CFP Teleconference Minutes
WG 14 N1904

2015/01/13, 12:00 EST / 9:00 PST:
 Attendees: Rajan, Jim, Mike, David, Marius, Ian

New agenda items:
  None.

Sticky action items:
  David: Part 5: Complete exception specification with the full syntax dealing with scope and sub-
    exceptions. Include a discussion document with reasons choices and alternatives. -
    Partially done (more of an outline. Sent on 2014/05/12). Keep open.
  David: Part 5: SUBSTITUTEXOR -> SUBSTITUTE_XOR. Pending issue resolution. - Leave
    open

Last meeting action items:
  ToDo: David: Check for UK call in numbers (or other countries) and check with Mike on access
    need. - Done.
   Not available.
  ToDo: Rajan/Fred: Find out what is happening with the LaTeX migration in terms of timing. -
    Done.
   No information on timing. May be 6 months to a year.
  ToDo: Rajan: Update liaison words as discussed in the meeting. - Done.
  ToDo: Part 5: Evaluation Formats: Jim: Should be "value of FLT_EVAL_METHOD". - Done.
  ToDo: Part 5: Evaluation Formats: Jim: "Use of other values of width" -> "Use of unsupported
    values of width" - Done.
  ToDo: Part 5: Value changing optimizations: Jim: Remove
    FENV_ALLOW_WIDER_INTERMEDIATE_RESULTS and say that the #pragma STDC
    FENV_FLT_EVAL_METHOD width takes care of it. - Done (resolutions in red, for
    reconfirmation today).

New action items:
  ToDo: Jim: Ask Fred if the next meeting date is good for him.
  ToDo: Jim: Check with David Keaton on where Part 2 is.
  ToDo: David: Write up a proposal for what the FENV_REPRODUCIBLE pragma means.
  ToDo: David: Write up a proposal for alternate exception handling.

Next Meeting:
  Proposed: February 17th (Tuesday) or 19th (Thursday), 2015, 12:00 EST, 9:00 PDT
  Future: Doodle polls - Seemed to work last time.
  Same teleconference number.

Discussion:
  Next WG14 meeting is April 13th - 17th, 2015 in Lysaker, Norway

  Part 1: Published.

  Part 2: Still waiting for edits from ISO for review.
   Date will need to be set in the conformance macro portion of the text. We will need to do the
    same for parts 3 and 4.

Part 3: Should be out or moving out for DTS ballot.

Part 4: Should be out or moving out for DTS ballot.

Likely to be some editorial changes needed when merging all the parts into C11.

Part 5:
  Email discussion regarding thread titled "part 5?":
    David: 1 is fine with him.
    Rajan: Agree with 1, but 3 may be the environment now.
    David: Doing the minimal ASAP and deferred exception handling would be worthwhile even
        if it was the only thing done. With regards to expression evaluation, limit it to reproducible
        results or warn if not. Makes it easy to conform without changing code generation (just
        adding diagnostics).
    Marius: Like part 2, exception handling is not popular or common so it should not put too
        much pressure on hardware design.
    Jim/David: Should not put much pressure on hardware (even none) right now.
    Marius: Do current processors satisfy the reproducible results?
    David: Current x86 with SSE2 and Power CPU's do seem to have a way of providing this.
        GPUs are different though.
    Jim: Should we go forward with what we have or do the scaled down version?
    Ian: Prefers the scaled down version. Pragmas are the most pragmatic.
    David: The scaled down version is the minimal needed by making explicit. The worst case is
        not different from existing jumps like goto, loops, etc.
    Mike: goto's should be avoided if possible. Better to have code blocks.
    Trying this would make it much more heavyweight than the minimal proposal from David.
    With regards to the environment: Agree implementers and WG14 may not be ready, but the
        environment to doing the parts and getting them passed is better right now. It would be
        encouraging to know there are implementers and users for this.
    Likely a university project would do something like this and then the commercial compilers
        would do it to keep up. GCC and Clang would be the ones.
    Positive encouragement from the user community would be very helpful.
    General consensus is to go ahead with a scaled back version with no new syntax.

  cfp5-notes-20150112.pdf:
    Issue 0: Proceed with work on part 5 avoiding new syntax (alternate exception handling).
    Issue 1: Evaluation format: A method is required. Evaluation to type is now required (note
        that it does not have to be the default).
    Issue 2: OK.
    Issue 3: OK.
    Issue 4: OK. Only difference (decimal vs binary) is the 5th rounding mode. Unlikely to mix
        binary and decimal in code. Even mixed together unlikely to need different allow
        pragmas.
    Issue 5: Agreed yes, need allow pragmas for fma synthesis and for operation-conversion
        synthesis.
    Confirmed that pragma to allow wider intermediates not needed (given that an
        FENV_EVAL_METHOD value of -1 is available).
    Issue 6: Agreed to rename ALLOW_FAST_SUBNORMALS to
        ALLOW_ZEROING_SUBNORMALS.
    Issue 7: Discussed by did not resolve whether to define redundant
        FENV_ALLOW_OPERATION_SYNTHESIS and maybe also obsolesce FP_CONTRACT.
        Still OPEN.
    Issue 8: General sentiment was to define an allow pragma for replacing divide with multiply

by reciprocal, but not to define an allow pragma for the others (which were thought to be more problematic). None of the Issue 8 optimizations are specifically mentioned in IEEE 754 as suitable for allowing. Still OPEN.

Issue 9: David to write up a proposal for what the pragma for reproducible results is to mean. Still OPEN.

Issue 10: Earlier discussed in the segment on what to do with part 5. Tentative agreement (though without Mike and Rajan still present) to move ahead with goto as the only form of alternate exception handling that changes control. David suggested that omitting the subexceptions and the substitute actions might be acceptable and needed simplifications. David to write up a proposal for the various forms of the pragma for alternate exception handling. Still OPEN.

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