C Floating Point Study Group Teleconference
2016-09-27
9 AM PDT / 12 PM EDT

Attendees: Rajan, Jim, Fred, Ian, Mike, Marius, David H.

New agenda items:
None.

Last meeting action items:
Jim: Check one of the files from the EDG backup for testing the off site backup. - Not done.
Jim: Update the proposal for Part 2 to make it more similar to Part 1’s proposal. - Done.
Jim: For all proposals: Change to “This proposal incorporates” as the starting. - Done.
Rajan: Proposal 1: Update the spreadsheet of part 1 features based on Marius’ note and send it out to the group for final review. - Done.
Rajan: Proposal 1: Change the prior art text that has "ex." to "Example:" since Ex. could mean excluding. - Done.
Rajan: Proposal 2: Add in prior art based off the spreadsheet of features. - Done.
Jim: Proposal 4b: Mention underflow as well (alongside the existing overflow). - Done.
Jim: Proposal 5a: Look at leaving out the types in the second paragraph. - Done.
Jim: Proposal 5d: Title: alternate expression handling -> alternate exception handling - Done.
Jim: Proposal 5d: Say "portable handling of exceptional cases". - Done.
Jim: Proposal 5d: Simplify the abstract by removing the detail after "Some actions control". - Done.
Jim: Proposal 5d: Say "The pragma allows the program to deal with exceptional cases without having to consider implementation details." - Done.
Jim: DDR7: Integrate the changes proposed for the usual arithmetic conversions into a combined document to make it easier to read/understand. - Done.
Jim: DDR?: Create a new DDR for the typo that Joseph just raised in reflector message 14358. - Done. DR#8.
Jim: Consult with Mike to discuss the preferred quantum exponent for hypot (in the TS), rsqrt, pow* (in the TS), etc. - Done.

New action items:
General: Need to look through our docs to see what is in C but not in IEEE 754.
All: Look through WG14 proposals and let Rajan and Jim know if there is anything that we need to bring up.
Jim: DDR9: Update type style.
Jim: DDR9: Update examples as per Fred's note.

Next Meeting:
October 25th, 2016, 12:00 EDT, 9:00 PDT
Same teleconference number.

Next WG14 meeting (Pittsburgh, 2016/10/17) had a September 19th mailing deadline.
Discussion:
IEEE 754 revision:
Converging.
Some drafting for comparisons left.
augmentedSum, augmentedProduct names.
Incorporated suggestions for preferred quantum exponents for transcendentals.
Note that we had decided to do the same if 754 did it (as a DR to Part 4). Can wait until settled in 754.
Fred: Rules do not allow adding new features through DR's.
We can talk to David Keaton on how to do this after.

C++ liaison:
No updates.

twoSum, twoProduct (now augmentedSum, augmentedProduct) for TS 18661 update:
The C committee responded to the C interface that we should return a struct with two members.
Wait to add until settled as discussed above.
Jim: acospi/asinpi missing, agreed that they are missing, but declined to add them.
All those functions are optional.
Should 754 add them?
David H: I would support adding them. Obvious oversight. Will add it to the IEEE 754 agenda.
We already have it in our TS.
Ian: Are there other functions that should be added? Example: Is there an atanpi function?
Jim: tanpi is not there since there are issues (sign of inf depends on direction of approach).
Mike: Anything else in C that is not in 754?
*General: Need to look through our docs to see what is in C but not in IEEE 754.

What should be proposed for the C standard:
Rajan will present the proposals.
N2078, N2079 are the WG docs.
*All: Look through WG14 proposals and let Rajan and Jim know if there is anything that we need to bring up.

DRs review (http://wiki.edg.com/pub/CFP/WebHome/DRs2-20160910.pdf):
DDR8: Typo that amounts to an interface change hence not editorial.

DDR9: Fred's comment regarding italics will need to be made.
Jim: The type style is not consistent throughout the document in general. Planning on doing it like the TS.
Fred: Example needs to be updated and that needs to be added in to this DDR.
Jim: The TR says there is a rounding on the type, and that is what the TS is based on.
This means that existing implementations would be incorrect.

Other:
None.
Rajan Bhakta
z/OS XL C/C++ Compiler Technical Architect
ISO C Standards Representative for Canada
C Compiler Development