WG14 N2371
Meeting notes

C Floating Point Study Group Teleconference

2019-03-18
8 AM PDT / 11 PM EDT / 3 PM UTC

Attendees: Rajan, Jim, David H., Ian

New agenda items:
None.

Carry over action items:
Ian: See if there is an incompatibility between C and C++ for constants being evaluated to a wider format (Ex. FLT_EVAL_METHOD affects constants in C++, and wider return values) - Keep open.
Seems to be incompatible in the older C++ standard. Ex. C++ did not allow evaluation in a greater precision than the type.
2019/03/18: Libraries no longer have the standards due to cost. The books on C++ didn't mention this either.
Working copies are in the Github repository linked to at https://isocpp.org/std/the-standard
Jim: Update the binding table in parts 1 and 2 to handle the new IEEE-754:2018 functions when published. - Close (added to a list later on).
All: totalorder* differ for NaN payloads: Note that we don't have approval to move up to 754 201x yet. - Close since the TS is integrated into C2X and once the reference to the IEEE standard gets updated this is a non-issue.
All: Review the rationale for part 5 a, b, c proposal. - Carry over.
Rajan: Say to WG14 that CFP supports removing the WANT macros and leaving the rest as is due to Fred's reasoning. - Carry over

Last meeting action items:
Jim: Put a list of new items that need to be done like the binding table and the totalorder* carry over action items as well as adding in the min/max and augmented arithmetic to a new part 4 revision. - Done.
Jim: Look at the part 3 X.2.6 change where the removal of the float _Imaginary, etc. part of the list may imply those are not valid types anymore. - Done.
Jim: Get a document number to submit the Part 3 as an Annex proposal to WG14 for the mailing. - Done.
Jim: Correct typo in page 1 of the proposal for part 4a ("As shown in the table below, C already supports 22 *of* the 39...") - Done.
David H: Take a closer look at the new proposal for part 4a (http://wiki.edg.com/pub/CFP/WebHome/C2x_proposal_-_TS_18661-4a-2-20190213.pdf) to ensure it is good for submission via the reflector so it can be submitted by Jim to WG14. - Done.
All:
Review http://wiki.edg.com/pub/CFP/WebHome/update_for_C2X_payload_functions.pdfwithin a week. If no changes, Jim will get a document number and send this into WG14. - Done.
Jim: Look to see if there is a place to put a note to address the alternate exception handling in annex F to clarify how C specifies using default exception handling only. - Done.
Jim: Get a document number to submit the Part 2 (http://wiki.edg.com/pub/CFP/WebHome/cfp2x-C2X-20190215.pdf) to WG14 for the mailing. - Done.

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.

All: Consider why we didn't have wide string from functions and if we should do them. - Done.

New action items:

Jim/Rajan: Create a slide deck to show the changes made to make Part 3 into an Annex as WG14 requested.

Jim: Make CFP 1277 into a C2X proposal.

Jim: Propose a footnote to describe why there are no wide string strfrom functions (compose strfrom with wide string conversion functions is sufficient)

Next Meeting(s):

Tuesday, April 23rd, 2019, 11:00 EDT, 8:00 PDT, 3PM UTC

Same teleconference number.

Discussion:

754 revision:

Handled all the open issues for recirculation. Preparing that draft which should occur after March 22nd (for 10 days).

As mentioned before, can only add new comments on new text, not old text.

Uncertainty factor: IEEE boilerplate is full of bugs.

C++ Liaison:

None.

WG14 meeting (April 29th-May 3rd) pre-meeting mailing deadline: March 18th, 2019.

Meeting information: http://www.open-std.org/jtc1/sc22/wg14/www/docs/n2318.htm, Venue information N2308 (linked to in the agenda).

CFP agenda items P1 integration P2 integration

P3 as annex – N2342

P4a proposal - N2355

Update for C2X payload functions – N2356

P4 CR for rootn case differs from IEEE 754 – N2309

Unclosed CR/DRs

P3 DR 13 - Type-generic macros for functions that round result to narrower type

P1 DR 16r - tgmath cbrt macro

P1 DR 20 - P1 CR for obsolescing DECIMAL_DIG

P1 DR 21 - printf of one-digit character string

P3 DR 22 - P3 CR for obsolescing DECIMAL_DIG

P2 CR 23 - llquantexp invalid case

P1 CR 24 - remainder NaN case

P1 CR 25 – totalorder parameters

DR 500 - Ambiguous specification for FLT_EVAL_METHOD – marked as C2x

DR 501 - Can DECIMAL_DIG be larger than necessary?

C2X integration:

Part 1:

Integrated into a working C2X draft. Posted on the wiki. See WG14 message 16214.

Part 2:

A draft is posted on the wiki for review.

Part 3:

A draft as an annex is ready for review today.

Part 4ab:
4a has an updated proposal.
For 4b, we should leave as a TS and add in the augmented arithmetic.

Part 5abcd:
Leave to after the Spring 2019 WG14 meeting.
Jim: (a) is related to evaluation methods.
Ian: Similar to my action item.
Jim: I think they are worth making another pitch on these.
Looking to rework the proposals.

Action item details:
Jim: Put a list of new items that need to be done like the binding table and the totalorder* carry over action items as well as adding in the min/max and augmented arithmetic to a new part 4 revision. http://wiki.edg.com/pub/CFP/WebHome/For_IEEE_754-2019-20190305.pdf
Jim: min/max: Since parts 1 and 2 will soon be in C2X, the separate proposals (requested by WG14) here may need to be combined again.

Jim: Look at the part 3 X.2.6 change where the removal of the float _Imaginary, etc. part of the list may imply those are not valid types anymore. See CFP 1268

Jim: Get a document number to submit the Part 3 as an Annex proposal to WG14 for the mailing. http://wiki.edg.com/pub/CFP/WebHome/n2342.pdf
AI: Jim/Rajan: Create a slide deck to show the changes made to make Part 3 into an Annex as WG14 requested.

Jim: Correct typo in page 1 of the proposal for part 4a ("As shown in the table below, C already supports 22 *of* the 39...")
N2355.

David H: Take a closer look at the new proposal for part 4a (http://wiki.edg.com/pub/CFP/WebHome/C2x_proposal_-_TS_18661-4a-2-20190213.pdf) to ensure it is good for submission via the reflector so it can be submitted by Jim to WG14.
See David H's CFP 1272. http://wiki.edg.com/pub/CFP/WebHome/n2355.pdf

All:
Review http://wiki.edg.com/pub/CFP/WebHome/update_for_C2X_payload_functions.pdfwithina week. If no changes, Jim will get a document number and send this into WG14. http://wiki.edg.com/pub/CFP/WebHome/n2356.pdf

Jim: Look to see if there is a place to put a note to address the alternate exception handling in annex F to clarify how C specifies using default exception handling only.
See CFP 1270, 1277.
directed rounding -> rounding direction
AI: Jim: Make CFP 1277 into a C2X proposal.

Jim: Get a document number to submit the Part 2 (http://wiki.edg.com/pub/CFP/WebHome/cfp2x-C2X-20190215.pdf) to WG14 for the mailing. http://wiki.edg.com/pub/CFP/WebHome/n2341.pdf

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

Rajan: Say to WG14 that CFP supports removing the WANT macros and leaving the rest as is

due to Fred's reasoning. Note: Also mention CFP's appreciation to Jens for the integration editing (done really well).

See Rajan, Fred, and Jim's email CFP 1242, 1243, 1244, 1261.
See WG14 email 15982 – 15983, 15985.

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

All: Consider why we didn't have wide string from functions and if we should do them.
Sufficient to do strfrom, convert to wide string.
AI: Jim: Propose a footnote to describe why there are no wide string strfrom functions (compose strfrom with wide string conversion functions is sufficient)

Other issues
Fred's WG 14 papers
See Fred's email CFP 1246.
Decide on our (CFP) position next meeting and Rajan to present our view.
