C Floating Point Study Group Teleconference
2024-05-22
8 AM PDT / 11 PM EDT / 3 PM UTC

2024/05/22: 10:00 CT:

Attendees: Rajan, Jim, Jerome, Damian, David,

New agenda items: None.

Previous meeting notes:
See [CFP 3095](http://mailman.oakapple.net/pipermail/cfp-interest/2024-April/003109.html).

Next Meeting(s):
June 19, 2024, 3PM UTC
ISO Zoom teleconference
Please notify the group if this time slot does not work.

New action items:
Rajan/Jim: Ask WG14 if a footnote (that we will have provided already) is needed for the CFP 3074 change to 7.1.2#7 saying an exception could still occur for an expression evaluation using the replacement.
Rajan: Make a proposal for WG14 based on CFP 3091.

Action items to be carried over:
Jim/Jerome/Damian: Follow up on C26 issue 1 (terms and definitions for math errors).
Damian: Get a list of editorial issues in Annex G and send them out for future submission to WG14.
Fred: Put the text after issue 4 in c26d into issue 5.
Jerome: C26: Issue 1: Revamp to remove the "may" for negative errors.
Fred: Create a C26 issue to clear up 7.12.1#1 to ensure SIGFPE is not interpreted as being allowed for any clause 7 functions.
Jim: C26 Issue 19: Add to the changes for 7.24.1.6 the terms "decimal form" and "hexadecimal form" to paragraph 3’s bullets 1 and 2 respectively to make it clear what the changes in paragraph 4 refer to. Also do the changes for issue 19 problems 1 and 2.

IEEE 754 liaison:
Jerome: Scanned a lot of the old IEEE-754 from 1978 and up meeting minutes. Looking for where to put them (Ex. Mike’s site?).
Jerome: Still waiting for the group to be a real working group (from a study group).
Damian: I will go to every 754 meeting.
Jerome: I will be more involved but won’t make as strong a statement as Damian.

**C++ liaison:**
None.

**C23 integration:**
Next WG14 meeting:
June 10-14, Virtual. Mailing deadline is one month before the meeting.

C23 drafts:
C23 working draft n3219 - July 2, 2023 - For CFP review only. Do not distribute.

Damian: Jens is using a different draft since he is referring to a footnote that is at a different number with regards to the Imaginary removal. Will email him to see what he is using other than N3219.

**Carry over action items** (Done unless stated otherwise):
^Jim/Jerome/Damian: Follow up on C26 issue 1.
Not done.

^Damian: Get a list of editorial issues in Annex G and send them out for future submission to WG14.
See [CFP 3096, 3097, 3098] Annex F and Annex G - primarily about special cases
Damian: Redid it to follow Annex F’s style and fix the inconsistencies. Will get David and Fred to review first before opening it up to everyone.
Not done.

**Action items from previous meeting** (Done unless stated otherwise)
^Fred: Put the text after issue 4 in c26d into issue 5.
Still shows the invalid text so not done.

^Jerome: C26: Issue 1: Revamp to remove the ”may” for negative errors.
Not done.

^Fred: Create a C26 issue to clear up 7.12.1#1 to ensure SIGFPE is not interpreted as being allowed for any clause 7 functions.
Not done.

Rajan/Jim: Look to reword CFP 3074 change to 7.1.2#7 to avoid an implication you cannot signal if the replacement is part of a larger expression.
Tried some changes. But OK with no change.
Jerome: Can add a footnote saying that no exception is raised for the evaluation of the replacement alone, but its use in an expression still can raise an exception.

^Rajan/Jim: Ask WG14 if a footnote (that we will have provided already) is needed for the CFP 3074 change to 7.1.2#7 saying an exception could still occur for an expression evaluation using the replacement.
Jim: C26 Issue 19: Add to the changes for 7.24.1.6 the terms "decimal form" and "hexadecimal form" to paragraph 3’s bullets 1 and 2 respectively to make it clear what the changes in paragraph 4 refer to. Also do the changes for issue 19 problems 1 and 2.

Jim: Submit CFP 3058’s document to WG14.
See [N3242] Proposal for C2Y - problematic use of “correctly rounded”.
Done. Rajan to present.

**TS-4 and TS-5 revisions:**
Waiting for the C23 final draft.

**C26 issues:**
Issues list
See https://wiki.edg.com/pub/CFP/WebHome/c26d.htm

Issue 1 (terms and definitions for math errors): See [CFP 2994,3016,3043,3064,3092 and follow ups].

Issue 5, 20 (macro exceptions): See [CFP 3045,3074].

Issue 18 (stdc_want_iec_60559_ext in math.h): See [CFP 3080].

Issue 19 (strto* and wcsto* wording): See [CFP 3058,3078 and follow ups].

Issue 21 (parenthesis): See [CFP 3091].
No objections.
^Rajan: Make a proposal for WG14 based on CFP 3091.

Imaginary types:
See [N3206, N3241, N3240, CFP 2979,2997,3018,3019,3032,3053,3055,3083 and follow ups].

Jim: What should CFP do with this?
Damian: Why is this proposal out there?
Jim: There was rationale in the original paper. The real reason seems to be lack of implementation.
Damian: I thought GCC said it was going to implement it?
Jerome: What about LAPACK and scale LAPACK and other consumers? They’ve been working without implementations for so long but would like it.
Jim: Yes, LAPACK worked around it using real parts.
Jim: If Imaginary types are being removed, what role should CFP play in the specification? Ex. Moving operations into the main body of the standard. Usual arithmetic conversions used a common corresponding real type. The rules for real and complex should be in the main body of the standard since it has nothing to do with 60559 support.
Jim: Damians changes work with this too so we need to synchronize it or make sequential changes.
Rajan: We should let Jens run with it and only intervene if there are changes that are erroneous with future papers from us to address those issues.
Jim: This means we should review the documents he has out for it. N3263 for example. There a lot of changes with no diff on Annex G.

Damian: Yes, the whole first page of Annex G seems to have disappeared. A lot of my stuff will not be affected by the change.

Jim: We can send proposals after Jens changes take effect.

Annex G:
See [CFP 2997, 3018, 3019, 3032, 3053, 3055, 3083 and follow ups].

Meaning of 0 < x < infinity
See [CFP 3046 and follow ups].
Damian: This has been resolved. Remove from the list.

Wording
See [CFP 3056, 3059, 3099 and follow ups].
Close this item as well as it is integrated into the other items.
Damian: "type name" is used before it is defined. 6.2.5#15 says complex types, but not what the type names are. Clause 16 then talks about type name without a definition.
Rajan: 6.2.1#8 does talk about type names being a regular English term.
Jim: I don't see it. It is not written at that level of formality. A type has many aspects, one of which is the name. Nothing confusing here or any problem.
Damian: Maybe I am overcomplicating it. OK with leaving it as is.

Others?
None.

Other issues:
Typeface inconsistency:
See [CFP 3076, 3094].
Jim: Already sent a note to JeanHeyd about this. No response.

frexp and double-double underflow
See [CFP 3100 and follow ups].
Keep on the agenda.