

Summary of the ESMF Change Review Board Meeting on Mar 28, 2006 in Pasadena, CA.

Attendance:

Robert Ferraro/JPL, Cecelia Deluce/NCAR, Atanas Trayanov/NASA GSFC, Alan Walcraft/NRL SSC, Chris Hill/MIT, Mark Iredell/NOAA, Mariana Vertenstein/NCAR, Tom Clune/NASA GSFC

Agenda

The CRB covered the following topics during its meeting:

Status of Tasks scheduled for the v3.0.0 Release

- Adjust release content, delivery date, as needed
- Adjust Public release v3.0.0.0r delivery date, as needed

Review of JST Telecon input

Update to the development and public release schedule for v3.1.0 and beyond

- Acceptance of any new functionality proposals
- Proposed changes to the schedule
- Validate/adjust future development task schedule

Other topics to be added as requested

- Use case discussion

Next CRB Meeting

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.

Status of Tasks scheduled for the v3.0.0 Release (Cecelia Deluca)

ESMF v2.2.1 was released in Feb. An additional internal release, v2.2.2 was made available in Mar prior to the CRB meeting.

Cecelia Deluca presented the status of the tasks scheduled for internal release v3.0.0. The status for each task is listed below. Tasks marked in **yellow** are Release Required Tasks. Tasks in *red italics* are expected outside contributions..

Task	Status
Makefile cleanup	Completed and released in v2.2.2
Read/write and multiply interpolation weights	Multiply and distribute completed. Read/write will not be part of the release. See discussion below
Log methods go through same write and open/close issue	Completed
Run and optimize for X1, IBM and NEC	Completed for X1 & IBM. NEC not available
<i>Add component and state C++ interfaces*</i>	Some functionality completed

<i>Location stream implementation*</i>	Not available
2D redist for arbitrary to arbitrary distribution	Will be available by the release date

The Read/Write interface for interpolation weights was not implemented due to a lack of agreement within the user base on a standard interface for the functionality. The Core Team proposed that the task be modified to remove the read/write functionality, and require users to provide their own input mechanism for reading weights. The ESMF interface will take weights from 1 PE and do the required manipulation and distribution across multiple PEs. The CRB accepted the proposed modification and renamed the task “Input from one PE and multiply interpolation weights”.

Testing was still required for some functionality in the v3.0.0 release. The CRB agreed to a new release date of Apr 2006. Location streams were deferred to the next release. The modified v3.0.0 release will become the public release, which was delayed until July 2006 to preserve the 3 month beta test period.

Review of JST Telecon input

Update to the development and public release schedule for v3.1.0 and beyond

The CRB reviewed the input from the joint JST/CRB telecon held on Mar 23. The discussion uncovered some implementation questions for regridding of various types of grids and vector fields which will require further discussion with the JST. In most cases, there were questions about what the interface requirements might be, or how to actually implement the functionality. More discussion between the JST and the Core Team is required to further specify the functionality. The telecon review merged into the update of the schedule for v3.1.0 and beyond.

The CRB examined some of the currently scheduled tasks, and concluded that they were too broadly defined. There was a desire to break them up into smaller, more specific tasks which would have narrower expectations. The CRB then deleted the following tasks from the schedule, with the intent of replacing them with multiple, focused tasks:

Support for general curvilinear coords
Continued IO development
Read/write grid spec

The following tasks on the schedule were revised based on the CRB discussion regarding broadly defined task definitions;

Old Task Name	New Task Name
Initial IO prototyping and implementation	CFIO integrated
Array gather implemented	Merge new and old array with respect to regridding
Preliminary design and implementation of unstructured grids	<i>Returned to the Unscheduled pool of tasks awaiting further study</i>
Incorporate Tau performance profiler	Easier interface to using Tau performance

profiler

From the discussions that resulted in the deletion of previously scheduled tasks, and proposals for new tasks from the JST telecon, the CRB defined the following new tasks to be added to the schedule:

- Continue fix of noncritical memory leaks
- Input from multiple PEs and multiply interpolation weights
- Complete rectilinear grids: poles, stagger, coords
- File-based grid spec for multi-patch curvilinear grids&
- Implement new Array gather and other basic methods
- Implement regridding for specific curvilinear grids
- Config set implemented
- Extend CFIO to address read/write interp weights
- Fix halt on error problem
- Implementation of regrid for multi-patch curvilinear grids
- Handles for Fortran units

The schedule for v3.1.0 and beyond was modified to focus in the near term on the completion of support for rectilinear grids, provide some curvilinear grid support, and regridding.

[the adjusted schedule has been posted to the ESMF web site, and is included below for reference.]

Use case discussion

The CRB spent some time discussing the utility of use cases in defining development tasks and setting expectations for the outcome of those tasks. No consensus was reached among the members.

Next Meeting

The next CRB meeting will take place on June 13, 2006. NCAR will host the meeting in Boulder, CO.

ESMF Release Schedule

Apr 2006

INTERNAL RELEASE: ESMF v3.0.0

Input from one PE and multiply interpolation weights
Log methods go through same write and open/close issue
*Add component and state C++ interfaces**
Run and optimize for X1, IBM and NEC
2D redist for arbitrary to arbitrary distribution

Jul 2006

PUBLIC RELEASE: ESMF v3.0.0r

Oct 2006

INTERNAL RELEASE: ESMF v3.1.0

Developer time on testing old capabilities - regrid
Complete rectilinear grids: poles, stagger, coords
Merge new and old array with respect to regridding
*3D regrid**
Implement regridding for specific curvilinear grids
*File-based grid spec for multi-patch curvilinear grids**
Continued testing for CCSM evaluation
Config set implemented
CFIO integrated
*Location stream implementation**
Datatypes consistent across framework

Jan 2007

PUBLIC RELEASE: ESMF v3.1.0r

Feb 2007

INTERNAL RELEASE: ESMF v3.1.1

Implement new Array gather and other basic methods
Implementation of regrid for multi-patch curvilinear grids
Initial exchange grid implementation
Fix halt on error problem
Continue fix of noncritical memory leaks
Developer time on testing old capabilities - state/regrid
system tests and demos for reconcile and ensembles
make reconcile more robust for large states
Mask implementation
Interlanguage implementation consistency

Not Yet Scheduled

Easier interface to using Tau performance profiler
Add VM documentation
Implement transforms
More options for vertical grids
2nd order conserv regrid
Asymmetric halo updates
New array halo
Handles for Fortran units
Input from multiple PEs and multiply interpolation weights
Extend CFIO to address read/write interp weights

Color Key

Internal Release (Beta)

Release Required Task

Release Expected Task

Expected Outside Contribution

Public Release