

CFP Meeting

2026/08/26: 8:00 AM PDT/3:00 PM UTC

[Please submit proposed changes to these minutes to Jerome or to the group. Revision changes appear at the bottom.]

Attendees and introductions

Rajan Bhakta, Jerome Coonen, Damian McGuckin, Ariel Burton, Joshua Cranmer, Guy Davidson

Agenda

<https://cfp-wiki.esi.com.au/pub/CFP/WebHome/n3940.pdf>

Previous meeting notes

<https://cfp-wiki.esi.com.au/pub/CFP/WebHome/n3949.pdf> - 2026/07/22 Minutes

Study group logistics

Next meeting: 30 September 2026, 8:00 AM PDT/3:00 PM UTC

Note: The meeting Zoom link may change in the coming month. Expect ample notice if and when it does.

C documents

The latest C2Y draft is N3886 2026/05/24: <https://www.open-std.org/jtc1/sc22/wg14/www/docs/n3886.pdf>

C23 has been published ISO/IEC 9899, available for purchase. <https://www.iso.org/standard/82075.html>

IEEE 754 update

Damian: There is continued discussion of rounding and details of the language in the standard. A new topic is the definition of blocks, in software context, and how they tie to flags and modes.

WG14 update

Rajan: Discusses the meeting in Ottawa last week, and his email 3986 with details

N3779, Thomas, Annex F floating-point environment updates.

N3842, Thomas, Standard pragmas and headers.

N3843, Thomas, Conflicting requirements for `double_t` – Clang hadn't implemented the problematical definition, so it's moot there; GCC will have to change a header, but no difficulty is expected.

N3896, Bhakta, Range bounds for complex math functions.

All papers passed with 0 opposition and a scattering of abstentions.

WG14 took time to recognize the decades-long efforts of Jim Thomas, who left a significant stamp on CFP. Just one measure of Jim's contribution was his tally of the largest number of papers, both proposed to and accepted by WG14.

C++ liaison

Guy: Continues to consider bringing our revised Annex F into C++, though his current efforts are toward a paper to CFP.

TS-4 and TS-5 revisions

None

News

None

Carryover action items from last meeting

Fred: Add to open items list the issue in 3928 from Trevor regarding the awkward language in H.4.1 regarding whether or not functions need to be supported, based on what types are supported.

Rajan: Fred is asea and without Internet for a spell. Carry over.

Group: Look at the notion of “range of representable values”. Can we tighten up this usage?

Carry over, with interest from Damian and Jerome to close this.

Action items from last meeting

Fred: Submit proposal re. quantum exponents of fromfp functions to WG14. Add a reference to the current C2Y draft and note that it’s a technical change.

Done

Fred: Prepare the proposal re. nexttoward/nextafter and send to CFP for review.

Done

Damian: Write a proposal to add DEC_RADIX, with parallel structure to FLT_RADIX, then simplify the accompanying language to align with the current binary, octal, hex, etc. language for FLT_RADIX.

Open

Damian: Revise the Annex F Introduction paper, for further review. Try to streamline the SNAN part, with group input.

Done

Damian: Update Annex F special cases paper for review.

Done

Group: Review the changes to the two Annex F papers.

Open

Rajan: Check that n3364 alternative 1 has been put into the latest C2Y draft, per WG14 decision.

Done

.

Fred: Apply email 3999 suggestions specifically to fabs, copysign, fabs, printf, to avoid triggering SNANs.

Done

Damian: Put the updated Issues List in its own section on the wiki.

Done

Discussion of issues

- **C++ Infinity:** [\[cfp-interest 4003\] C++ and how it views an infinity](#) *Damian McGuckin*
Annex F is at peace with INF. Closed.
- **Propose improved wording in H.11.4.1**
Rajan: Work was completed and approved but not submitted. Action.
- **[cfp-interest 3955] action item -- nextafter and nexttoward** - *Jerome Coonen*
Rajan: In email 3963, Fred's proposal is ready for submission. Action.
- **[cfp-interest 3956] action item -- propose improved wording in H.11.4.1** - *Jerome Coonen*
Rajan: Submit with minor fix to extra space character. Action.
- **[cfp-interest 3960] What do existing fromfp functions do for -0.0 result?** - *Fred Tydeman*
Jerome: This refers to proposal N3877, whose purpose is to specify the sign of a zero result. Fred & Jim disagree with the proposal, so Fred has requested input from implementations.
Rajan: Asks Ariel to check the IBM compilers. Action.
- **[cfp-interest 3962] Quantum of fromfp** - *Fred Tydeman - For reference (completed item)*
Rajan: Pending doc number, but ready to submit. Carry over.
- **[cfp-interest 3966] SNaN not raise invalid** - *Fred Tydeman*
Damian: Working with Fred on what's needed. Carry over.
- **[cfp-interest 3967] Annex F - Introduction + SpecialCases** - *Damian McGuckin*
Damian: There's an issue with wording around correct rounding. Hopes to have closure at the September meeting. Carry over.
- **[cfp-interest 3969] Re: binary vs decimal sNaN initialization** - *Rajan Bhakta*
Rajan: Fred has covered the decimal side in email 3978.
Rajan: Carry over to when Fred can attend, with no objections to the proposed change.
- **[cfp-interest 3965] Model numbers and double-double** - *Fred Tydeman*
Carry over to when Fred can attend, with no objections from the group.
- **[cfp-interest 3964] nextafter and zero** - *Fred Tydeman*
Rajan & group: Discuss Fred's email 3964 and proposal, but opt to solicit written input and defer discussion. Action.

- **[cfp-interest 3975] SNaN and printf(), scanf(), strtod(), nan()...** - *Fred Tydeman*
Rajan & group: Discusses the rules for passing arguments (copy vs. convert) and returning values. There are complications, if the point of an SNaN is to provide system-dependent functionality. Action to invite responses from the group.
- **[cfp-interest 3980] Correct Rounding Words for Elementary Mathematical Functions in C2Y** - *Damian McGuckin*
Damian: Discussion of Paul's solicited comments on the revised wording. Closed.
- **[cfp-interest 3981] $x - 2^{**k}$ is exact for $2^{**k} \leq x \leq 2^{**k+n}$ for small $n > 1$** - *Damian McGuckin*
Damian: Obvious, closed.
- **[cfp-interest 3983] signgam** - *Paul Zimmermann*
Rajan & group: Request response to Paul that this is a POSIX issue, not a 754 issue. Action. Bonus pronunciation note: "sine-gam".
- **[cfp-interest 3987] CR functions in Intel Math Library** - *Paul Zimmermann*
Noted, closed.

Other issues

Rajan: Issues list. Good to deal with issues brought up by WG14. One example is exp() near the overflow threshold. And note that Sept 30 meeting is a deadline for getting items out to the Nov WG14 meeting.

Adjournment

9:50 AM PDT

Action items to be carried over

Fred: Add to open items list the issue in 3928 from Trevor regarding the awkward language in H.4.1 regarding whether or not functions need to be supported, based on what types are supported.

Group: Look at the notion of "range of representable values". Can we tighten up this usage?

New action items

Jerome & Rajan: Fix and submit proposal for improved wording in H.11.4.1.

Fred: Submit the nextafter/nexttoward proposal in email 3963.

Ariel: Investigate the sign of fromfp(-0.0) across IBM compilers. Group invited to check other systems.

Fred & group: With input from the group, expand rationale and discussion of nextafter and zero cases

Group: Interested members submit input on Fred's email 3964 re. nextafter() behavior around zero.

Group: Submit thoughts about how SNaNs ought to behave in the printf/scanf functions.

Jerome & Rajan: Send email to Paul (who is probably reading these minutes 8^) re. signgam as a POSIX issue.

Carryover discussion items

None

Signoff

Respectfully submitted.

-Jerome Coonen