WG14 N2441
Meeting notes

C Floating Point Study Group Teleconference

2019-09-18
8 AM PDT / 11 AM EDT / 3 PM UTC

Attendees: Rajan, Jim, Mike, David H.,

New agenda items:
None.

Carry over action items:
Jim: Draft a slide deck and a proposal based on CFP1331. - Done.

Last meeting action items:
Jim: Reword CFP1337 to avoid stating standard types with non-power-of-2 bases with hexadecimal still being exact. Submit as an N document. - Done.
Jim: Respond with needing both NAN and NAN(forms, and what the payload flexibility should be. - Done.
Fred: Rewrite the proposed CFP1360 paper using the CFP recommendations. - Keep open, progress has been made.
Jim: Discuss the namespace issue next meeting. - Done.
Jim: For the FLT_EVAL_METHOD example, add _Float16 in since it can show that evaluation to type is not always true. - Done.

New action items:
CFP: Put the tgmath redefinition as a proposal to the standard once we have a base document with TS Part 3 in it.
Jim: Respond to Fred's question in CFP1377 about where the SNANF information is stated.
CFP: Look at naming issue and propose responses to the questions in the paper.

Next Meeting(s):
Wednesday, October 16th, 2019, 11:00 EDT, 8:00 PDT, 3:00 PM UTC
Same teleconference number.
Please notify the group if this time slot does not work.

Discussion:
754 revision:
Request to move to ISO (all voted for that by the revision group), but haven't heard back from yet.
When should we (CFP) propose our support for 754-2019 to WG14?

C++ Liaison:
Nothing.

C2X integration:
Draft with TS 1, 2, and 4a
Part 3
Part 4b - Looking as an updated TS.
Part 5a,b,c,d

No new draft yet, but may not have part 3 and 4 before WG14 meeting.

Action item details:

Jim: Draft a slide deck based on CFP1331 (http://wiki.edg.com/pub/CFP/WebHome/C2x_proposal_-_TS_18661-5abc-20190709.pdf, http://wiki.edg.com/pub/CFP/WebHome/n2421.pdf)

Looks good.

Jim: Reword CFP1337 to avoid stating standard types with non-power-of-2 bases with hexadecimal still being exact. Submit as an N document (http://wiki.edg.com/pub/CFP/WebHome/n2416.pdf).

Looks good.

Jim: Respond with needing both NAN and NAN(forms, and what the payload flexibility should be. See (SC22WG14.17010) [Cfp-interest 1370]

Looks good.

Fred: Rewrite the proposed CFP1360 paper using the CFP recommendations. See thread starting with [Cfp-interest 1388] Math functions & range errors

Defer until Fred is available.

Jim: Discuss the namespace issue next meeting (see CFP 1405, 1406).

These made it though the process as part of the TS's.

Made it through the process again for inclusion into C2X.

Arguments for namespace and style of names.

Projected problems, none yet found in the field despite implementation (GNU for current TSs, HPUX, Sun, Intel, IBM for prior TR specification for example).

Compiler changes are more difficult and more unlikely to happen than library changes so keeping function pointers and tgmath is an issue.

May be assuming weak symbols and separate libraries for math, dealing with shared objects and other things like that.

1.2 q2) It is not the editor that needs to do this via integration. It is a specification. Not sure how to do this without magic.

Can have a new math header, with the math_ prefix, everything else stays the same.

Keep this on the agenda.

Jim: For the FLT_EVAL_METHOD example, add _Float16 in since it can show that evaluation to type is not always true (see CFP 1386).

Rajan: The 'else' separating double and long double from float should be reworded. Also, "regarding" should be changed to be something else.

Jim: We can reword the "else", but for "regarding" we use that in the place we define integer and _Decimal in the TS's.

Agree to make the change.

AI: CFP: Put the tgmath redefinition as a proposal to the standard once we have a base document with TS Part 3 in it.

Other issues:

Follow-up on what does “normalized” mean in C? See CFP 1399.

Jim: Things that are not normal or subnormal (like double-double) does need other classification macros for values outside the C model. We can leave it for the implementations or define something like FP_NONMODEL.

David: Presumably more recent implementations figured out what to do. Old ones may want to do something, but Fred would probably have more of an interest in this (for test purposes). You could have non-model and double-double where the implementation would use one and testing could use the other.

Jim: It is stated that they are disjoint.
Not urgent. Keep as a carry over action item.

Proposal for why there is a second name for log1p (http://wiki.edg.com/pub/CFP/WebHome/n2424.pdf).
Agree.

Specifying more special cases for math functions, e.g., periodicity for half-revolution trig functions. Perhaps as recommended practice.
Postpone.

SNANF (See CFP 1366, 1372). Can we close this?
AI: Jim: Respond to Fred's question in CFP1377 about where the SNANF information is stated.

For WG14 meeting
21-25 October, 2019 – Ithaca, New York, US [N 2327]
Pre-Ithaca – 23 September 2019

N2384 2019/05/13 Thomas, C2X proposal - F.8 update
N2400 2019/06/09 Thomas, C2X proposal - why no wide string strfrom functions
N2406 2019/07/28 Tydeman, SNAN: initialization and unary +
N2407 2019/07/28 Thomas, Proposal for C2X - TS 18661-5abc supplementary attributes
N2416 2019/09/08 Thomas, Proposal for C2X - floating-point negation and conversion
N2421 2019/09/12 Thomas, TS 18661-5abc for C2X - slides http://wiki.edg.com/pub/CFP/WebHome/n2424.pdf- C2X proposal - footnote about why logp1

Activities
Review activities in progress