Proposal: MPI Forum Procedures
Version 1.2

The MPI Forum

February 18, 2013

Chapter 1

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NOTE: This chapter is purely for reference only. It is a copy of an older document that the Forum requested we include in this document for reference/comparison to the other chapters. To be 100% clear: *this chapter is not part of our proposal.*

Here is the description of the process for updating the MPI standard for MPI-3.

- The only items that may go into the standard are items that the Full Forum has approved
- There are two types of changes to the standard
  - Small changes that chapter working group has agreed upon, and does not require any sort of ticket voting process. These include small clarifications to the standard and do not involve new interpretation of the standard. These will be accepted into the standard in the chapter review process. If we want to get these into a draft standard (type corrections) a single vote, on a per-chapter basis, can be made, as we still have the final chapter vote process to review all changes. The main intent here is to avoid a laborious voting process for simple typos. At the chapter committees discretion, a ticket may be created for such items to help explain the reasoning for a given set of changes.
  - Large changes RMA, FT, New tools functionality, ... - require a full voting process, which is described below.
  - For medium type of changes, it is up to the chapter authors to decide into which class these fall.

- The golden standard, which is used for the release of draft standards, is updated only after the Forum has voted these in.
- The process for adding new functionality to the standard:
  - Proposal from the working group. This proposal will be discussed in great details at least one meeting before the full forum starts considering the proposal for inclusion into the standard.
  - An implementation available for examination and experimentation should be available before considering the proposal for inclusion into the standard. The forum can also accept a convincing argument that an implementation is possible, with a simple majority vote.
  - A formal reading is required at least one meeting before the formal voting process starts. If required changes to the proposal cant be made as part of the formal reading session, another formal reading is required. Such a formal re-reading should be not before the next day after the changes. Minor wording changes do not constitute a change, for the purpose of this purpose.
  - Two votes at different meetings must pass, by a simple majority, to be added into the standard. Voting may start at the next meeting after the formal reading.
- Final chapter votes require a single vote, and pass by a simple majority. The final chapter vote includes:
  - Correct and consistent inclusion of all accepted new functionality.
  - All the minor and medium changes that have not been voted so far.
- The final chapter vote requires:
  - A formal reading is required at least one meeting before the formal voting process starts.
  - This formal reading may include already new functionality that is still in the voting process.
  - The formal reading must be announced on the meeting agenda at least one week before the forum meeting, together with clear information on where to find the make reviewdoc pdf file, which includes the colored removals/changes/additions together with ticket numbers according to the currently valid macro set.
  - This formal reading requires also the make reviewchangeonlydoc pdf file, which has identical text content as the final document, but all changes since MPI-2.2 are still colored.
  - Changes to the document during the formal reading require a re-reading; this may happen no sooner than the next day of the same meeting. For this, a new reviewdoc and reviewchangeonlydoc pdf must be available.

  - In case of new functionality or significant clarifications, the chapter changes must be reflected also in the Change-Log appendix. Deprecating of functions of the chapter must be reflected in the Deprecated Functions chapter. This must be reported in the ticket and in this case, the pdf file must include also these modified chapters. (All chapter authors have write access to the latex source of Deprecated since MPI-3.0 and Changes from Version 2.2 to Version 3.0.)

- Usage of the SVN trunk svn/mpi-forum-docs/trunk/MPI-3.0/
  - SVN Revision 495 is identical to MPI-2.2 after removal of the MPI-2.2 change macros. It is the basis for all text changes in MPI-3.0.
  - SVN Revision 691 is identical to the MPI-3.0 Draft document from Nov. 12, 2010.
  - Before a chapter formal reading, all changes must be done in this trunk, i.e., formal reading and voting is based on pdfs produced in this trunk (which is the development trunk), because this is the last final correctness check of a chapter.
  - Should changes to a chapter be rejected, the chapter author is responsible for removing those rejected changes and restoring the chapter to its prior, approved version.
  - All chapter reading and voting must report the SVN revision number in the agenda and the voting protocols.

- Reporting of progress:
  - For votes on tickets, the ticket is always updated to reflect formal readings and votes.
  - For votes on chapters, a special ticket must be opened by the chapter author. This ticket is used for providing the pdfs, announcements at the agenda, and reporting of all formal reading and voting.

- For the purposes of voting, a simple majority is defined as a simple majority of those present and eligible to vote.
  - Voting is by institution, with each institution receiving one vote.
  - To be eligible to vote, the institution must have been represented at two of the last three meetings, where the last three meetings includes the current meeting.

Chapter 2

Voting Rules

2.1 Intent

This chapter was written with the following goals in mind:

1. Provide clear, unambiguous definitions and procedures for voting on general text proposals, errata proposals, and changing this document.
2. Enforce a high degree of consensus before text is accepted into the MPI standards document.
3. Disallow arbitrary abuse of voting procedures.

This proposal only details *official ballot* voting definitions and procedures. Unofficial voting procedures, such as "straw" votes, are outside the scope of this document.

2.2 Definitions

1. **Physical MPI Forum Meeting:** An open meeting of the entire MPI Forum in a physical location (vs. a teleconference or other virtual meeting). In-person attendance to the meeting is open to all organizations in the MPI Forum as well as the general public.
2. **Organization:** A business entity that sends one or more representatives to a physical MPI Forum meeting.
3. **Registration:** Individuals register for each physical MPI Forum meeting that they will attend. At the time of registration, individuals declare which organization they will represent at that meeting.
4. **Overall Organization Eligibility (OOE):** An organization is generally eligible to vote if it has registered and had one or more representatives physically present at two out of the last three physical MPI Forum meetings (including the current meeting).

5. **Individual Meeting Organization Voting Eligibility (IMOVE):** An organization is eligible to vote at a specific physical MPI Forum meeting if all of the following are true:

   (a) The organization is OOE.

   (b) An individual representing this organization registered for that specific physical MPI Forum meeting before the first ballot occured.

   (c) The organization had at least one of its representatives physically present at during that specific physical MPI Forum meeting.

   Once an organization becomes IMOVE for a specific physical MPI Forum meeting, that organization stays IMOVE for the remainder of that specific physical MPI Forum meeting. For example, if an organization's only representative leaves the meeting, that organization still remains IMOVE.

6. **Meeting Quorum:** Quorum is established at a physical MPI Forum meeting when more than $2/3$ of OOE organizations have registered for that meeting.

7. **Individual Ballot Quorum:** Quorum is established for an individual ballot when more than $3/4$ of IMOVE organizations at the meeting cast a vote (vs. abstain). The number of IMOVE organizations is counted at the beginning of each ballot.

2.3 Procedures

2.3.1 Official Ballot Voting

Official ballot voting and formal readings occur only at physical MPI Forum meetings where a meeting quorum has been established.

All official ballots must be announced and scheduled at least two weeks prior to the start date of the physical MPI Forum meeting at which they will be held. The dates/times for official ballots will not change after two weeks prior to the beginning of the meeting to allow attendees to schedule their travel appropriately.

For each official ballot, each IMOVE organization is individually polled for their vote. The designated representative of an IMOVE organization may vote "yes," vote "no," or abstain from voting. If no representative of an IMOVE organization is physically present at the time of the ballot, that organization has implicitly abstained.

A ballot passes if:

1. The ballot meets the requirements for the individual ballot quorum, and

2. The number of "yes" votes is more than $3/4$ of the sum of "yes" and "no" votes.

Rationale. The first condition prevents large numbers of abstentions from skewing results. The second condition sets a high requirement for consensus before a ballot will pass. (*End of rationale.*)

Note that if a ballot fails to meet the required individual ballot quorum, the ballot can be re-cast one time at the same physical MPI Forum meeting. The ballot may also be deferred to a subsequent physical MPI Forum meeting. Specifically: failing to establish the individual ballot quorum does not mean that the ballot failed.

2.3.2 General Text Proposals

General text proposals for the MPI standards documents (including so-called "companion documents", such as the MPIR specification document) are usually "not trivial" changes, and typically add new semantics, change or clarify existing semantics, or remove previously-defined semantics.

General text proposals use the following process to be accepted into an MPI standards document:

1. Have a formal reading at a physical MPI Forum meeting where the meeting quorum has been met.
   (a) The final text of the proposal to be read must be made publicly available via the general MPI Forum broadcast email list at least two weeks prior to the start date of the physical MPI Forum meeting at which it is to be formally read.
   (b) The formal reading must be scheduled on the physical MPI Forum meeting's agenda at least two weeks prior to the meeting's start date.
   (c) There is no criteria for "passing" or "failing" a formal reading. It is up to the proposal's author(s) to decide whether to bring the proposal up for a formal ballot at a subsequent meeting.
2. Pass a first official ballot at a physical MPI Forum meeting.
   (a) A proposal's first ballot can only be conducted after its formal reading.
   (b) A proposal's first ballot must be conducted at a different physical MPI Forum meeting than which it was formally read.
3. Pass a second official ballot at a physical MPI Forum meeting.
   (a) A proposal's second ballot can only be conducted after its first ballot passes.
   (b) A proposal's second ballot must be conducted at a different physical MPI Forum meeting than which it passed its first ballot.

4. Changes to proposal text after it was made available for the formal reading (i.e., at least two weeks prior to the start date of the physical MPI Forum meeting at which it was read) are permitted in some cases:

   (a) Before the second ballot, changes are permitted if the text delta is presented at a physical MPI Forum meeting and approved via a special formal ballot of IMOVE organizations at that meeting:

      i. The ballot meets the requirements for the individual ballot quorum, and
      ii. There are zero "no" votes.

      Rationale. The first condition prevents a large number of abstentions. The second condition ensure that all non-abstaining organizations are unanimous in their consent of the text changes. (*End of rationale.*)

      If the special ballot fails, the original text of the proposal is used.

   (b) After the second ballot, text changes that do not change the semantics of the proposal are permitted with the unanimous consent of the relevant chapter committee(s).

Proposals may be voluntarily withdrawn at any time before the second ballot passes.

Ballots may be deferred to a subsequent physical MPI Forum meeting in the following cases:

1. Before the ballot is conducted, the proposal author requests a deferral to the next physical MPI Forum meeting.

2. When the ballot is conducted, it fails to meet the individual ballot quorum.

If a proposal fails either of its ballots, or if a proposal is withdrawn, it must perform the entire procedure again (i.e., start over with a formal reading). If either ballot fails to establish its per-ballot quorum, it may be re-cast within the timeframes specified above.

2.3.3 Errata Proposals

Errata proposals for the MPI standards documents are usually "small" and deal with "critical" changes to documents to correct errors, clarify egregious ambiguities, etc.

Errata proposals use the following process to be accepted into an MPI standards document:

1. Pass a single official ballot at a physical MPI Forum meeting.

   (a) Final errata proposal text must be made publicly available via the general MPI Forum broadcast email list at least two weeks prior to the start date of the physical MPI Forum meeting at which its ballot will occur.

2. Changes to proposal text after it was made available (i.e., at least two weeks prior to the start date of the physical MPI Forum meeting at which it was balloted) are permitted in some cases:

   (a) Before the ballot, changes are permitted if the text delta is presented at a physical MPI Forum meeting and approved via a special formal ballot of IMOVE organizations at that meeting:

      i. The ballot meets the requirements for the individual ballot quorum, and
      ii. There are zero "no" votes.

   If the special ballot fails, the original text of the errata proposal is used.

   (b) After the ballot, text changes that do not change the semantics of the proposal are permitted with the unanimous consent of the relevant chapter committee(s).

If an errata proposal fails its ballot, it must perform the entire procedure again (i.e., start over by posting the text a minimum of two weeks before a physical MPI Forum meeting).

Procedures for deferring errata proposal ballots are the same as those for general text proposals.

2.3.4 Changing These Rules

The procedure for changing these rules is the same as for Errata Proposals (essentially: publish the proposed change at least two weeks prior to a physical MPI Forum meeting and then pass one official ballot).

Chapter 3

Suggestions for Proposers

The following are several suggestions to consider before raising a proposal to the MPI Forum:

1. Socialize your proposal among all the relevant Forum chapter committees, other relevant Forum members, and real-world users. Get feedback and buy-in from as many people as possible.
2. Ensure that your proposal:
   (a) Is not "syntactic sugar" for something that could be implemented outside of an MPI implementation.
   (b) Represents a "best practice."
   (c) Is useful on a wide variety of platforms / architectures.
   (d) Is not an ephemeral use case.
3. Be prepared to cite concrete use cases and/or applications that can use the functionality in your proposal.
4. Implementations of proposals are strongly encouraged, especially for "non-trivial" proposals. The most highly valued implementations are ones that:
   (a) Show a performance or functionality benefit that cannot be accomplished outside of an MPI implementation.
   (b) Can be implemented on a wide variety of platforms / architectures.
5. Proposal quality issues:
   (a) Use a similar writing style to the rest of the MPI specification document.
   (b) Get the proposal proofread by a native English speaker.
   (c) Ensure that the proposal fits in well with the overall MPI specification document.
6. Don't let too much time elapse between the formal reading and ballots.

Chapter 4

Suggestions for Voters

The following are several suggestions to think about before voting on an MPI Forum proposal.

1. Actually read the proposal. Take time to think about it. Socialize it with your colleagues.
2. Is this proposal just "syntactic sugar" for something that could be implemented outside of an MPI implementation?
3. Does this proposal represent a "best practice"?
4. Is this proposal useful on a wide variety of platforms / architectures?
5. Are there applications that will use the functionality from this proposal?
6. Is the use case for this proposal ephemeral?
7. Implementation issues:
   (a) Has an implementation been done? Implementations may or may not be *required*, but should be highly valued – especially for "non-trivial" proposals.
   (b) Does the implementation show a performance or functionality benefit that could not be implemented outside of an MPI implementation?
   (c) Is the proposal implementable on a wide variety of platforms / architectures?
8. Proposal quality issues:
   (a) Is the proposal well-written?
   (b) Is the proposal too young? E.g., does this proposal represent new work that may not yet have been completely vetted, thought through, or simply had time to mature?
   (c) Is the proposal too old? E.g., has there been a significant time lapse between its reading and/or ballots? (if so, why?)