a branch with the fix which will be merged soon (flags are implemented but not yet activated). Marek announced that he is caught up with the numerous changes that went into JEDI leading up to the academy. lfric-bundle has 3DVar working on their HPC system.

Steve S mentioned that he has made lots of progress on the LFRic update, and is getting close to issuing a pull request. In particular, he has finished with the aquaplanet implementation.

JJ is working with Anna to move the Locations class from IODA to UFO. This work is just now getting underway.

Steve H reported that a merge occurred yesterday that contained a fix for a program crash that happened when the GnssroRef obs type was added into the FV3 hofx test. As part of this merge, the FV3 hofx test was enhanced by including the GnssroRef obs type. This means that the unit testing will continue to verify that the GnssroRef obs type is working. Steve also announced that the next big project he will be working on will be increasing the number of available obs types in IODA. He will be working with Steve V from NCAR on this project. Steve H will focus on making all of the obs types that were assimilated in the GSI April 15th run available, and Steve V will work on making UK Met Office obs data available. Yannick commented that this is part of a broader effort to get more instruments into JEDI. We'd like to have the data files ready for testing so teams can efficiently implement the coding that goes with them.

Marek asked how they can get their required obs types into IODA. Yannick responded that he is developing a list, initially with EMC, that will keep a record of the required obs types. Yannick will post this list soon on Google drive, and encouraged those who need particular obs types to add them to this list. We will announce this on the GitHub teams when it is ready for contributions. Yannick mentioned that we should use ZenHub to track the progress of the availability of the obs types on the list, whereas the list is just to make sure we don't forget something. JJ asked if the surface and station obs will all use the conventional profile, and Yannick confirmed that most, though not all, of these new obstypes will fall under this category.

Xin reported that he is near a pull request for the C++ implementation of ObsSpace.

Francois said that he worked this past week with Steve H and Hailing on the GnssroRef hofx crash problem.

Mark M announced that the slides and content from the academy have been posted on the jcsda.org website. Click on the Workshops button, then follow the link for November 2018, College Park, Maryland . This site can also be accessed via the link: academy.jcsda.org.

Mark M reported on his work with containers. Singularity has gone through many recent changes (new website, new instructions, new version, etc.) so the JEDI documentation for Singularity has been updated accordingly. 3.0 is the latest version of Singularity and everyone is encouraged to update to 3.0. Singularity 3.0 has new installation instructions, and is based on the GO language (which will also need to be installed). Updating to 3.0 is not urgent since we will be providing JEDI Singularity 2.6 images while everyone gets updated to 3.0. Singularity 3.0 is backward compatible with the 2.6 images, but not the other way around. See the JEDI ReadTheDocs section on Singularity for instructions to update to 3.0. Mark is exploring a new container system called charliecloud which offers the advantage over Singularity in that you do not need to be root to install it. He hopes to have a JEDI charliecloud container later today. Mark will create documentation for charliecloud and keep everyone updated on his progress.

Ming has made a lot of progress on WRF. He has the model interface working and is trying out the hofx functionality. At this point only radiosondes are being assimilated, and he plans to try AMSU-A next.

Hailing was working this past week to get the hofx crash problem fixed. At this point the GNSSRO hofx is working and she is now trying to do 3DVar. Hailing ran into an issue with the processing of QC flags. Yannick confirmed that the QC flags are not being properly handled at this point. He has a branch with a fix for this, but the branch has not been merged yet.

Ben J announced that he has CRTM working for GMI simulation. The key was to get a proper data file built for CRTM. Now that this path has been solved for GMI, CRTM should be able to handle many different sensors once the proper data files for those sensors have been built. The other inputs required for a new sensor are the obs and geovals data.

Dan reported that he is creating cmake scripts to get FV3 to build with GFS and GEOS libraries. He should have this working soon. Dan is also working on the static B matrix and a Poisson solver. He is also running into issues with the locations in 4D obs handling. Dan briefly discussed two implementation options with Yannick to address these issues (having to do with how subwindows and binning are treated), and this discussion will be taken off-line.

Guillaume asked a question related to QC filtering and interpolation weight calculations. In the outer loop, Guillaume was not seeing the number of obs changing, so it seemed that there was no need to recalculate the weights on each iteration. Yannick responded that this will change in the future. He gave the example of rapid refresh which will have the number of obs changing in the outer loop. The consensus was to leave the recalculation of weights in the outer loop so that future functionality, such as rapid refresh, can be accommodated.

Guillaume reported that work is being done on two new obs types: SMAP and AVHRR.

Sarah (NRL) announced that work on integrated Neptune into JEDI has started. They have downloaded the latest version (develop) and are moving forward with building and running JEDI.

Marius is planning on furthering the development of the AOD obs operators soon. He will start with filling in the TL/AD functionality.

Chris H reported that he has a shallow water (toy) model working in JEDI. Non-linear and TL/AD flows are working. This is a toy model that will be used to test the parallel functionality of JEDI. He started with a pure cmake configuration for the shallow water model, which successfully builds, but is running into issues when he tries building with ecbuild. Chris is working with the core team to get the ecbuild issues resolved.