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 (https://wiki.edg.com/pub/CFP/WebHome/n3258.pdf):
  None.

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

 Next Meeting(s):
  June 19, 2024, **3**PM 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.