WG14 N2234
Meeting notes

C Floating Point Study Group Teleconference

2018-03-13
9 AM PDT / 12 PM EDT

  Attendees: Rajan, Jim, Fred, Mike, Ian (late entry)

  New agenda items:
   None

  Last meeting 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 (Hubert: Not defined and left up to C)
   Jim: Update the binding table in parts 1 and 2 to handle the new IEEE-754:2018 functions when published. - Keep open.
   All: Look into why the cbrt macro (DR16) has the parameters inside the generic selection.
   Jim: Re-update activities list. - Done.

   Rajan: Ask Ian if he knows of someone who can take over the C++ liaison role for him. - Done: Ian may be continuing, no backup that he knows of.
   Unassigned: C footnote 232 uses the extraordinary roundoff error aspect from IEEE that was taken out in the IEEE 2008 draft. Fix this? - Done.
   Jim: Add in part of the note for the pow function in part 1 somewhere as a change to F.3 to restate that the specifications should match IEC 60559. - Done.
   Jim: Get a DR against part 4 for http://wiki.edg.com/pub/CFP/WebHome/DR_for_missing_specification_of_preferred_quantum_exponents.pdf. - Done (DR18, N2204).
   Fred: Put the words for the roundTiesToEven with a change to Annex F as a part 1 DR as per his note on 2018/02/18 with the change of "which could produce" -> "whose nearest neighbors are". - Not done.
   Jim: [http://wiki.edg.com/pub/CFP/WebHome/changes_for_obsolescing_DECIMAL_DIG.pdf:](http://wiki.edg.com/pub/CFP/WebHome/changes_for_obsolescing_DECIMAL_DIG.pdf)Make the changes to the type_ to reflect the FLT, DBL and LDBL prefixes. - Done (2018/02/21 email, replaced by 2018/03/06 email).
   Jim: TS DR15 (http://wiki.edg.com/pub/CFP/WebHome/DR_for_macros_for_non-arith_formats-20180211.pdf):
    Change "Suggested" to "Proposed", "into a proposed" -> "as is into a proposed" - Done.
   Fred, Rajan: Check if the _Generic replacement suppress macro expansion. - Done (no suppression).
   Jim: Get a new N document for the new proposed TC for TS DR16. - Done.
   Jim: Write up the TS DR13 2018/02/18 Jim's email as a suggested TC. - Done.
   David: Look into the IEEE binding differences to see if they are real issues (from Fred's email on 2018/02/18). - Not done.

  New action items:
   Jim: Create a DR against part 1 for updating C footnote 232 as per emails on 2018/02/22.
   Jim: Obsolescing DECIMAL_DIG (http://wiki.edg.com/pub/CFP/WebHome/changes_for_obsolescing_DECIMAL_DIG-20180306.pdf): Change 1: Change "decimal" to "decimal character sequence" throughout the

document to avoid confusion with DFP. Also need to qualify it with the rounding mode.

    Jim: Obsolescing DECIMAL_DIG (http://wiki.edg.com/pub/CFP/WebHome/changes_for_obsolescing_DECIMAL_DIG-20180306.pdf): Change TS 18661-1 10.1: Needs the round to nearest rounding mode text as per the previous action item.

    Jim: Obsolescing DECIMAL_DIG (http://wiki.edg.com/pub/CFP/WebHome/changes_for_obsolescing_DECIMAL_DIG-20180306.pdf): Change TS 18661-1 10.1: Typo: IEC 60669 -> IEC 60559

    Jim: Obsolescing DECIMAL_DIG (http://wiki.edg.com/pub/CFP/WebHome/changes_for_obsolescing_DECIMAL_DIG-20180306.pdf): Get a document number and submit in time for the mailing if possible.

    Jim: TS DR16: Remove the cbrt examples in parts 2 and 3 for cbrt as part of DR16 as a note for an editorial change.

    Jim: TS DR13: http://wiki.edg.com/pub/CFP/WebHome/Re-revised_suggested_TC_for_CFP_DR_13-20180223.pdf:Send it out (with fixes to the font/alignment).

    Jim: Reword http://wiki.edg.com/pub/CFP/WebHome/NaN_payload_functions_for_C-20180311.pdfF.10.13 description to say something along the lines of "a floating point number with an unsigned integer value" and for the function descriptions as well.

    Fred: http://wiki.edg.com/pub/CFP/WebHome/in_flight-20180313.pdf:See where we are for inconsistent spec for infinities.

    Fred: http://wiki.edg.com/pub/CFP/WebHome/in_flight-20180313.pdf:See where we are for missing Annex F spec for new functions.

    Jim: Working drafts: Try red strike-through for parts 2-5 and red caret for part 1.

Next Meetings:
Tuesday April 10th 2018, 12:00 EDT, 9:00 PDT
Same teleconference number.

Discussion:
Working drafts of the TS's:
  Seems helpful.
  Posted. Links on the CFP homepage to the working drafts.
   Since not DIS based, can distribute freely.
  Jim: Try red strike-through for parts 2-5 and caret for part 1.

  Action item details:
  C Footnote 232 (extraordinary roundoff): As per emails around 2018/02/22
   Fred: Applies to even exact small values.
    Jim: Yes. But remember range errors are allowed but not required.
   Jim: Should be a DR against part 1. Can be against C but part 1 made it worse.
   *Jim: Create a DR against part 1 for updating C footnote 232 as per emails on 2018/02/22.
   Note: This change is not in the working drafts yet.

  Note for consistency with IEC 60559:
   Editorial change.
   Present in the working drafts.

  DR about roundTiesToEven:
   Fred: Upcoming before next meeting as Fred will not be present for the next meeting.

  Changes for obsolescing DECIMAL_DIG: As per 2018/03/06 email from Jim
   First Change:
    *Jim: Change "decimal" to "decimal character sequence" to avoid confusion with DFP throughout the document.
    *Jim: This change should say it should be roundToNearest to keep the identity function.

Change: C11 F.5
  Note that the part 1 change will supersede this change.
  Change: TS 18661-1 10.1
   *Also needs the round to nearest rounding mode.
   *Need to correct IEC 60669 -> IEC 60559
  Attempt to get this in by the WG14 mailing (March 26th deadline) for the next WG14 meeting.

  New TC for TS DR16 (cbrt):
   Fred/Rajan: Better to drop the examples from part 2 and 3.
   Jim: We should say something along the lines of "if the supported types are float, double, and long double"
     Rajan: Since this is an example, and non-normative, we should just leave it as is.
   *Jim: Remove the examples in parts 2 and 3 for cbrt as part of DR16 as a note for an editorial change.
   The part 1 change is a part of the working drafts.

   TS DR 13 (type generic for narrower type: http://wiki.edg.com/pub/CFP/WebHome/Re-revised_suggested_TC_for_CFP_DR_13-20180223.pdf):
   Font and alignment changes have been fixed.
   *Jim: Get a document number and send it out.

  IEEE 754 revision:

  C++ liaison:

  Issues:
   Does CR_DECIMAL_DIG have the same issues as DECIMAL_DIG?
   Jim: No, since it is a new macro and not changing anything that is already present.

  Other issues:

  Binding for IEEE 754-2018:
   Need an updated list of changes in IEEE.
   Jim to talk to David H. to get this.
   http://wiki.edg.com/pub/CFP/WebHome/NaN_payload_functions_for_C-20180311.pdf:
   Changes are compared to part 1.
   Trying to align to what 754 has regarding payloads.
   Rajan: Saying unsigned integer at the start and then "sign of the returned integer is positive" mismatch.
   Mike: Say a floating point number with an unsigned integer value in the main description?
   *Jim: Reword http://wiki.edg.com/pub/CFP/WebHome/NaN_payload_functions_for_C-20180311.pdfF.10.13 description to say something along the lines of "a floating point number with an unsigned integer value"
     Rajan: Apply the change to the function descriptions too.
   http://wiki.edg.com/pub/CFP/WebHome/augop_spec-20180311.pdf
   Looks good.
   http://wiki.edg.com/pub/CFP/WebHome/min-max_spec20180310.pdf
   Looks good.

  C2X integration:

  Activities (http://wiki.edg.com/pub/CFP/WebHome/in_flight-20180313.pdf):
   Obsolesce Decimal_dig will have a paper number soon.
   Working on process for defects still with Blaine and David K.
   *Fred: See where we are for inconsistent spec for infinities.

*Fred: See where we are for missing Annex F spec for new functions.

C Standard use of "Floating" vs "Floating-point":