

# MPI 2.1 at MPI Forum Chicago, April 28-30, 2008 Version 2.1 – Combined Document

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## MPI-2.1 – Working Plan

### Monday:

- All reviewer are asked for their (formalized) reviews
- Discussions (only if needed)

### Tuesday:

- Decisions (straw voted) on open issues from the discussion
- Summary = finishing the official reading

## Where we are – a statistical summary

- MPI 1.3 + 2.0, merging 335 distinguished parts
- Ballot 1+2 40 items implemented
- Ballot 3 14 items / 12 accepted + implemented
- Ballot 4 22 items / 22 accepted + implemented  
+ a lot of e-mails
- Reviews until Apr. 19 477 items analyzed  
232 items implemented by myself
- 14 chapter authors 21 chapters / annexes / frontm. / bibl. / index  
read and corrected - **great work!**  
57 review items implemented
- I checked all modifications so far done by the chapter authors ("diff")

**It's time to make the cut !**

**Version Apr. 19, 2008 + all YYYYYY modifications + TYPO-corrections  
will be my final MPI-2.1**

(No chance that I can continue this process any longer)

## Reviewer Question & Answer

Chap. .... of MPI-2.1 Draft Apr. 19, 2008 represents fully and exactly (as I can overlook) the text that was given by

- MPI-1.1 (June 1995) and MPI-2 (July 1997),
- MPI-1 errata (Oct. 12, 1998),
- Ballot 1+2 (May 15, 2002),
- Ballot 3 (protocol from March 2008 meeting, 1st vote), and
- Ballot 4 (protocol from March 2008 meeting, official reading)

if the following text-modifications  
(they are already implemented in the current draft)  
are accepted by the MPI Forum:

- XXXXX

and if the following bugs will be corrected until first vote in June 2008 meeting:

- YYYYYY.

Further comments (not official part of this review):

- ZZZZZ

We need reviewers for: (bold=large) : (red=responsible chapter author) (Reviewer, green=@meeting)

|   |   |
|---|---|
| Frontmatter & Acknowledgements  | Bill Gropp & Rich Graham, Rusty Lusk  |
| Chap. 1: Introduction to MPI  | Bill Gropp, Rusty Lusk, Karl Feind, Adam Moody, Traeff  |
| Chap. 2: MPI-2 Terms and Conventions  | Tony Skjellum, Bill Gropp, Richard Barrett, Traeff  |
| Chap. 3: Point-to-Point Communication<br>(incl. sections from MPI-2 Misc. + 8.9)          | Rich Graham, Jespar Larsson Traeff, George Bosilca, Steve Poole, Kannan Narasimhan, David Solt, B. Gropp, Matt Koop, Adam Moody |
| Chap. 4: Collective Communication<br>(incl. sections from MPI-2 Ext. Collect.)            | Adam Moody, Steven Ericsson-Zenith, Edgar Gabriel, R. Thakur, B. Gropp, G. Bosilca, Th. Hoefler, J. Traeff                      |
| Chap. 5: Groups, Context, and Communicators<br>(incl. sections from MPI-2 Ext.Col. + 8.8) | Richard Treumann Steven Ericsson-Zenith, Edgar Gabriel, Tony Skjellum, Bill Gropp, G. Bosilca, Robert Blackmore                 |
| Chap. 6: Process Topologies   | Jesper L. Traeff, Rusty Lusk, Bill Gropp, Richard Barrett   |
| Chap. 7: MPI Environmental Management<br>(incl. sections from MPI-2 Misc.)                | George Bosilca, Rich Graham, Jespar Larsson Traeff, Steve Poole, Kannan Narasimhan, David Solt, B. Gropp                        |
| Chap. 8: Miscellany   | Jesper L. Traeff, Rich Graham, George Bosilca, Steve Poole, Kannan Narasimhan, B. Gropp   |
| Chap. 9: Process Creation and Management  | David Solt, Dries Kimpe, Rusty Lusk, George Bosilca, Bill Gropp, Kalem Karian,  |
| Chap. 10: One-Sided Communication   | Jespar Larsson Traeff, Ericsson-Zenith, Martin Schulz, Bill Gropp, Darius Buntinas,   |
| Chap. 11: External Interfaces   | Bronis de Supinski, Bill Gropp, Rainer Keller   |
| Chap. 12: I/O   | Rajeev Thakur, Joachim Worringer, Bill Gropp, Koziol  |
| Chap. 13: Language Bindings   | Jeff Squyres, Steve Poole, Purushotham Bangalore, Bill Gropp, Erez Haba, Alexander Supalov                                      |
| Chap. 14: Profiling Interface   | Bronis de Supinski, Bill Gropp, Jeff Brown  |
| Chap. 15: Deprecated Functions  | Rolf Rabenseifner   |
| Bibliography  | Bill Gropp, Rusty Lusk  |
| Annex A Language Bindings   | A. Supalov, J. Squyres, St. Poole, P. Bangalore, B. Gropp   |
| Annex B Change Log / Indexes  | Rolf Rabenseifner   |

## Reviewer Statements

Question:

Do you accept the B.1 Item 33 modification listed on this slide?  
Yes:  
16  
No:  
0  
Abstain:  
11

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if the following text-modifications (they are already implemented in the current draft) are accepted by the MPI Forum: XXXXX  
and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZZ

| Chapter | Reviewer          | State-<br>ment is<br>true | XXXXX<br>(Modifications, to be voted by<br>the Forum)  | YYYYY<br>(Bugs, to be<br>done)   | ZZZZZ<br>(Further<br>comments)   |
|---------|-------------------|---------------------------|--|--|--|
| All     | Rolf Rabenseifner | YES                       | <ul style="list-style-type: none"><li>• B.1, Item 33.<br/>See also slide 9</li><li>• Remove of 4.1.1 &amp; 4.1.2<br/>YES: , NO: , Abstain:</li><li>• → missing Refs on 462 &amp; 486<br/>Mod:</li><li>• Non-negative integers<br/>YES: 19, NO: 3, Abstain: 5</li></ul> | Page ii line 14:<br>date → Apr. 19<br><br>Plus all on the<br>sheet<br>"STILL TODO" | Thank you<br>to all<br>involved<br>persons.<br>Page XX<br>line 41:<br>NOT: >300<br>E-mail<br>authors |

Non-negative: MPI\_Type\_create\_indexed\_block: count, blocklength  
MPI\_Pack: incount, + additionally: outsize, but not position  
MPI\_unpack: insize (outcount maybe handled by MPI-2.2)  
MPI\_Pack\_size: incount + additionally: size

grey = not present in the April meeting, review statement per e-mail

Question:

Do you accept the modifications listed on this slide

And on the slide 6?

Yes:

19

No:

3

Abstain:

5

Chap 3(4): integer -> nonnegative integer

Count arguments in:

MPI\_Recv (p.29), MPI\_Bsend (p.39), MPI\_Ssend (p.40), MPI\_Rsend (p.40), MPI\_Isend (p.49), MPI\_lbsend (p.50), MPI\_Issend (p.50), MPI\_Irsend (p.51), MPI\_irecv (p.51), MPI\_Send\_init (p.68), MPI\_Bsend\_init (p.69), MPI\_Ssend\_init (p.69), MPI\_Rsend\_init (p.70), MPI\_Recv\_init (p.70), MPI\_Sendrecv (p.73), MPI\_Sendrecv\_replace (p.74)

~~MPI\_Get\_count (p.32), MPI\_Get\_elements (p.100)~~

Editor's comment:

~~\*NO\* → OUT argument, MPI\_UNDEFINED can be returned~~

Count argument in:

MPI\_Waitany (p.57), MPI\_Testany (p.58), MPI\_Waitall (p.59), MPI\_Testall (p.60), MPI\_Waitsome (p.60), MPI\_Testsome (p.61), MPI\_Startall (p.71)

Rank arguments (do we want?) in:

~~MPI\_Send (p.26), MPI\_Recv (p.29), MPI\_Bsend (p.39), MPI\_Ssend (p.40), MPI\_Rsend (p.40), MPI\_Isend (p.49), MPI\_lbsend (p.50), MPI\_Issend (p.50), MPI\_Irsend (p.51), MPI\_irecv (p.51), MPI\_Send\_init (p.68), MPI\_Bsend\_init (p.69), MPI\_Ssend\_init (p.69), MPI\_Rsend\_init (p.70), MPI\_Recv\_init (p.70), MPI\_Sendrecv (p.73), MPI\_Sendrecv\_replace (p.74)~~

Editor's comment:

No, because valid values MPI\_ANY\_SOURCE, MPI\_PROC\_NULL, and MPI\_ROOT may be implemented as negative integers.

## Datatypes

- Proposal 1: (p<page>.<line> according to MPI-2.1 Draft Apr. 19, 2008)
  - P494.3: duplicate line 3-4 with
    - MPI\_CHAR – signed char**
    - MPI::CHAR – char**
  - Reason: this is identical to the inconsistent definition in
    - MPI-1.1 page 28? (same as p28.2 – Table 3.2), and
    - MPI-2.0 page 271? (same as p454.5 – Table 16.1)
- Proposal 2:
  - P494.3 is kept, p454.5 is changed to both signed char
  - Reason: resolve inconsistency by keeping MPI-1 definition
- Proposal 3:
  - P494.3 and P28.2: char (instead of signed char)
- Results of voting:
  - Proposal 2 (3 votes) versus Proposal 3 (14 votes), 5 abstain  
→ Proposal 2 is therefore removed.
  - Proposal 1 (13 votes) versus Proposal 3 (6 votes), 3 abstain

Should go to MPI-2.2.

MPI-2.2 should revisit all the "signed" datatypes and check whether "signed" should be removed.

## Datatypes

- P494.4: (treated as printable character)
- P494.11+13: (treated as integral value)

## Reviewer Statements

Question:

Do you accept the XXXXX modifications listed on this slide?

Yes:

No:

Abstain:

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| Chapter                | Reviewer    | Statement is true | XXXXX (Modifications, to be voted by the Forum)                       | YYYYY (Bugs, to be done) | ZZZZZ (Further comments) |
|------------------------|-------------|-------------------|---|--------------------------|--------------------------|
| Frontmatter & Acknowl. | Bill Gropp  |                   |   |                          |                          |
|                        | Rich Graham | YES               |   |                          |                          |
|                        | Rusty Lusk  |                   |   |                          |                          |
| EVERYWHERE             |             |                   | Xxx_xxx: the " " does not work with search and cut&paste in pdf files |                          |                          |

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| Chapter                          | Reviewer      | Statement is true | XXXXX | YYYYY (Bugs, to be done)  | ZZZZZ |
|----------------------------------|---------------|-------------------|-------|---|-------|
| Chapter 1<br>Introduction to MPI | Bill Gropp    |                   |       |   |       |
|                                  | Rusty Lusk    |                   |       |   |       |
|                                  | Bronis        |                   |       | P4.12 are solving → solved, upto → up to<br>P4.18+19 It is expected that .. Will be → The .. was, Straight → just                   |       |
|                                  | Adam Moody    | YES               |       | P3.21 0-copy → zero-copy<br>P4.1 July → On July<br>P6.34 delete sentence<br>P6.47 + p7.20 MPI-2 → MPI<br>Additional small ...→ file |       |
|                                  | Jesper Traeff | YES               |       | Email-file<br>Message-passing with hypen  |       |
|                                  | Rainer Keller | YES               |       | Typos on email, p7.7 new sentence, see file   |       |

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and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

| Chapter                                | Reviewer           | Statement is true | XXX XX | YYYYY (Bugs, to be done)   | ZZZZ (Further comments) |
|--|--------------------|-------------------|--------|--|-------------------------|
| Chapter 2<br>MPI Terms and Conventions | Tony Skjellum      |                   |        |  |                         |
|  | Bill Gropp         |                   |        |  |                         |
|  | Richard Barrett    |                   |        |  |                         |
|  | Jesper Traeff      | YES               |        | P9.14 MPI-2 → MPI<br>Email-file  |                         |
|  | Bronis de Supinski | YES               |        | P16.10 "but" →<br>", as documented in<br>Chapter ..., but"<br>P16.28 MPI-2 → MPI<br>P16.38 Chapter 8 ----<br>P23.2+3 remove<br>Chap7 of MPI-1 doc.<br>p23.32 MPI-2 → MPI |                         |

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| Chapter                                   | Reviewer                  | Statement is true | XXXXX (Modifications, to be voted by the Forum) | YYYYY (Bugs, to be done) | ZZZZ (Further comments) |
|---|---------------------------|-------------------|---|--------------------------|-------------------------|
| Chapter 3<br>Point-to-Point Communication | Richard Graham            | YES               |   |                          |                         |
|   | Jesper Traeff             | YES               | See file<br>jesper...Nonnegative.ppt            | see email-file           |                         |
|   | George Bosilca            | YES               |   |                          |                         |
|   | Steve Poole               |                   |   |                          |                         |
|   | Kannan Narasimhan Kaushik | YES               |   |                          |                         |

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| Chapter  | Reviewer   | Statement is true | XXXXX (Modifications, to be voted by the Forum) | YYYYY (Bugs, to be done)   | ZZZZ (Further comments) |
|--|------------|-------------------|---|--|-------------------------|
| Chapter 3<br>Point-to-Point Communication<br><br>(Continued) | David Solt |                   |   |  |                         |
|  | Bill Gropp |                   |   |  |                         |
|  | Matt Koop  | YES               |   |  |                         |
|  | Adam Moody | YES               |   | P33.4-5 remove<br>P33.31+37 all & ANY<br>→<br>MPI {WAIT TREST}{<br>ALL  <u>SOME</u> }<br>P49.7 Objects →<br>Request Objects<br>P52.37 2 times<br>", " → "I"<br>Further issues, see<br>file |                         |

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### Question:

Do you accept the XXXXX modifications listed on this slide?

Yes:

No:

Abstain:  
(see slide non non-negatives)

| Chapter                | Reviewer                  | Statement is true | XXXXX (Modifications, to be voted by the Forum) | YYYYY (Bugs, to be done)                                | ZZZZ (Further comments) |
|------------------------|---------------------------|-------------------|---|---|-------------------------|
| Chapter 4<br>Datatypes | Richard Graham            | YES               |   | See file  |                         |
|                        | Jesper Traeff             | YES               | See file<br>jesper...Nonnegative.ppt            | See file<br>traeff_chap.3+4<br>_mpi-2.1-<br>reviews.txt |                         |
|                        | George Bosilca            | YES               |   |   |                         |
|                        | Steve Poole               |                   |   |   |                         |
|                        | Kannan Narasimhan Kaushik | (YES)             |   | See file  |                         |

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| Chapter                                   | Reviewer          | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done)  | ZZZZ<br>(Further comments) |
|---|-------------------|-------------------|--|------------------------------|----------------------------|
| Chapter 4<br>Datatypes<br><br>(Continued) | David Solt        |                   |  |                              |                            |
|   | Bill Gropp        |                   |  |                              |                            |
|   | Matt Koop         |                   |  |                              |                            |
|   | Adam Moody        |                   |  |                              |                            |
|   | Rolf Rabenseifner | YES               |  | Bring in again 4.1.1 & 4.1.2 |                            |

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| Chapter                               | Reviewer          | Statement is true | XXXX<br>X<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done)  | ZZZZ<br>(Further comments) |
|---------------------------------------|-------------------|-------------------|--|--|----------------------------|
| Chapter 5<br>Collective Communication | Adam Moody        | YES               |  | p136.24-24: The content of root's buffer is copied to all other processes. |                            |
|                                       | Edgar Gabriel     |                   |  |  |                            |
|                                       | Rajeev Thakur     | YES               |  |  |                            |
|                                       | Alexander Supalov |                   |  | P167.37 space after ( is unnecessary. Please check everywhere              |                            |
|                                       | George Bosilca    | YES               |  |  |                            |
|                                       | Jeff Squyres      |                   |  | P168.21 see jsquyres-chap5_mpi-2.1-review.txt                              |                            |
|                                       | Torsten Hoefler   | YES               |  | See file   |                            |

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| Chapter                               | Reviewer      | State-ment is true | XXXXX<br>(Modifications, to be voted by the Forum)          | YYYYY<br>(Bugs, to be done)                                  | ZZZZ<br>(Further comments)      |
|---------------------------------------|---------------|--------------------|---|--|---------------------------------|
| Chapter 5<br>Collective Communication | Jesper Traeff | YES                | •Add MPI_LONG_LONG(_INT) + MPI_UNSIGNED_LONG_LONG to 162.12 | •Sec. → Section<br>•section \ref → Section \ref<br>•See file | MAXLOC and LONG_LONG in MPI-2.2 |

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| Chapter   | Reviewer         | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done)   | ZZZZ<br>(Further comments) |
|---|------------------|-------------------|--|---|----------------------------|
| Chapter 6<br>Groups, Contexts, Communicators, and Caching | Richard Treumann | YES (email)       |  |   |                            |
|   | Edgar Gabriel    | YES               |  | 220.27 MPI_Comm_free<br>221.44-46 remove Title+Paragraph<br>222.7-9 remove "in MPI-1", 2 x "new"<br>223.17 remove "new functions that are replacements for the MPI-1" |                            |
|   | Tony Skjellum    |                   |  |   |                            |
|   | Bill Gropp       |                   |  |   |                            |
|   | George Bosilca   | YES               |  |   |                            |
|   | Robert Blackmore | YES               |  |   |                            |
|   |                  |                   |  |   |                            |

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| Chapter                         | Reviewer             | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done) | ZZZZ<br>(Further comments) |
|---------------------------------|----------------------|-------------------|--|-----------------------------|----------------------------|
| Chapter 7<br>Process Topologies | <b>Jesper Traeff</b> | YES               |  |                             |                            |
|                                 | Rusty Lusk           |                   |  |                             |                            |
|                                 | Bill Gropp           |                   |  |                             |                            |
|                                 | Richard Barrett      |                   |  |                             |                            |
|                                 |                      |                   |  |                             |                            |

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| Chapter                                   | Reviewer                         | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done) | ZZZZ<br>(Further comments) |
|---|----------------------------------|-------------------|--|-----------------------------|----------------------------|
| Chapter 8<br>MPI Environmental Management | <b>George Bosilca</b>            | YES               |  |                             |                            |
|   | <b>Richard Graham</b>            | YES               |  | See file (no mods)          |                            |
|   | <b>Jesper Traeff</b>             |                   |  |                             |                            |
|   | Steve Poole                      |                   |  |                             |                            |
|   | <b>Kannan Narasimhan Kaushik</b> | YES               |  | 41.a-f,                     |                            |
|   | David Solt                       |                   |  |                             |                            |
|   | <b>Bronis de Supinski</b>        |                   |  | 12.4 after 8.4              |                            |

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| Chapter                 | Reviewer                         | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done)                        | ZZZZ<br>(Further comments) |
|-------------------------|----------------------------------|-------------------|--|--|----------------------------|
| Chapter 9<br>Miscellany | <b>Jesper Traeff</b>             | YES               |  | Title Info Object                                  |                            |
|                         | <b>Richard Graham</b>            |                   |  | P283.16 "Many MPI routines take the argument info" |                            |
|                         | <b>George Bosilca</b>            | YES               |  |  |                            |
|                         | Steve Poole                      |                   |  |  |                            |
|                         | <b>Kannan Narasimhan Kaushik</b> | YES               |  | 41.f   |                            |
|                         | Bill Gropp                       |                   |  |  |                            |

## Reviewer Statements

Chap. .... of MPI-2.1 Draft Apr. 19, 2008 represents fully and exactly (as I can overlook) the text that was given by MPI-1.1 (June 1995) and MPI-2 (July 1997), MPI-1 errata (Oct. 12, 1998), Ballot 1+2 (May 15, 2002), Ballot 3 (protocol from March 2008 meeting, 1st vote), and Ballot 4 (protocol from March 2008 meeting, official reading)

if the following text-modifications (they are already implemented in the current draft) are accepted by the MPI Forum: XXXXX

and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

| Chapter                                       | Reviewer                       | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done) | ZZZZ<br>(Further comments) |
|---|--------------------------------|-------------------|--|-----------------------------|----------------------------|
| Chapter 10<br>Process Creation and Management | David Solt                     |                   |  |                             |                            |
|   | Rusty Lusk                     |                   |  |                             |                            |
|   | <b>George Bosilca</b>          | YES               |  |                             |                            |
|   | Bill Gropp                     |                   |  |                             |                            |
|   | Yann Kalemkarian               |                   |  |                             |                            |
|   | <b>Dries Kimpe (by e-mail)</b> | YES               | See file   | See file                    | See file                   |
|   |                                |                   |  |                             |                            |

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and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

| Chapter                                | Reviewer                        | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done) | ZZZZ<br>(Further comments) |
|--|---------------------------------|-------------------|--|-----------------------------|----------------------------|
| Chapter 11<br>One-sided Communications | <b>Jesper Traeff</b>            | YES               |  |                             |                            |
|  | Bill Gropp                      |                   |  |                             |                            |
|  | Darius Buntinas                 |                   |  |                             |                            |
|  | <b>Martin Schulz (by email)</b> | YES               |  | Some formatting 46.b-d      | See file 46.a+e → MPI-2.2  |
|  |                                 |                   |  |                             |                            |

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if the following text-modifications (they are already implemented in the current draft) are accepted by the MPI Forum: XXXXX

and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

| Chapter                           | Reviewer                  | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done) | ZZZZ<br>(Further comments) |
|-----------------------------------|---------------------------|-------------------|--|-----------------------------|----------------------------|
| Chapter 12<br>External Interfaces | <b>Bronis de Supinski</b> | YES               |  | See file                    |                            |
|                                   | Bill Gropp                |                   |  |                             |                            |
|                                   | <b>Rainer Keller</b>      | YES               |  | file                        |                            |
|                                   |                           |                   |  |                             |                            |

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if the following text-modifications (they are already implemented in the current draft) are accepted by the MPI Forum: XXXXX

and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

| Chapter           | Reviewer              | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done)          | ZZZZ<br>(Further comments) |
|-------------------|-----------------------|-------------------|--|--------------------------------------|----------------------------|
| Chapter 13<br>I/O | <b>Rajeev Thakur</b>  | YES               |  | 42.a (p432.46: page 4.1.4 → page 85) |                            |
|                   | Bill Gropp            |                   |  |                                      |                            |
|                   | <b>Quincey Koziol</b> | YES               |  | See file                             |                            |
|                   |                       |                   |  |                                      |                            |

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if the following text-modifications (they are already implemented in the current draft) are accepted by the MPI Forum: XXXXX

and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

| Chapter                           | Reviewer                  | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done) | ZZZZ<br>(Further comments) |
|-----------------------------------|---------------------------|-------------------|--|-----------------------------|----------------------------|
| Chapter 14<br>Profiling Interface | <b>Bronis de Supinski</b> | YES               |  |                             |                            |
|                                   | Bill Gropp                |                   |  |                             |                            |
|                                   | <b>Jeff Brown</b>         | YES               |  |                             |                            |
|                                   |                           |                   |  |                             |                            |



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if the following text-modifications (they are already implemented in the current draft) are accepted by the MPI Forum: XXXXX

and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

| Chapter                            | Reviewer                 | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done)   | ZZZZ<br>(Further comments) |
|------------------------------------|--------------------------|-------------------|--|---|----------------------------|
| Chapter 15<br>Deprecated Functions | <b>Rolf Rabenseifner</b> | YES               |  |   |                            |
|                                    | <b>Rainer Keller</b>     | YES               |  | <ul style="list-style-type: none"> <li>p441, l38 -- language --&gt; language</li> <li>Many locations, see file</li> </ul> |                            |
|                                    | Bill Gropp               |                   |  |   |                            |
|                                    | <b>Jeff Squyres</b>      | YES               |  | Jeff about MPI_NULL_COPY_FN ... (Jeff does the LaTeX for this)  |                            |

## Reviewer Statements

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if the following text-modifications (they are already implemented in the current draft) are accepted by the MPI Forum: XXXXX

and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

| Chapter                         | Reviewer                 | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done)                      | ZZZZ<br>(Further comments) |
|---------------------------------|--------------------------|-------------------|--|--|----------------------------|
| Chapter 16<br>Language Bindings | <b>Jeff Squyres</b>      | YES               |  | 44.a (p479.2: MPI_THREAD_INIT → MPI_INIT_THREAD) |                            |
|                                 | Steve Poole              |                   |  |  |                            |
|                                 | <b>Puri Bangalore</b>    | YES               |  | file   |                            |
|                                 | Bill Gropp               |                   |  |  |                            |
|                                 | <b>Erez Haba</b>         | YES               |  |  |                            |
|                                 | <b>Alexander Supalov</b> | YES               |  | Email-file                                       |                            |

## Reviewer Statements

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if the following text-modifications (they are already implemented in the current draft) are accepted by the MPI Forum: XXXXX

and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

| Chapter                              | Reviewer                 | Statement is true | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done)                     | ZZZZ<br>(Further comments) |
|--------------------------------------|--------------------------|-------------------|--|---|----------------------------|
| Annex A<br>Language Bindings Summary | <b>Alexander Supalov</b> | YES               |  | 40.d (p553.44)<br>40.e (p554.35)<br>40.f (p557) |                            |
|                                      | <b>Jeff Squyres</b>      | YES               |  | See file  |                            |
|                                      | Steve Poole              |                   |  |   |                            |
|                                      | <b>Puri Bangalore</b>    | YES               |  | A.4.20 removed (Jeff's idea)                    |                            |
|                                      | Bill Gropp               |                   |  |   |                            |
|                                      |                          |                   |  |   |                            |

## Additional modifications (from Jeff Squyres)

- Chap. 15 Deprecated Functions
  - Predefined Callback routines must be added (C and Fortran):
    - MPI\_NULL\_COPY\_FN**
    - MPI\_DUP\_FN**
    - MPI\_NULL\_DELETE\_FN**
- A.1.2 split into (always C / Fortran / C++)
  - Types
  - Prototypes
    - C++: with namespace notation**
  - Deprecated prototypes
- A2.x, A3.x, A4.x
  - Predefined callback routines must be also reported by the script that generates automatically these sections. This applies to
    - X=4 Groups, Contexts, Communicators, and Caching (title must be corrected)**
    - X=14 Deprecated**
- Index sections: Some missing entries will be added by Jeff Squyres



## Reviewer Statements

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if the following text-modifications (they are already implemented in the current draft) are accepted by the MPI Forum: XXXXX

and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

| Chapter               | Reviewer                 | Statement is true  | XXXXX<br>(Modifications, to be voted by the Forum) | YYYYY<br>(Bugs, to be done)   | ZZZZ<br>(Further comments) |
|-----------------------|--------------------------|--------------------|--|---|----------------------------|
| Annex B<br>Change-Log | <b>Rolf Rabenseifner</b> | (YES, see slide 6) |  | Remove Ballot numbers (keep in .tex files)  |                            |
|                       | <b>Puri</b>              | YES                |  | See file  |                            |
| Bibliography          | Bill Gropp               |                    |  | See MPI-1.3   |                            |
|                       | Rusty Lusk               |                    |  |   |                            |
| Indexes               | <b>Rolf Rabenseifner</b> | (YES, see slide 6) |  | • 44.1 (list from Jeff must be fixed)<br>• Rename: "MPI Constants and Predefined Handles Index" |                            |
|                       | Bill Gropp               |                    |  |   |                            |

## Still TO DO = Must be implemented in final MPI-2.1

Rolf Rabenseifner, HLRS, Apr. 20, 2008

40.a OK In Frontmatter, several committee --> committee (twin 1)

40.b OK p.27.10 / p.27.25: below --> in Table 3.1 / 3.2

40.c OK page ii line 14: date --> Apr. 19

Alexander Supalov, Intel, Apr. 22, 2008

Page numbers according to Draft April 19, 2008:

40.d OK 553/44.5-46.5

Overcomplicated sentence, should be split in two, with the first rephrased. Note that "<" and ">" may be represented differently in the standard sources.

Reads

The bindings prototype functions using the type <CLASS> rather than listing each function for every MPI class; the token <CLASS> can be replaced with valid MPI-2 class names, such as Group, Datatype, etc., except when noted.

Should read

The bindings prototype functions are using the type <CLASS> rather than listing each function for every MPI class. The token <CLASS> can be replaced with valid MPI-2 class names, such as Group, Datatype, etc., except when noted.

40.e OK 554/35

Reads "results", should read "result".

40.f OK 557/all

Unfortunate odd/even page layout - the right margin overlaps with the line numbers. Can be fixed by adding an empty page somewhere, or by another small shift of the prior main text.  
Editor's comment:  
May be solved with smaller font size, or move 17 mm left

Kannan Narasimhan, HP, Apr. 26, 2008

Page numbers according to Draft April 19, 2008:

Chapter 8 (MPI Environment Management)

41.a OK Pg 265, 8.3 Error Handling (Line 12): Remove the phrase "On the other hand" and reword the sentence as follows: C and C++ have distinct typedefs for user defined error handling callback functions that accept communicator, file, and window arguments.

41.b OK Pg 266, 8.3.1 Error Handlers for Communicators (Lines 32-36): Change all references to HANDLER\_FUNCTION to (COMM,WIN,FILE),ERRHANDLER\_FN in the "Advice to users" para.

41.c OK Pg 268, 8.3.2 Error Handlers for Windows (Line [13] 9): ADD: Creates an error handler that can be attached to a window object. Editor's comment: okay, but must be added after line 9.

41.d OK Pg 269, 8.3.3 Error Handlers for Files (Line [24] 20): ADD: Creates an error handler that can be attached to a file object.

41.e OK Pg 270, 8.3.4 Freeing Error handlers and Retrieving Error Strings (Line 27-28): Change the sentence to: The error handler will be deallocated after all of the objects associated with it (communicator, window, or file) are deallocated.

Chapter 9 (Miscellany)

41.f OK Pg 283, 9.1 The Info Object (Line 16): Change the first sentence to: Many of the routines in MPI take an info argument. (i.e., MPI instead of MPI-2)

In the frontmatter:

- "NO" Integrate e-mail authors of Ballot 1-4 into credits.tex  
Too many authors (>300) with partially small input to the standardization

In the backmatter:

- DONE Using all CONST:MPI.\* entries in the Index to build a Constant Index  
- TODO Using all TYPEDEF:MPI.\* entries in the Index to build a Typedef Index  
It may be possible to add also references to the C types mentioned at 486/39-48 and 523/14, 525/21-23, and 503/19-32, 507/40

- DONE Using all MPL.\* entries in the Index to build the Function Index

MPI-1.3 and MPI-2.1:

- D1.3 Title in same format as on MPI-2.1

- TODO References MPI-2.1 [8] and [9] must be corrected

- D1.3.2.x must be implemented also in MPI-1.3 (the second "the" was removed)

## Additional Review Files = Describing XXXXX and YYYYY, i.e., must be implemented in final MPI-2.1

- graham\_chap.4+8\_comments.txt
- hoefer\_chap.5\_mpi-2.1-review.txt
- jsquyres-chap5\_mpi-2.1-review.txt
- jsquyres-for-rolf-2.1.txt
- kannan-chapter4--review.txt
- kannan-chapter8.txt
- kannan-chapter9.txt
- keller\_chap.12\_mpi-2.1-review.txt
- keller\_chap.15\_mpi-2.1-review.txt
- keller\_chap.1\_mpi-2.1-review.txt
- kimpe\_chap.10\_mpi-2.1-reviews.txt
- koziol-chapter13-mpi21.txt
- moody\_chap.1\_additional\_comments.txt
- moody\_chap.3\_mpi-2.1-review.txt
- moody\_chap.5-mpi-2.1-review.txt
- puri-changelog-mpi-2.1-review.txt
- puri-mpi2.1-chapter16-review.txt
- schulz\_chap.11\_mpi-2.1-review.txt
- supalov\_chap.16\_mpi-2.1-review.txt
- supinski\_chap.12\_mpi-2.1-review.txt
- traeff\_chap.1+2\_mpi-2.1-reviews.txt
- traeff\_chap.3+4\_mpi-2.1-reviews.txt
- traeff\_chap.3+4\_Nonnegative.ppt
- traeff\_chap.5\_mpi-2.1-reviews.txt

## Review Summary

| Chapter                  | #YES  |
|--------------------------|-------|
| Frontmatter & Ackn.      | 2     |
| 1. Introduction          | 4     |
| 2. Terms & Conventions   | 3     |
| 3. Point-to-Point Comm.  | 6     |
| 4. Datatypes             | 3+(1) |
| 5. Collective Comm.      | 6     |
| 6. Groups, Contexts, ... | 5     |
| 7. Process Topologies    | 2     |
| 8. Environmental Manag.  | 4     |
| 9. Miscellany            | 4     |

| Chapter                  | #YES |
|--------------------------|------|
| 10. Process Creation ... | 3    |
| 11. One-Sided Comm.      | 3    |
| 12. External Interfaces  | 3    |
| 13. I/O                  | 3    |
| 14. Profiling Interface  | 3    |
| 15. Deprecated Funct.    | 3    |
| 16. Language Bindings    | 6    |
| A. Lang. Bind. Summary   | 4    |
| B. Change-Log            | 2    |
| Bibliography             | 1    |
| Index                    | 1    |

## Reviewer Statements – final straw vote over total MPI-2.1

Chap. .... of MPI-2.1 Draft Apr. 19, 2008 represents fully and exactly (as I can overlook) the text that was given by MPI-1.1 (June 1995) and MPI-2 (July 1997), MPI-1 errata (Oct. 12, 1998), Ballot 1+2 (May 15, 2002), Ballot 3 (protocol from March 2008 meeting, 1st vote), and Ballot 4 (protocol from March 2008 meeting, official reading)  
if the following text-modifications (they are already implemented in the current draft) are accepted by the MPI Forum: XXXXX  
and if the following bugs will be corrected until first vote in June 2008 meeting: YYYYY. Further comments (not official part of this review): ZZZZ

### Question:

**Is the MPI-2.1 document, including the XXXXX modifications, and if all YYYYY modifications are done, ready for 1<sup>st</sup> vote in the next meeting?**

**Yes:**

27

**No:**

0

**Abstain:**

0

## Next steps

- MPI-2.1 → implementing review items until May 30, 2008, still colored  
(no further corrections, only items that are now on the table)  
→ Reviewers should make a final check  
→ Final version of MPI-2.1 – only black&white June 13, 2008  
→ July 1, 2008: 1<sup>st</sup> vote  
→ Sep. 4, 2008: 2<sup>nd</sup> vote = done
- Text is technically finished  
→ implementation can start now!  
(you need not to wait until June 13!)

## Implementation of MPI-2.1

- Do you **expect** that your company/organization is able to implement MPI-2.1 until EuroPVM/MPI 2008 (Sep. 7-10, 2008)?
- If no, please can you give an estimate.  
(33 small issues that you should check in Annex B, Change-Log)

| Library          | Yes mm/yy | asked                           |
|------------------|-----------|---------------------------------|
| MPICH2           | YES       | Rajeev Thakur                   |
| Open MPI         |           | Jeff Squyres                    |
| IBM              |           | Dick Treumann, Robert Blackmore |
| Sun Microsystems |           | Terry Dontje                    |
| Microsoft        |           | Erez Haba                       |

| Library  | Yes mm/yy | asked                              |
|----------|-----------|------------------------------------|
| Bull     |           | Yann Kalemkarian                   |
| HP       |           | Kannan Kaushik                     |
| Cray     | Q1 2009   | Mark Pagel                         |
| NEC      | YES       | Hubert Ritzdorf, Jesper Traeff     |
| Intel    |           | Alexander Suplaov, Keith Underwood |
| SiCortex | YES       | David Gingold                      |

**Thanks a lot for all your cooperation!**

MPI-2.1 standardization is now nearly done ☺

→ Have a lot of fun with MPI-2.2 and MPI-3.0

## Annex: Slides from Mar. 2008 meeting

MPI 2.1  
Slide 41

Rolf Rabenseifner  
Hochleistungsrechenzentrum Stuttgart



## MPI-2.1 – Working Plan

### Monday:

- All reviewer are asked
  - to check whether all editor's decisions about their review are okay:
    - OK = Obvious, typo, correction must be done, ...  
or good idea, correction should be done, ...
    - ? = should be decided by the MPI Forum
    - 22 = should be deferred to MPI-2.2.  
It is mainly a suggestion to the content of MPI and not to the merging of MPI-1.1 with MPI-2.
    - Q? = Question & answer only, no need for corrections
    - = Comment, can be ignored
    - \*NO\* = Correction must or should not be done
  - OK-items = same opinion of editor and reviewer ( ~100 items)  
→ expectation: no discussion need → should be okay for the forum
  - Especially the \*NO\* and "?" must be checked and discussed, probably off-line

Tuesday: Remaining "?" must be decided by the Forum, see [review.txt](#)

MPI 2.1  
Slide 42

Rolf Rabenseifner  
Hochleistungsrechenzentrum Stuttgart



## Open topics on the path to a fully merged MPI-2.1 (1)

- Chap. 1 – Intro chapter
  - Responsible: Bill Gropp (together with Rusty Lusk)
- Chap. Collectives – Intro Chapter
  - Responsible: Adam Moody
- Move MPI\_LONG\_LONG, MPI\_WCHAR, ... into the original text  
Remove the additional MPI-2 sections.
  - Responsible: Rolf Rabenseifner
- Move all deprecated functions into an Annex B
  - Responsible: Rolf Rabenseifner
- Remake the type\_ub / type\_lb stuff (text is needed, only functions are deprecated)
  - Responsible: Rolf Rabenseifner

MPI 2.1  
Slide 43

Rolf Rabenseifner  
Hochleistungsrechenzentrum Stuttgart



## Open topics on the path to a fully merged MPI-2.1 (2)

- Producing C++ interfaces that can be included into the chapters
  - Responsible: Jeff Squyres
- Including them into the chapters:
  - Responsible: Rolf Rabenseifner
- Merge of all Language Binding Annexes to one Annex A
  - Responsible: Alexander Supalov
- Extracting Const Index from current total Index
  - Responsible: Rolf Rabenseifner
- Extracting Typedef Index from current total Index
  - Responsible: Rolf Rabenseifner
- Extracting Function Index from current total Index
  - Responsible: Rolf Rabenseifner

MPI 2.1  
Slide 44

Rolf Rabenseifner  
Hochleistungsrechenzentrum Stuttgart



### Open topics on the path to a fully merged MPI-2.1 (3)

- Producing List of Figures and List of Tables
  - Responsible: Rolf Rabenseifner (trivial)
- Producing List of Examples
  - Responsible: Rainer Keller
- Include Ballots 1-4 into MPI-2.1
  - Responsible: Rolf Rabenseifner
- Include all the OK-marked items from the MPI-2.1 reviews into MPI-2.1
  - Responsible: Rolf Rabenseifner
- Change-Log
  - Responsible: Rolf Rabenseifner (Ballot 1-4)

### Open topics on the path to a fully merged MPI-2.1 (4)

- Correcting the Examples – substituting deprecated functions
  - Responsible for examples in Fortran: David Solt
  - Additional Volunteers: Bill Gropp (Datatype)
  - Responsible for examples in C: George Bosilca
  - Additional Volunteers: Pavan Balati (Datatypes)
- Adding a full acknowledgement list in the Frontmatter:
  - Currently MPI-2.1
  - Will be extended to MPI-2.2 and MPI-3.0
  - For MPI 2.2: all institutions and persons who have contributed to January and March 2008 meetings
  - All persons who have contributed to the email lists in the Ballots 1-4 and the review 1.3 and 2.1 process
  - Responsible: Richard Graham

### Timescale – MPI-2.1 – Goals

- I would like to have finished all in the next week or two?
- Now:
  - Open Review 2.1 items – see review.txt “?”
- Additional text-merge round with dedicated chapter authors.  
Goal:
  - **Remove references to MPI-1 and MPI-2.**
  - **Substitute by MPI.**
  - **Necessary modifications to achieve this goal.**
  - Responsible authors – see next slide

### Annex: Slides from Jan. 2008 meeting

## MPI 2.1 Goals

### Scope of Effort:

- Clarification to the MPI standards document,
- resulting in a single document describing the full MPI 2.1 standard.
- This includes merging of documents, text corrections, and added clarifying text.

### Working plan:

- MPI 1.1 + Chap. 3 of MPI-2 (Version 1.2 of MPI) + some errata will be combined to  
→ **MPI 1.3**
- MPI 1.2.1 + rest of MPI-2 (MPI 2.0) will be combined to  
→ **MPI 2.1 draft (without clarifications)**
- adopted MPI 2.1 Ballots 1&2 + new MPI 2.1 ballots 3&4 are combined to the  
→ **Ballot 1-4 of MPI 2.1 adopted errata**  
(with references still based on MPI 1.1 and MPI-2 documents)
- MPI 2.1 draft + MPI 2.1 adopted errata  
→ **MPI 2.1**

## Why combined documents?

The goals behind this combining of the documents have been already expressed in the MPI-1.1 standard:

"Sect. 1.2 Who should use this standard?

This standard is intended for use by all those who want to write portable message-passing programs in Fortran 77 and C. This includes individual application programmers, developers of software designed to run on parallel machines, and creators of environments and tools. ..."

It is more efficient that the MPI Forum combines the documents once than every user of the MPI documents has to do this in his/her daily work based on the combination of MPI-1.1 and the several updating documents, i.e., MPI-2, and the future updates 2.1, 2.2, ... .

## Schedule based on official rules

### Rules and Procedures

1. Here is a reminder of the traditional MPI voting rules, which have served us well. These rules have been extended to the email discussion of MPI erratas and have been applied to the errata ballots. We expect to adapt these rules, preserving their spirit, as we go forward.
2. One vote per organization
3. To vote, an organization must have been present at the last two MPI Forum meetings.
4. **Votes are taken twice, at separate meetings. Votes are preceded by a reading at an earlier meeting, to familiarize everyone with the issues.**
5. Measures pass on a simple majority.
6. Only items consistent with the charter can be considered.

From [http://www.mpi-forum.org/mpi2\\_1/index.htm](http://www.mpi-forum.org/mpi2_1/index.htm)

### For MPI x.x combined documents:

This reading at the MPI Forum meetings will be substituted by a review report through a review group. Each Forum member can be part of this group.

With the 1st official vote on a combined document (at next meeting), this modification of the voting rules is accept for that document.

## MPI 2.1 Review Procedure (Voting plan) – Step 1

- Straw **vote** on the working plan (see 4 steps on previous slide)
- MPI 1.1 + Chap. 3 of MPI-2 (Version 1.2 of MPI) + some errata will be combined to  
→ **MPI 1.3**
  - Jan.08 meeting:  
**Short discussion and defining a review group** who is reviewing the **MPI 1.3 merging plan** (printed copies available) and the **MPI 1.3 combined document**
  - See e-mail: From: Rainer Keller, Subject: Re: [mpi-21] Documents  
Date: Mon, 7 Jan 2008 12:13:14 +0100
  - Reporting by e-mail on mpi-21 reflector
  - Corrections if necessary (until Jan. 31, 2008)  
→ final version of **MPI 1.3 merging plan** and **MPI 1.3**
  - Final report of the reviewers at March 2008 meeting (=substitutes the **reading**)
  - **1st vote** by the MPI Forum at April 2008 meeting
  - **2nd (final) vote** by the MPI Forum at June 2008 meeting

## MPI 2.1 Review Procedure (Voting plan) – Step 2

- MPI 1.3 combined document + rest of MPI-2 (MPI 2.0) will be combined to → **MPI 2.1 draft**
  - Discussion of the 11 major merging decisions** and finishing them with **straw votes** (**Jan.2008** meeting) based on the distributed text (printed copies available)
  - Defining a review group** (**Jan.2008** meeting)
    - First draft of combined document (Feb 22, 2008, to be done by Rolf Rabenseifner)
    - Reviewing process and report of the reviewers (until March 10-12, 2008 meeting)
    - Discussion and further corrections if necessary (March 2008 meeting)
    - All necessary straw votes should be done at end of March 2008 meeting.
    - April 1, 2008, the final document should be available for twice voting.
    - Final report of the reviewers at April 2008 meeting (=substitutes the **reading**)
  - 1st vote** by the MPI Forum at June 2008 meeting
  - 2nd (final) vote** by the MPI Forum at Sep. 2008 meeting



## MPI 2.1 Review Procedure (Voting plan) – Step 3

- adopted MPI 2.1 Ballots 1&2 + new MPI 2.1 ballots 3&4 are combined to the → **MPI 2.1 adopted errata** (with references still based on MPI 1.1 and MPI-2 documents)
  - Ballots 1&2 are done (Chapter 1, Errata for MPI-2, May 15, 2002)  
<http://www.mpi-forum.org/docs/errata-20-2.pdf>
  - Ballot 3  
<http://www.cs.uiuc.edu/homes/wgropp/projects/parallel/MPI/mpi-errata/index.html>  
<http://www.cs.uiuc.edu/homes/wgropp/projects/parallel/MPI/mpi-errata/ballot3.html>
  - Official Reading** and straw votes (Jan. 14, 2008)  
Re-reading if modifications are necessary (Jan. 15 or 16, 2008)
  - First official vote** (on all topics with positive straw votes) (March, 2008)
  - Ballot 4 at March 2008 meeting with official reading (1st day and next days). Unresolved items are moved to MPI 2.2.
  - **Final text of Ballot 3+4 is available at end of March meeting, i.e., it can be already included into MPI 2.1 combined document.**
  - April 2008: Ballot 3: 2nd vote; Ballot 4: 1st vote
  - June 2008: Ballot 4: 2nd vote (all second votes are based on text in the combined documents) → **MPI 2.1 adopted errata** finished

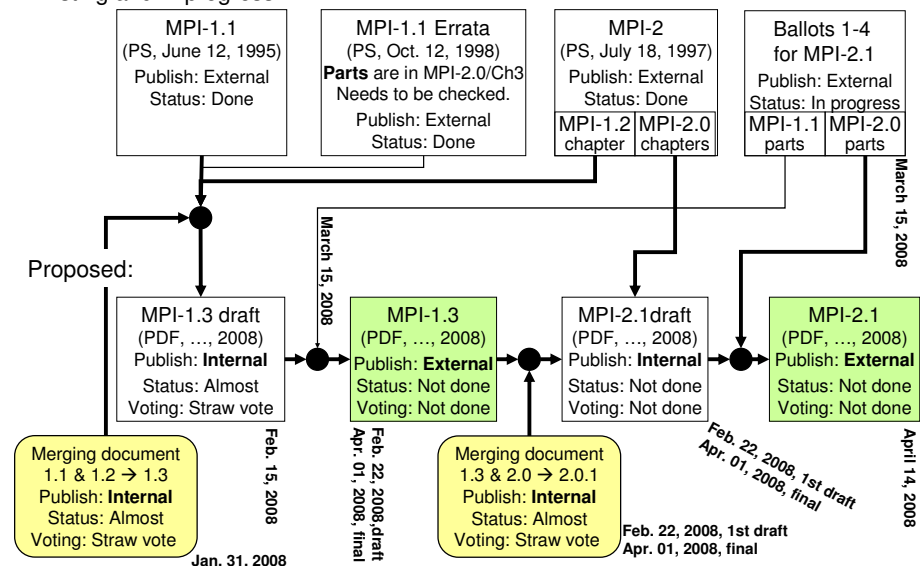


## MPI 2.1 Review Procedure (Voting plan) – Step 4

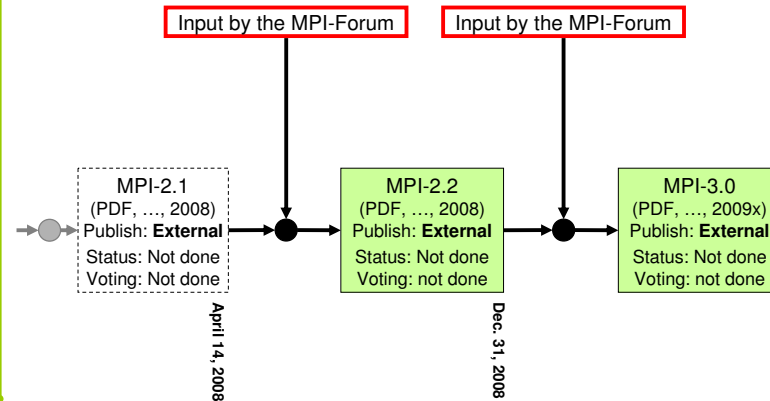
- MPI 2.1 draft + MPI 2.1 adopted errata → **MPI 2.1 combined document**
  - The MPI 2.1 Ballots 1-4 (as after final reading on April 2008 meeting) are included into the MPI 2.1 draft (from April 1, 2008) (as prepared for final review/reading at April 2008 meeting) → MPI 2.1 combined document (April 14, 2008)
  - Defining the reviewing group (on March 2008 meeting) (may be smaller as for the MPI2.1 draft)
  - Reporting by e-mail on mpi-21 reflector until April 18, 2008
  - Corrections if necessary until April 23, 2008
  - Final report of the reviewers at April 2008 meeting (=substitutes the **reading**)
  - First vote** on June 2008 meeting
  - Second (final) vote** on Sep. 2008 meeting

## MPI Standards document plan

Existing and in progress:



## MPI Standards document plan



## Change-Log as Annex

- Who wants in MPI 2.1 an Annex telling effective (user and implementors visible) mods between MPI 2.0 and MPI 2.1?
  - Yes: all=43
  - No: 0
  - Abstain: 0
- Should we keep old such histories in future standards?
  - Yes: 8
  - No: 13
  - Abstain: 43-8-13=22
- Changbars for all in the final combined document?
  - Yes: 1
  - No: 28
  - Abstain: 43-28-1=14

## MPI 2.0 combined document

- There are 11 topics that must be decided or confirmed by the MPI Forum → next slides
- For further details we need a review group → slide at the end

## MPI 2.0 merging decisions

Question:  
The MPI 2.0 combined document title-page should be as stated here?

Yes:

All=41

No:

0

Abstain:

0

- 1.) The title of the combined document:

**MPI: A Message-Passing Interface Standard  
Version 2.1**



## Question: MPI 2.0 merging decisions

The MPI 2.0 combined document title-page should be as stated here in 2.+3.?

Yes:

all

No:

0

Abstain:

0

2.) The date of the merged document is fixed when it is released (in 2008).

3.) Ackno on the title page:

"This work was supported in part by ARPA, NSF and DARPA under grant ASC-9310330, the National Science Foundation Science and Technology Center Cooperative Agreement No. CCR-8809615, and the NSF contract CDA-9115428, and by the Commission of the European Community through Esprit project P6643 and under project HPC Standards (21111)."

4.) Do we add on 2.1 already new supporters? Yes – offline per e-mail



H L R I S

## MPI 2.0 merging decisions

Question:

The MPI 2.0 combined document abstract should be as stated here?

Yes:

No:

Abstain:

### 4.) Abstract

"This document describes the MPI standard version 2.1 in one combined document. This document combines the content from the previous standards "MPI: A Message-Passing Interface Standard, June 12, 1995" (MPI-1.1) and "MPI-2: Extensions to the Message-Passing Interface, July, 1997" (MPI-1.2 and MPI-2.0). The standard MPI-1.1 includes point-to-point message passing, collective communications, group and communicator concepts, process topologies, environmental management, and a profiling interface. Language bindings for C and Fortran are defined. The MPI-1.2 part of the MPI-2 document contains clarifications and corrections to the MPI-1.1 standard and defines MPI-1.2. The MPI-2 part of the MPI-2 document describes additions to the MPI-1 standard and defines the MPI standard version 2.0. These include miscellaneous topics, process creation and management, one-sided communications, extended collective operations, external interfaces, I/O, and additional language bindings (C++). Additional clarifications and errata corrections are included."

→ offline e-mail : be specific on errata doc. And include MPI 1.3



## MPI 2.0 merging decisions

Question:

The MPI 2.0 combined document copyright years should be as stated here?

Yes:

all

No:

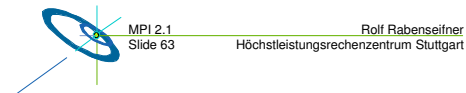
0

Abstain:

0

5.) Copyright years

1993, 1994, 1995, 1996, 1997, 2008



H L R I S

## MPI 2.0 merging decisions

Question:

The MPI 2.0 combined document Versions-list should be as stated here?

Yes:

No:

Abstain:

6.) New entries on the history page → Offline per e-mail



**Version 2.1: <date>, 2008.** This document combines the previous documents MPI 1.3 (???, 2008) and MPI-2.0 (July 18, 1997). Certain parts of MPI 2.0, such as some sections of Chapter 4, Miscellany, and Chapter 7, Extended Collective Operations have been merged into the Chapters of MPI 1.3. Additional errata and clarifications collected by the MPI Forum are also included in this document.

**Version 1.3: <date>, 2008.** This document combines the previous documents MPI 1.1 (June 12, 1995) and the MPI 1.2 Chapter in MPI-2 (July 18, 1997). Additional errata collected by the MPI Forum referring to MPI 1.1 and MPI 1.2 are also included in this document.

**Version 2.0: <date>, 1997.** Beginning after the release of MPI 1.1, the MPI Forum began meeting to consider corrections and extensions. MPI-2 has been focused on process creation and management, one-sided communications, extended collective communications, external interfaces and parallel I/O. A miscellany chapter discusses items that don't fit elsewhere, in particular language interoperability."

**Version 1.2: July, 18 1997.** The MPI-2 Forum introduced MPI 1.2 as Chap.3 in the standard "MPI-2: Extensions to the Message-Passing Interface", July 18, 2007." ...

**Version 1.1: June, 1995.** Beginning in March, 1995, the Message ...

**Version 1.0: June, 1994.** The Message Passing Interface Forum ...

As already voted for MPI 1.2.1

## MPI 2.0 merging decisions

**Question:**

The MPI 2.0 combined document Ackno-pages should be as stated here?

Yes:

all

No:

0

Abstain:

0

7.) The acknowledgment pages of both documents are printed one after the next.

The first list of persons is introduced with the following new line:

**"Those who served as primary coordinators in MPI 1.0 and MPI 1.1 are:"**

And the MPI-2 list of persons is introduced with:

**"Those who served as primary coordinators in MPI 1.2 and MPI 2.0 are:"**

For the merging process I would add:

**"The editors of the combined documents have been:**

-- Rainer Keller (MPI 1.3 - combined document)

-- Rolf Rabenseifner (MPI 2.1 - combined document)"



MPI 2.1  
Slide 65  
Rolf Rabenseifner  
Höchstleistungsrechenzentrum Stuttgart

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## MPI 2.0 merging decisions

**Question:**

The MPI 2.0 combined document entries of deprecated routines should be as stated here?

Yes:

all

No:

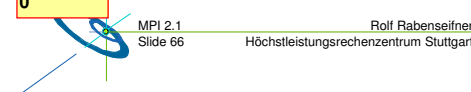
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Abstain:

0

8.) Before the definition of each deprecated interface, the following sentence is added:

**"The following function is deprecated  
and is superseded by ..... in MPI 2.0"**



MPI 2.1  
Slide 66  
Rolf Rabenseifner  
Höchstleistungsrechenzentrum Stuttgart

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## MPI 2.0 merging decisions

**Question:**

The MPI 2.0 combined document structure should be as stated here?

Yes:

All ?

No:

0 ?

Abstain:

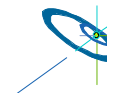
0 ?

9.) Sequence of all chapters:

- First all MPI-1, except Profiling
- All MPI-2, except Extended Collective (it is fully merged into corresponding MPI-1.1 chapters)
- Profiling Chapter
- Only one merged Appendix

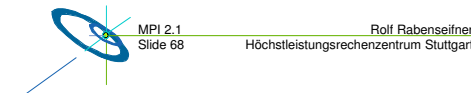
The following MPI-2.0 sections are merged into the corresponding MPI-1.1 sections:

- MPI-2.0 Chap. 4 Miscellany, except
  - MPI-2.0 Sect. 4.10 (The Info Object) (Move? Yes:no:abstain)
  - MPI-2.0 Sect. 4.11 (Memory Allocation) → MPI-1 Env. Manag. (5:2:?)
  - MPI-2.0 Sect. 4.12 (Language Interoper.) → End of Lang.Bind 10.3 (17:0:?)
  - MPI-2.0 Sect. 4.17 (Functions and Macros) → Terms & Conven. 2.6.5 (5:0:?)
- MPI-2.0 Chap. 5 Extended Collective Operations
- MPI-2.0 Sect. 8.8 New Attribute Caching Functions
- MPI-2.0 Sect. 8.9 Duplicating a Datatype



## Describe the chapter moving in a change-log

- Describe the chapter moving in a change-log?
  - Yes: all
  - No: 0
  - Abstain: 0



MPI 2.1  
Slide 68  
Rolf Rabenseifner  
Höchstleistungsrechenzentrum Stuttgart

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## MPI 2.0 merging decisions

Question:  
The MPI 2.0 combined document ... should be as stated here?

Yes:

No:

Abstain:

Not decided by the Forum

10.) The new "Version Number" section was put at the beginning of the MPI-1.1 Chap. "Environmental Management" (done in MPI 1.2)

The Section "Portable MPI Process Startup" is put at the end of the MPI-1.1 Chapter "Environmental Management".

Okay?

Where to include Section „Memory Allocation“?

### 7 MPI Environmental Management

- 7.1 Implementation information
  - 7.1.1 Version number
  - 7.1.2 Environmental Interface

from MPI 1.2

- 7.2 Error handling
- 7.3 Error codes and classes
- 7.4 Timers and synchronization

- 7.5 Startup
- 7.6 Portable MPI Process Startup

from MPI 2.0

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Hochleistungsrechenzentrum Stuttgart

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## MPI 2.0 merging decisions

Question:  
The MPI 2.0 combined document C++ interfaces should be handled as stated here?

Yes:

all

No:

0

Abstain:

0

11.) The MPI-1.2 C++ interfaces in MPI-2.0 App. B.3 - B.12 are written in a syntax that is different to the syntax used in all other C++ declarations.

For consistency, in B.3 - B.12, the

→ this type of declaration should be used in Annex A

```
namespace MPI {
    standard-type mpi-routine(standard-type arg1, mpi-type arg2...)
    mpi-type    mpi-routine(standard-type arg1, mpi-type arg2...)
}
```

should be modified into

```
"standard-type MPI::mpi-routine(standard-type arg1, MPI::mpi-type arg2...)"
"MPI::mpi-type MPI::mpi-routine(standard-type arg1, MPI::mpi-type arg2...),"
```

Examples: `static MPI::Intercomm MPI::Comm::Join(const int fd)`  
`MPI::Intercomm MPI::Intercomm::Create(const Group& group) const`  
`MPI::Intercomm MPI::Intracomm::Create(const Group& group) const`  
`void MPI::Comm::Barrier() const = 0`

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## Straw votes okay for merging details?

Still TODO!

With MPI 1.3 and MPI 2.1 documents:

- Is it okay to have only a final „reading“ (=review report) and two official votes, instead of already doing official votes on some details?

### Official (institutional) votes:

- Yes:
- No:
- Abstain:

- Reason: The merging does not modify the standard. Only formatting and editorial wording is rarely modified.

- (This slide was skipped at January 2008 meeting.)

MPI 2.1 Slide 71 Rolf Rabenseifner  
Hochleistungsrechenzentrum Stuttgart

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## MPI 2.0 Merging Review Group

We need reviewers for: (bold=large)

Reviewers: (next slide)

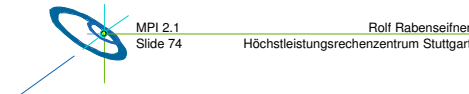
- **Frontmatter** (large)
- **Chapter 1: Introduction to MPI** (large)
- Chapter 2: MPI-2 Terms and Conventions (simple)
- **Chapter 3: Point-to-Point Communication** (large)
- **Chapter 4: Collective Communication** (large)
- **Chapter 5: Groups, Context, and Communicators** (large)
- Chapter 6: Process Topologies (simple)
- **Chapter 7: MPI Environmental Management** (large)
- Chapter 8: Miscellany (simple)
- Chapter 9: Process Creation and Management (simple)
- Chapter 10: One-Sided Communication (simple)
- Chapter 11: External Interfaces (simple)
- Chapter 12: I/O (simple)
- **Chapter 13: Language Bindings** (large)
- Chapter 14: Profiling Interface (simple)
- Bibliography (simple)
- **Annex A** (large)



|  |  |
|--|--|
| We need reviewers for: ( <b>bold=large</b> )   | Reviewers: ( <b>green=@meeting</b> )   |
| <b>Frontmatter</b>   | <b>Rusty Lusk, Bill Gropp</b>  |
| <b>Chap. 1: Introduction to MPI</b>  | <b>Rusty Lusk, Bill Gropp, Karl Feind, Adam Moody</b>  |
| Chap. 2: MPI-2 Terms and Conventions   | Tony Skjellum, <b>Bill Gropp, Richard Barrett</b>  |
| <b>Chap. 3: Point-to-Point Communication</b><br>(incl. sections from MPI-2 Misc. + 8.9)          | <b>Rich Graham, Jespar Larsson Traeff, George Bosilca, Steve Poole, Kannan Narasimhan, David Solt, B. Gropp, Matt Koop</b> |
| <b>Chap. 4: Collective Communication</b><br>(incl. sections from MPI-2 Ext. Collect.)            | Steven Ericsson-Zenith, <b>Edgar Gabriel, Rajeev Thakur, Bill Gropp, Adam Moody, George Bosilca</b>                        |
| <b>Chap. 5: Groups, Context, and Communicators</b><br>(incl. sections from MPI-2 Ext.Col. + 8.8) | Steven Ericsson-Zenith, <b>Edgar Gabriel, Bill Gropp, George Bosilca, Robert Blackmore</b>                                 |
| Chap. 6: Process Topologies  | <b>Rusty Lusk, Bill Gropp, Richard Barrett</b>   |
| <b>Chap. 7: MPI Environmental Management</b><br>(incl. sections from MPI-2 Misc.)                | <b>Rich Graham, Jespar Larsson Traeff, George Bosilca, Steve Poole, Kannan Narasimhan, David Solt, B. Gropp</b>            |
| Chap. 8: Miscellany  | <b>Rich Graham, George Bosilca, Steve Poole, Kannan Narasimhan, B. Gropp</b>   |
| Chap. 9: Process Creation and Management   | Dries Kimpe, <b>Rusty Lusk, George Bosilca, Bill Gropp, Kalem Karian</b>   |
| Chap. 10: One-Sided Communication  | Ericsson-Zenith, Jespar Larsson Traeff, Martin Schulz, <b>Bill Gropp, Darius Buntinas</b>                                  |
| Chap. 11: External Interfaces  | <b>Bronis de Supinski, Bill Gropp</b>  |
| Chap. 12: I/O  | <b>Rajeev Thakur, Joachim Worringer, Bill Gropp</b>  |
| <b>Chap. 13: Language Bindings</b>   | <b>Jeff Squyres, Steve Poole, Purushotham Bangalore, Bill Gropp, Erez Haba, Alexander Supalov</b>                          |
| Chap. 14: Profiling Interface  | <b>Bronis de Supinski, Bill Gropp, Jeff Brown</b>  |
| Bibliography   | <b>Rusty Lusk, Bill Gropp</b>  |
| <b>Annex A</b>   | <b>Jeff Squyres, Steve Poole, Purushotham Bangalore, Bill Gropp, Alexander Supalov</b>                                     |

## MPI 2.1 - Telecon

- I'll not be available on Feb. 11-13 (scheduled dates)
- There is no need because all Ballot 4 work will be done by e-mail
- And MPI 1.3, MPI 2.1 merging and Ballot 3 is done.
- → No telecon for the MPI 2.1 chapter
- Okay?
- (Accepted by the Forum due to the reasons mentioned above)



HLRIS

## MPI 2.1

- Thank you very much for your strong support on MPI 2.1!



HLRIS