C Floating Point Study Group Teleconference

2024/07/17: 8 AM PDT / 11 AM EDT / 3 PM UTC

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

New agenda items (https://wiki.edg.com/pub/CFP/WebHome/CFP%20meeting%20agenda-20240717-update.pdf):
  None.

Previous meeting notes:
  See [CFP 3292] (https://wiki.edg.com/pub/CFP/WebHome/n3292.pdf).

Next Meeting(s):
  August 14, 2024, 3PM UTC
  ISO Zoom teleconference
  Please notify the group if this time slot does not work.

New action items:
  Jerome, Jim: Draft proposal to new wording for pole error
  Jerome: Summarize the usage of "may occur" with regard to numerical "anomalies"
  Damian: Send the group a proposal about Annex F/G language re. number ranges, esp. with signed 0
  Rajan: Submit to WG14 this completed item: Fix the title in the proposal in CFP 3112. Base document as well from N3219->3220 and ensure the clause numbering is correct
  Rajan: Submit to WG14 the proposal for initialization of SNANs, issue #20
  Fred: Write a proposal for SIGFPE being raised for exceptional conversion and I/O circumstances (being careful about raise())
  Jim: Write up notes about frexp() and behavior for model numbers
  Jim: Submit proposal for decimal language to WG14
  Jim: Submit proposal for 60559 macro change
  Damian: Ask 754 about midpoint and interpolation
  Jim: Include complex add and sub into the main body.
  Jim & everyone: Look at ways to strengthen the complex * and /, given the current code block.

Action items to be carried over:
   None

IEEE 754 liaison:
  No change since David's note

C++ liaison:
  Joshua: Midpoint and linear interpolation functions (later on today's agenda) are offered to C, if there's interest

WG14 meeting:
  None

C23 integration:
  Next WG14 meeting:
  September 30, Minneapolis. Mailing deadline is one month before the meeting.

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

  C2y drafts:
  The working draft is n3220

Carry over action items (Done unless stated otherwise):
  Jim/Jerome/Damian to follow up on C26 issue 1.
  Jerome: Worked with Jim to improve pole error definition, now an action item
  Jerome: Will tackle the matter of "occurs" vs. "may occur" for exceptions as a separate topic
  Rajan: Very interested in any change from "may occur" because it's a library change
  Fred: Many of these choices date back decades
  Damian to get a list of editorial issues in Annex G and send them out for future submission to
WG14.
   Damian: Have action item for next meeting
  .Jim: Put Annex G being purely IEEE and other parts into the main standard as a potential work
item for CFP on the agenda for next meeting.
  Jim: Add C2y Issue 23 onto the agenda for next meeting.
  Jim: Ensure that "frexp and double-double underflow" is on the agenda for next meeting.
  Jim: Ensure that "Midpoint and linear interpolation functions" is on the agenda for next meeting.
  Fred: Update issue 1 with the information from today.
  Fred: Move the sub-issues from CFP 3079 about "floating-point number" into Issue 8.
  Jim: Submit the proposal for C26 issue 19 (CFP 3118 with base document updated and checked for
accurate clause numbers) to WG14.
  Jim: N3291 2024/06/27 Thomas, Proposal for C2Y - Decimal floating-point number—misuse of
term
  Rajan: Fix the title in the proposal in CFP 3112. Base document as well from N3219->3220 and
ensure the clause numbering is correct. Submit to WG14.
  Rajan: Change the base document from N3219->3220 and ensure the clause numbering is correct
for CFP 3091. Submit to WG14.
N3287 2024/06/23 Bhakta, Nonsensical Parenthetical
  Rajan: Issue 20: Make CFP 3045 into a proposal for WG14.
  Jim: create a proposal for WG14 based on CFP 3074 regarding the HUGE_VAL with suffixes
change.
  Jim: make CFP 3080 on outdated dependency macro into a proposal for WG14.

TS-4 and TS-5 revisions
  Still waiting for updated draft of C23. Hanging paragraphs can change subclause numbers.

C2y issues
  Issues list
  https://wiki.edg.com/pub/CFP/WebHome/c26e.htm

Status of issues: https://wiki.edg.com/pub/CFP/WebHome/C26%20Issues%20status.pdf

Issues 1, 5, 18, 19, 21, 24 are covered to date
Issue 22 in Damian's court
Issue 23: Fred et al. discussed the current language prohibiting SIGFPE in math.h functions, while it may arise in radix conversions (1.0e999999) or I/O operations. Fred took an action, above.

Other issues:
frexp and double-double underflow
Jim: Will take action to ensure these apply only to model numbers
Jerome: The double double type is not floating point; it's an artifact built on fp
David: double double is a poor soul's quad, when the hardware doesn't support it

Midpoint and linear interpolation functions
https://www.open-std.org/jtc1/sc22/wg21/docs/papers/2019/p0811r3.html
Joshua: these will go into C++; they're offered for C's interest
David, et al.: perhaps more interesting in the integer doman, out of CFP's wheelhouse
David: Damian can gauge 754 interest, but it's really a hardware matter; GPUs may support them (but only to the extent they're needed for graphics)

Dead C Scrolls -- Rex Jaeschke's 1989 email
Jim, Fred, Jerome: Old docs for NCEG, leading to C99
Fred: Reminder (for Jerome) that C was first standardized in 1989

Participants
Jim: Scroll down the wiki page (as Jerome had to) to find yourself, and many others, on the Participants list, with a chance to update your profile