

WG14 N1981

Meeting notes

C Floating Point Study Group Teleconference

2015-10-13

9 AM PDT / 12 PM EDT

Attendees: Rajan, Jim, Vincent, David, Fred, Mike, Marius, Ian

New agenda items:

Discussion of WG14 meeting.

Last meeting action items:

Ian: Talk to Lawrence Crawl regarding proposing this IEEE-754: 2008 binding to C++ as well. - Not done.

David: Send out an email address to sign yourself up to the IEEE-754 mailing list to this group. - Done.

Ian: Update and check the items listed and flagged under Feature_List_Part_1. - Not done.

Jim: Send Mike an email regarding what is needed regarding prior art/implementation for Part 1 features in other languages. - Keep open. Will discuss later (about 30-40 languages use Mike's package at the moment).

Jim: p5: Give example of what the TG math functions effect due to the macro would do and what would happen without it. - Done.

Jim: p12: See if we can add a footnote regarding the implementation defined/undefined behavior referring to Annex J and/or an example from one of the bullets omitted. - Done in an alternative form.

Jim: p8: Make subnormal zero case be something that should keep the same sign. - Not done. After discussion, seemed better to not do this due to performance reasons.

Jim: p15: line 31: ilogb -> ilogb and llogb. - Done.

Jim: p15: line 32: FE_INVALID_LOGB -> FE_INVALID_ILOGB. - Done.

Jim: p16: line 10: Remove 'and round result to narrower type'. - Done.

Jim: p9: FENV_ALLOW_CONTRACT_FMA: Send a note to convey this should not apply to any implementation/system operations, and only to user code that is directly what is listed in lines 11-14. - Done on p6.

New action items:

Jim: p18: Line 9: Put in a footnote showing the practical effect of the selection statement restriction.

Jim: p18: Line 3: a catch action -> catch actions (look into making the change)

Jim: p18: Line 34: a delayed-catch action -> delayed-catch actions (look into making the change)

Jim: p18: Line 21: without the break -> without the jump

Jim: p21: Line 41: Reference the section this footnote is in.

Jim: Contact David Keaton to see if he has any objection to use this new latest part 5 document for the WG14 meeting since we have addressed all the comments (Joseph's).

Rajan: Present part 5 to WG14.

Rajan: Put up a PDF of the feature lists.

David: See what Oracle has done for the feature lists.

Rajan, Fred: See if there is a time pressure for new C Standard proposals.

Rajan, Fred: Report on the WG14 meeting with respect to the TS's.

All: Consider new issues:

p3: Line 24: Is this a constraint violation if it occurs? If so, it cannot be diagnosable by a translator following the translation phases exactly.

p17: For library state: Unspecified vs indeterminate state. Should not have the standard library states be indeterminate, but can we guarantee that it is in a valid state?

Next Meeting:

November 10th, 2015, 12:00 EST, 9:00 PST

Same teleconference number.

Discussion:

IEEE 754: David: Going forward. Mike is editor.

Arith23: Marius: No reply yet from program/steering committee members from what we discussed last time. Marius will ping them.

Parts 3 and 4: Published on October 1st, 2015. They are on the ISO website.

Part 5: Various emails, documents (cfp5-20151007.pdf)

pvii: Comment received that more background information would be useful.

p3: Line 24: *NEW ISSUE: Is this a constraint violation if it occurs? If so, it cannot be diagnosable by a translator following the translation phases exactly.

p17: *NEW ISSUE: For library state: Unspecified vs indeterminate state. Should not have the standard library states be indeterminate, but can we guarantee that it is in a valid state?

p18: Line 9: We should give an example or two. Should we say we are trying to avoid the following "bad" cases? Adding an example here would imply we should do it for all the try/catch items here. Perhaps put it in a footnote? May not be that helpful in a TS.

*Jim: p18: Line 9: Put in a footnote showing the practical effect of the selection statement restriction.

p18: Line 15: Now try and catch have to match exactly instead of allowing catch with sub-exceptions of the general group try exception. Perhaps have a new term for matching try/catch to avoid the repeated clauses.

*Jim: p18: Line 3: a catch action -> catch actions (look into making the change)

*Jim: p18: Line 34: a delayed-catch action -> delayed-catch actions (look into making the change)

*Jim: p18: Line 21: without the break -> without the jump

p18:

The changes for jumping into/out of catch block apply to 'delayed-try' as well, and for 'try' with the exception of handling "exceptions as specified below".

The 'delayed-try/catch' have all the corresponding changes from 'try/catch' sections.

Should jumping into a compound statement be different from jumping to a compound statement (as stated at the beginning of the paragraph)? i.e. Remove the 'other' on line 27?

The preceding statement seems to make it clear what 'other' refers to. Consensus is there is no confusion here.

p21: To make the changes valid with respect to the atomics example.

*Jim: p21: Line 41: Reference the section this footnote is in.

Pursue the new issues via email.

WG14 meeting:

Enough significant changes to have this draft considered by WG14. Put it on the wiki. This

means follow up emails by noon tomorrow at the latest. This allows EOD tomorrow to have the changes sent out.

*Jim: Contact David Keaton to see if he has any objection to use this new latest part 5 document for the WG14 meeting since we have addressed all the comments (Joseph's).

*Rajan: Present part 5 to WG14.

Features list part 2:

Decimal operation binding: Mike's library has all the functions in the TS, and beyond what's in the TR.

Are they in Linux already? Or any open source?

Fred: Conversions: GCC does not do this correct in terms of rounding for DFP <-> BFP. For float to integer, flags are not set properly.

Rounding: Mike may know of prior art with regards to the #pragma (likely using the dynamic rounding modes).

*Rajan: Put up a PDF of the feature lists.

*David: See what Oracle has done for the feature lists.

Regards,

Rajan Bhakta
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ISO C Standards Representative for Canada
C Compiler Development