

## WG14 N3178

### Meeting notes

## C Floating Point Study Group Teleconference

2023-10-04

8 AM PDT / 11 PM EDT / 3 PM UTC

### Attendees:

Rajan, Jim, Joshua, Mike, David H, Damian

### New agenda items:

See current agenda at <https://wiki.edg.com/pub/CFP/WebHome/n3169.pdf>

None.

### Previous meeting notes:

See CFP2879 (<http://mailman.oakapple.net/pipermail/cfp-interest/2023-August/002893.html>).

### Next Meeting(s):

October 18, 2023, 3PM UTC (only if needed based on WG14 discussion)

November 8, 2023, 4PM UTC

ISO Zoom teleconference

Please notify the group if this time slot does not work.

### New action items:

All: Notify Rajan before the October 16th of any known implementations of the proposed TS part 4 or 5.

Jim: Update slide deck with typo (Ex. slide 17 should TS-5 instead of TS-4) and formatting fixes (Ex. subscript for the pi, qi's in the sumProduct operation descriptions)

Jim: Change TS-4 page 12, line 1, "As for other" -> "Like other".

Fred: C26B Issue 1, nowhere else in the C standard are pole errors listed as a "shall", just as "may". This could be a problem for the proposed change.

Fred: C26B Issue 2, the problem may not be an issue as it seems to be clear what is the expected result.

Fred: C26B Issue 6, consider explicit definitions instead of implicit references.

Fred: C26B Issue 8, hyphenate floating-point.

Fred: C26B Issue 13, mention "long double" in the issue text. Ex. "Annex F and long double including double-double needs to be clarified."

Rajan: C26B Issues 12, 14, need CFP messages. Write some up and send them to the list.

Mike: Ask Michel about CFP2899.

Jim/David: Check IEEE-754 if there is a similar issue to CFP2899.

### C++ liaison:

[Cfp-interest 2799] Attn WG 14, question about atomic\_fetch\_\* and floating point re: [isocpp-lib- ext] P0493 Atomic max/min

- No update/responses yet.

**C23/WG14:**

C2X working draft N3149 (for CFP only)

<https://wiki.edg.com/pub/CFP/WebHome/N3149.pdf>

Next WG14 meeting: October 16-20, 2023.

^AI: All: Notify Rajan before the October 16th of any known implementations of the proposed TS part 4 or 5.

Group liaison with IEEE 754 might be needed.

David H will be a part of the 754 revision via email review. Mike may do the same, and drop off this group after C23. David H believes the same.

Damian may attend. May do WG14.

Joshua is not planning on it. But will attend WG14 meetings.

Rajan will attend WG14 meetings. Likely Fred as well.

**Carry-over action items results:**

None.

**Action items results (from previous meeting):**

Jim: Make the slide deck C names in a different typeface (fixed width font). See N3165 2023/09/05 Thomas, TS 18661 revisions slide deck

Done.

^AI: Jim: Update slide deck with typo (Ex. slide 17 should TS-5) and formatting fixes (Ex. subscript for the pi, qi's in the sumProduct operation descriptions)

Jim: Part 4: Typo fix: Change for page 2 line 6: clause 2 -> clause 4.

Done.

Jim: Part 4: For the change to page 3, line 13 and page 10 line 28: Say the fN and fNx suffixes are there only when the TYPES macro is defined.

Done.

Jim: Part 4: Page 10, line 27: Change "As for other IEC 60559 operations" to "As with other ..."

Jim: The two "with"s if this change was made seems wrong. So left it as is.

David: We did discuss it last time and it should be changed. Perhaps say "rounding includes gradual" or "rounding incorporates gradual" or ", underflow is gradual."

Jim: This is not about exceptions.

Joshua: Can say "Like other" or "Like with other" instead of "As for other".

^AI: Jim: Change TS-4 page 12, line 1, "As for other" -> "Like other".

Jim: Part 5: Typo fix: Change for page 2 line 9: clause 2 -> clause 4.

Done.

Jim: Part 5: Page 20, line 14 fix should be for Page 20 line 18.

Done.

Rajan: Validate the scaled reduction example compiles.

Result: Augmented arithmetic example: Typo in the w assignment: v,t -> v.t  
Done.

Jim: Scaled reduction example: Put "int i;" into the for loop clause 1 in the code instead of a separate declaration.

Done.

David: Augmented arithmetic example: Get the values for a\* and b\* in the initialization.

Done.

Jim: Augmented arithmetic example: Put the last (sh/st) assignment into two lines.

Done.

N3163 2023/09/05 Thomas, TS 18661-4 revision draft

N3164 2023/09/05 Thomas, TS 18661-5 revision draft

**Issues for C2Y - Only clarifying what might be on the list of what might be in a future revision of the standard, nothing to do with the current revision or balloted document:**

See future issues list at <https://wiki.edg.com/pub/CFP/WebHome/C26B.HTM>

Issue 1:

^AI: Fred: C26B Issue 1, nowhere else in the C standard are pole errors listed as a "shall", just as "may". This could be a problem for the proposed change.

Issue 2:

David: Yes, this is true, it was a problem in IEEE. It was supposed to be a bit operation, but infinity was a natural result.

Jim: We can answer the question that it is an overflow (see 7.12.1#5), but not required since nextafter's description does not fit the range error conditions listed there (see 7.12.11.3#2).

^AI: Fred: For C26B Issue 2, the problem may not be an issue as it seems to be clear what is the expected result.

Issue 6:

Jim: Not a good thing to implicitly define them through a reference. We should explicitly do so.

^AI: Fred: C26B Issue 6, consider explicit definitions instead of implicit references.

Issue 7:

Jim: It is not in the user space. It is reserved only if you include complex.h.

Issue 8:

^AI: Fred: C26B Issue 8, hyphenate floating-point.

Issue 13:

^AI: Fred: C26B Issue 13, mention "long double" in the issue text. Ex. "Annex F and long double including double-double needs to be clarified."

Issue 14:

^AI: Rajan: C26B Issues 12, 14, need CFP messages. Write some up and send them to the list.

N3159 2023/07/28 Thomas, August 2023 CFP teleconference agenda

Jim: The floating vs floating-point item was not added to the list.  
OK with adding this to the future issues list.

%a/%A formatting. See CFP2888 and follow ons.  
OK with adding this to the future issues list.

Definitions of \*\_DECIMAL\_DIG and DECIMAL\_DIG. See CFP2899.

Mike: Run this by Michel Hack as well.

Jim: We ask this to 754 as well.

Mike: Can post this to their list which Michel is following.

^AI: Mike: Ask Michel about CFP2899.

^AI: Jim/David: Check 754 if there is a similar issue to CFP2899.

OK with adding this to the future issues list.

**Other issues:**

Mail troubles See [Cfp-interest 2889]

Seems to be working.

All: Check to ensure that the archives list all emails sent by them during the period in question.: Rajan, Jim, Joshua, Mike, David H, Damian,

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Cfp-interest mailing list

[Cfp-interest@oakapple.net](mailto:Cfp-interest@oakapple.net)

<http://mailman.oakapple.net/mailman/listinfo/cfp-interest>