WG14 N2988
Meeting notes

C Floating Point Study Group Teleconference
2022-04-20
8 AM PDT / 10 PM EDT / 3 PM UTC

 Attendees: Rajan, Jim, Fred, Vivian, Ian, David H

 New agenda items
(https://wiki.edg.com/pub/CFP/WebHome/CFP_meeting_agenda_20220420-update.pdf):
  None.

 Next Meeting(s):
  May 25th, 2022, 3PM UTC
  ISO Zoom teleconference
  Please notify the group if this time slot does not work.

 Carry over action items (Done unless specified otherwise. Details below.):
   David H: Get an example for the scaled reduction functions (perhaps by asking Jason or Jim or looking into the IEEE references). - Not done.
   David H: Get an example for the augmented arithmetic functions (perhaps by asking Jason or Jim or looking into the IEEE references). - Not done.

 Last meeting action items:
  Done unless specified otherwise. Details below in "Action items results" section.

 New action items:
  Fred: Create a follow-up paper with the C++ information to re-propose it.

 C++ liaison:
  None.

 C23 integration:
  No new drafts.

 Carry-over action items results:
   Fred: Ask C++ what their issues with *_HAS_SUBNORM are and if they are OK with obsoleting it.
    Fred: C++ makes no reference to those symbols, just to the C header. They have their own symbols with different meaning. If the implmentation supports the format but not necessarily the operations, they say they have subnormals. This means we can do whatever and it would have no impact on them.
    Jim: It is interesting they have a different mechanism with a different meaning.

Rajan: Put it into the WG14 CFP report the outside request to make 7.12.13 and F.10.10's titles "Floating"->"Fused" that is editorial. [See CFP2396,2397]
   Done.

   Fred: Look at updating the C26.TXT file to follow what Mike is doing for 754.
   Keep open.

   David H: Get an example for the scaled reduction functions (perhaps by asking Jason or Jim or looking into the IEEE references).
   Keep open.

   David H: Get an example for the augmented arithmetic functions (perhaps by asking Jason or Jim or looking into the IEEE references).
   Keep open.

 Action items results (from previous meeting):
   David H: Look into why Rajan's email's don't carry the attachment links that work when archived.
   Keep open.

   Jim: Look into the proposed update to TS Part 4 counted page 13, line 30 to see if "+0" should be "positive zero" and whether we should specify the quantum exponent.
   Jim: Fred sent a note saying +0 is used throughout to indicate a value for a floating-point number. No change needed.

   Jim: Proposed update to TS Part 4 scaled functions counted page 16, line 36: Change "of NaN" to "or NaN".
   Done.

   Jim: Look into the proposed update to TS Part 4 counted page 21, line 20: Make the first word plural (specification*s*). [See CFP2418,2420]
   Jim: Reworded instead.

 Other Issues:
   CFP report to WG14
   Jim: Add in augmented arithmetic to part 4, say working on vs proposing, say industry terminology.
   Rajan: OK. Done.

   Obsolescing *_HAS_SUBNORM macros
   Fred: The committee did not want to remove this without any warning.
   Jim: Do you see a way to focus on obsolescing it?
   ^AI: Fred: Create a follow-up paper with the C++ information to re-propose it.

   Freestanding [See CFP2416,2417]
   Rajan: Latest change for hosted environment being non-zero did not make it into the paper submitted to WG14 but is noted for presentation and for a later update if accepted.

Prefixes for the standard library (N2968)
    Rajan: General C paper, not directly CFP related.
    Jim: What does that APIs and ABIs part mean?
    Rajan: Different syntax in different implementations will have a unified single name with this prefix.
    Fred: Similar to what we did with tgamma.
    Jim: Some new math functions may have this prefix and others wouldn't.
    Rajan: It would apply to the TS update as well.
    Jim: More concerned with logf128 having the prefix and logd128 not having the prefix or something like that.
    Vivian: I think that would not be an issue since it is not "desirable".

Others?
  Jim: Part 4 TS updates:
    C23->C2X
    Boilerplate changed.
    Conformance requires annex F.
    Freestanding seems fine with Rajan's proposed changes
    5.3#1 "if" -> "if and only if"
    For the functions, if long double is double double, the reduction and augmented arithmetic functions are not supported.
    Fred: Wouldn't double-double qualify as an implementation of augmented arithmetic?
    David: You can't get the exceptions to come out right for a typical double-double implementation.
    Jim: For augmul, the exceptions paragraph was changed since it is different from augsub.
    Fred: If the head does not underflow but the tail does, that's considered an underflow?
    Jim: Yes.
    Fred: Doesn't seem right to me.
    Jim: What you are trying to get is a full precision representation of the head and tail.
    Fred: I think that means the head will be a subnormal and the tail will underflow.
    Jim: The IEEE spec says it does underflow.
    Jim: Bibliography updated.

  Jim: Part 5 should be easier as nothing is taken out or put in. Just rebased.

  Vivian: Why is HAS_SUBNORM macro being obsoleted?
    Jim: It is ambiguous on how to define the macro. The macro doesn't match up with existing practices.

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