WG14 N2535
Meeting notes

C Floating Point Study Group Teleconference
2020-05-20
8 AM PDT / 11 AM EDT / 3 PM UTC

Attendees: Rajan, Jim, David O., Fred, Bill Ash (INCITS, SC22), Mike, David H., Ian, Damian

New agenda items:
   None.

Carry over action items:
   David H.: Look into Jim's duplicated CFP messages. Also some missing messages if the person was in the To list (while CFP was cc'd). David to upgrade mailman. - Keep open.

Last meeting action items:
   Jim: Add a note to Part 3 as an Annex to mention the redundant decimal suffixes (df, dd, dl vs d32, d64, d128). - Done.
   Jim: Add a forward reference in X.4.3 to a new example for the use of encoding conversion in the encoding functions section. - Done.
   Jim: Need to look into seeing if _Imaginary types should be added to the list of types for carg, cimag, conj, cproj, creal (p32, line 5 of http://wiki.edg.com/pub/CFP/WebHome/cfp3x-annex-20200414.pdf) - Done.

New action items:
   Jim: Let WG14 know about the publication of ISO/IEC 60559:2020
   Jim: Get new paper numbers for the IEEE 2019 updated to IEC 60559:2020 and submit to WG14.
   All: Review Part 3 as an annex (http://wiki.edg.com/pub/CFP/WebHome/cfp3-annex-20200506.pdf)
   Jim: Check the WANT macro issue brought forward in CFP 1581.

Next Meeting(s):
   Wednesday, June 17th, 2020, 11 AM EDT, 8 AM PDT, 3 PM UTC
   ISO Zoom teleconference
   Please notify the group if this time slot does not work.

   Will share documents via Zoom (screen sharing) next meeting.

Discussion:
 IEC:
   The ISO/IEC 60559 standard has been adopted in 2020.
   AI: Jim: Let WG14 know about the publication of ISO/IEC 60559:2020

 C++ Liaison:
   Nothing new.

 C2X integration (http://www.open-std.org/jtc1/sc22/wg14/www/docs/n2478.pdf):
   Part 3 - Investigating updates
   Part 4b

Part 5a,b,c,d
Proposals for IEEE-2019 support have been submitted.
   Jim: Now ISO/IEC 60559:2020. We can update what we have submitted to point to the published standard.

   Jim: See [Cfp-interest 1576] Fwd: JTC 1/SC 22/WG 14 New editor and backup editor

   Still missing N2490 (wide string functions), N2476, N2446 which were approved but need to be in C2X still.

Action item details:
   David: Look into Jim's duplicated CFP messages. Also some missing messages if the person was in the To list (while CFP was cc'd). David to upgrade mailman.
      See [Cfp-interest 1577] new sendmail installed on oakapple.net/ucbtest.org - David H.
      Rajan still saw a dup note to David Keaton.

   Jim: Add a note to Part 3 as an Annex to mention the redundant decimal suffixes (df, dd, dl vs d32, d64, d128).
      Looks good.

   Jim: Add a forward reference in X.4.3 to a new example for the use of encoding conversion in the encoding functions section.
      Looks good.

   Jim: Need to look into seeing if _Imaginary types should be added to the list of types for carg, cimag, conj, cproj, creal (p32, line 5 of http://wiki.edg.com/pub/CFP/WebHome/cfp3x-annex-20200414.pdf)
      See [Cfp-interest 1569] Re: TS3-as-annex - Jim
      Looks good.

Other issues
   Update proposals to refer to IEC 60559:2020
      See http://wiki.edg.com/pub/CFP/WebHome/C_support_for_IEC_60559-2020-20200515.pdf
       http://wiki.edg.com/pub/CFP/WebHome/C2x_proposal_-_min-max_functions-20200515.pdf
      Good to move forward with the updates? Yes.
      AI: Jim: Get new paper numbers for the IEEE 2019 updated to IEC 60559:2020 and submit to WG14.

   Review revised TS3-as-annex, including
      ISSUE 1: Support for conversions from binary types and formats to decimal non-arithmetic formats
         To represent binary exactly in a string, you need hex representation, which is not supported in the string to encoding side.
         Alternatives: Create new functions, don't support these conversions.
         Issues with hex support include specifying what happens with rounding.
         IEEE says decimal character sequences. Explicitly says to allow different radix operands.
         Conversion to an intermediate type will result in another rounding, so we can't do that. It would generally work for narrower to wider types, but not the other way.

      ISSUE 2: Support for conversions from extended types to decimal non-arithmetic formats
      http://wiki.edg.com/pub/CFP/WebHome/conversions-20200513.pdf
         Jim: This seems to not be true. We should be good here.

      ISSUE 3: Dependency on an approved change in the C standard which hasn't been made yet.

Distributed detailed review (See http://wiki.edg.com/pub/CFP/WebHome/cfp3-annex-20200506.pdf)

   X.2 Types -
   X.3 Characteristics in <float.h> -
   X.4 Conversions - David H.
   X.5-X.8 Lexical elements, Expressions, Declarations, Identifiers in standard headers - Rajan
   X.9, X.10 Complex, Floating-point environment - Damian
   X.11 (X.11.1, X.11.2) Math Macros and Function prototypes - Fred
   X.11.3, X.12 Encoding conversion functions, Numeric conversions functions in stdlib.h - David H.
   X.13 Type-generic math - Fred

   Jim to get a new version of this document with x-ref of headings to check. Rajan to help Jim with Word issues for this offline.

  C2X Annex B for math identifiers
   See [Cfp-interest 1572] C2X Annex B for <math.h> - Jim Thomas
   AI: Jim: Check the WANT macro issue brought forward in CFP 1581.
   Wasn't discussed in WG14 as far as we can recall.
   Rajan: Like the addition of the conditional macro heading line, though does have the multiple location for a specification maintenance issue.
   General consensus to follow what is in http://wiki.edg.com/pub/CFP/WebHome/annex_B-20200509.pdfpage 3.
   David O: C++ does use some lists similar to page 3 as well in some places.

  Constant expressions evaluated in translation environment
   See [Cfp-interest 1579] Update footnote - Fred J. Tydeman
   Agree with the first question.
   For the second one:
   Jim: Doesn't this just happen automatically with the same environment?
   Fred: No, for example, Intel has the static mode being the same, but when cross compiling it could be larger than the target when used for automatics. It happens for the same machine as well. Expression evaluation and rounding modes being the same still has this issue.