

WG14 N2398

Meeting notes

C Floating Point Study Group Teleconference

2019-05-21

8 AM PDT / 11 PM EDT / 3 PM UTC

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

New agenda items:

None.

Carry over action items:

All: Review the rationale for part 5 a, b, c proposal. - Carry over.

Fred: Create papers for the SNAN initialization and unary + operation as CFP papers (CFP 1249, 1253, 1247, 1250) for future submission to WG14. - Carry over.

Last meeting action items:

Ian: Forward message from Hubert about FLT_EVAL_METHOD, etc. - Done.

Jim: Post the IEEE 2019 draft for the CFP group on the wiki. - Done (see 4/25 note).

Jim: Ensure that the quantum exponents table defines dN sufficiently in C2X. - Carry over (review next draft).

Jim: Get an N number for CFP1277 and submit it. - Done.

Jim: Get an N number for CFP1282 as a proposal and submit it. - Done (CFP review).

New action items:

Jim: Investigate creating our own CFP compendium.

Fred: Give a new version of the SNAN initialization paper (as per CFP1316).

Jim: Point out to Jens that we're using two spellings for analog in the current C2X draft.

Jim: Look into the commas needed in the why_no_wide_string_strfrom_functions document, then get a document number and submit it.

Jim: Keep Rounding of negated constants on the agenda to discuss for next meeting.

Jim: Keep fesetexcept on the agenda to discuss for next meeting when Fred is present.

Next Meeting(s):

Wednesday, June 26th, 2019, 11:00 EDT, 8:00 PDT, 3PM UTC

Same teleconference number.

Please notify the group if this time slot does not work (note the new day).

[Rescheduled after the meeting to Wednesday, June 19th, same time.]

Discussion:

754 revision:

See CFP 1317.

Draft 50 is the technical content that will go forward.

C++ Liaison:

None.

WG14 meeting (April 29th-May 3rd):

CR process going forward, with Blaine Garst.

See CFP 1318 (Blaine's email forwarded by Jim).

Jim: The review cycle is not too short. It is good. Also us taking over the the compendium is reasonable. A lot of what we had is in C2X, so any changes to parts 1-4a will go through the C2X process. Our compendium will be very small now. I liked the meeting history in the original compendium. I will keep that.

Jim: Currently CR's come with some suggested change, rather than questions.

Blaine: We're not clear yet as a committee. I don't think the compendium should carry normative content forward. The editors can make the changes directly. Still need to work out the process.

Jim: I currently put changes into my editors draft as soon as we have a CR/DR. Nothing goes out until it is closed.

Mike: Often have to go back and make changes to text people want in immediately.

Blaine: Having the committee agree to the words makes this much easier.

AI: Jim: Investigate creating our own CFP compendium.

See CFP 1309.

N2323 will have a new N document (N2379) that doesn't talk about operations which was what was voted in as direction.

N2326: Jim: I think there is a blurring of value and representation. Instead of normalized it should be normal number. It has a value of some normalized form in the model. I think this needs some more thought.

C2X integration:

Part 1 – Integration completed.

Part 2 – Integration mostly done.

Part 3 – Expecting N2342 is sufficient for the WG14 editors.

Part 4a – We need to work on something to give to the WG14 editors for integration into C2X.

Part 5a,b,c,d – Considering new proposals for a,b,c

Action item details:

Fred: Create papers for the SNAN initialization and unary + operation as CFP papers (CFP 1249, 1253, 1247, 1250) for future submission to WG14.

See Tydeman's CFP 1290. Jim's CFP 1316.

AI: Fred: Give a new version of the SNAN initialization paper (as per CFP1316).

All: Review the rationale for part 5 a, b, c proposal.

<http://wiki.edg.com/pub/CFP/WebHome/n2120.pdf>, <http://wiki.edg.com/pub/CFP/WebHome/n2121.pdf>, <http://wiki.edg.com/pub/CFP/WebHome/n2122.pdf>

Ian: Forward message from Hubert about FLT_EVAL_METHOD, etc. See Ian's CFP 1287.

Jim: Seems C++ takes C FLT_EVAL_METHOD.

Jim: Ensure that the quantum exponents table defines dN sufficiently in C2X.

Jim: Jens wanted to use or refer to the macros in tgmth, and I wanted to avoid referring to tgmth. This will be an item for the next meeting.

Jim: Get an N number for CFP1277 and submit it.

<http://wiki.edg.com/pub/CFP/WebHome/n2384.pdf>

Jim: Get an N number for CFP1282 as a proposal and submit it (possibly after CFP review?).

http://wiki.edg.com/pub/CFP/WebHome/C2x_proposal_-_why_no_wide_string_strfrom_functions.pdf

Mike: Slight editorial comment: Should avoid spellings that have one side identical to the other.

AI: Point out to Jens that we're using two spellings for analog in the current C2X draft.

Mike: Should be a comma after the etc. at the end too.

AI: Jim: Look into the commas needed in the why_no_wide_string_strfrom_functions

document.

Other issues

Rounding of negated floating-point constants under FENV_ROUND pragma.

See Jim's CFP 1314 and Mike's 5/14 reply.

Jim: Same issue if you add more digits to the constant.

Mike: Not really.

Jim: In C the negation is an operator, not part of the constant.

Matters for +inf or -inf rounding, which is different from what strtod or scarf would do.

Mike: They would have to know but programmers do have a choice with this.

Jim: Could be done with parenthesis around the constant too.

Mike: It is an issue for unary + as well.

Jim: It shouldn't be. This is only for unary -.

Jim: C doesn't have any way of representing negative values as a constant.

AI: Jim: Keep Rounding of negated constants on the agenda to discuss for next meeting.

fesetexcept and optional inexact

See CFP email thread "fesetexcept() and optional inexact"

AI: Jim: Keep fesetexcept on the agenda to discuss for next meeting when Fred is present.

Fred's WG 14 papers:

See WG14 email thread "N2380: printf of NaN()"

Jim: The sign of the NaN is also not portable across implementations.

Mike: This sounds like the most non-problem I can think of.

Existing portable code already has to deal with this along with all other implementation defined behavior.

Jim: 60559 has payloads being implementation specific. No goal of making them portable, the opposite in fact.

Mike/Rajan: This can be done portably now with output to a sprintf buffer and processing the NaN string.