

Summary of the ESMF Change Review Board Meeting on April 9, 2012.

Attendance:

Robert Ferraro/JPL, Cecelia DeLuca/NOAA/CIRES, Alan Wallcraft/NRL SSC, Tom Black/NOAA, Scott Sangathe/NUOPC, Tim Campbell/NRL SSC/NUOPC, Marianna Vertenstein/NCAR, Atanas Trayanov/NASA GSFC

Agenda

The CRB covered the following topics during its meeting:

- Review development status

- Update development schedule

A synopsis of the discussion and decisions from the meeting is presented below. It is organized by agenda item. These notes attempt to capture the high points of the discussions, and any decisions that resulted.

Development Status Review (Cecelia DeLuca)

DeLuca reported on the status of the V5.3.0 release, which is due for release within a couple of weeks. Three items due in the release have been deferred due to lack of sufficient progress:

- Improved polygon intersection for conservative regridding (now v5.3.1)

- Restructuring of reconcile to improve robustness

- Modification of the FieldBundleCreate packing behavior

One item scheduled for v5.3.1 has been completed ahead of schedule, and is to be included in v5.3.0:

- Single tile GridSpec support in offline regridding

The rest of the scheduled items for v5.3.0 are done, including removing the LAPACK dependency from the ESMF build. The code freeze for the release was expected to occur within days of the CRB meeting.

Current Schedule Review

Release of v5.3.1 will be pushed back to July. The CRB discussed the content of v5.3.1 to adjust priorities.

Members were polled regarding their current priorities for ESMF development.

GSFC identified the availability of the adjoint of the conservative regridding as needed for their GEOS6 development. There is no immediate need, but is considered a high priority for NASA. Progress by the end of the calendar year is desirable. (added in v5.3.2)

Nearest neighbor for regridding capability was identified by UCAR as a desired feature, along with a general need for mode that would provide bit level reproducibility. This is a diagnostic capability needed for validating code ports and other changes. The bit level reproducibility depends on that capability being available in the sparse matrix multiply facility. This task was added to the development schedule. (v5.3.1)

A request was made to DeLuca by representatives of the CMIP community for enhanced offline regridding capabilities accessible from Python in conjunction with their analysis tools.

A public release of extensions for NUOPC is desired by the end of the calendar year. Funding changes have resulted in some delay in the NUOPC development.

Offline regridding has some unknown internal limitation that is affecting high resolution grids. The high resolution requirement is being driven by new land models with 1 km resolution. The impact is to CESM. Diagnosing the problem is difficult due to the high computational requirements for running test cases. (debugging to continue, but completion date is unknown.)

Parallel read capability is still a problem. The recommendation is to worry about the implementation first, and then concentrate on scalability. (added to v5.3.2)

Next Meeting

To improve the efficiency of development discussions with the CRB, DeLuca proposed added Gerhard Theurich and Bob Oehmke to future CRB telecons. The CRB approved their participation.

The next meeting will be scheduled to take place in July, 2012, in preparation for the v5.3.1 release.