

IEEE Task P854

Minutes, 20 July 1983

The radix-free floating-point working group of the Microprocessor Standards subcommittee of the IEEE Computer Society met from 9:30 a.m. to 5:15 p.m. at Apple Computer in Cupertino. Twenty people were in attendance, of whom nine were eligible to vote at the meeting.

Minutes from the 7 June meeting in Denver were approved. subject to a typographical error pointed out by Kahan (corrected prior to formal distribution).

A subsequent meeting of P854 was not scheduled at this time, pending the outcome of procedural issues raised at the meeting.

Publication Policy. Mike Smolin, the Chairman of the Microprocessor Standards Committee of the IEEE Computer Society, was our guest for the first two hours and led a discussion on the IEEE's attitudes towards publication of draft standards. The policy has changed since the publication of P754 Draft 8.0, and the change was attributed to Herb Hecht. There are arguments both for and against the publication of draft standards. The principal argument against publication is that a draft which is published may become a de facto standard. The principal argument for publication is that the draft(s) which aren't published may become (multiple) de facto standards anyway.

There is a new alternative: a "Trial Use Standard", which has a sunset provision (12-24 months, typically) and must be promulgated with the appropriate caveats.

The current operational procedure is due to a proposal by Roy Russo. The working group chairman must request the Microprocessor Standards Committee for permission to publish a draft. The MSC will recommend for or against the publication, giving reasons for a rejection. If the recommendation is to publish, the draft standard is sent to Hecht and Dennis Allison for decision. If these two reach a unanimous conclusion, that's it. If they split, Russo decides. If there is no decision within 30 days, publication is approved by default.

Because the IEEE is now ANSI approved (since 1982) there are new procedures and layers of approval as the large-body conservatism phenomenon creeps down the organizational hierarchy.

Smolin's advice was to go for a "Trial Use Standard" as being an easier route.

Side issues: The IEEE publications should be given first refusal. The copyright should be held by IEEE. If an article about the draft standard is written by a member of the group, it should be cleared with the chairman. Liberal quotations from the draft are acceptable--indeed, strongly encouraged--but the article should not have the physical appearance of a draft standard. Negative comments and committee responses should be accumulated and attached to the final draft submitted for approval. It is not necessary to publish these. The sponsoring chairman (Allison in this case) has the authority to form a review board for any purpose within the 30-day period allowed for publication decision.

MSC meetings are held on the second Thursday of odd-numbered months; hence September 8 and November 10 are the next meetings. Drafts should be provided to MSC members in advance of the meeting in which the request is to be discussed, and members of the standards group should attend the meeting to make a short presentation and answer any questions.

He suggested that individuals concerned should write to Allison to request being on the balloting group, with copies to Hecht, Smolin, and the appropriate chairman (Stevenson / Cody).

Changes to Draft 0.8a (rev). Many typographical errors had been found by David Gay subsequent to the Denver meeting and reported to Cody, who reviewed them with the group. A vote of thanks to David received unanimous acclamation. The details are not recorded here.

Section 5.6 remains the most troublesome part. The inequalities leading to Tables 1 and 2 were again reworked as bugs were found. This permitted the form of the tables to be simplified somewhat. The language surrounding the virtual alteration of digits beyond the M'th was discussed yet again; no satisfactory wording emerged and after a while a motion to table the discussion indefinitely passed 4-2. During a quiet spell, Cody redrafted the wording which was then approved with modest enthusiasm.

During the course of this discussion the relationship

$$p \text{ se}\tilde{O} \geq p \text{ s}\tilde{O} + 7$$

came once again under fire, and the decision was made to strengthen the requirement to

$$p \text{ se}\tilde{O} \geq p \text{ s}\tilde{O} + \log 2 \tilde{O} \tilde{O}' E \max \tilde{O} - E \min \tilde{O} \tilde{O}_i$$

which always subsumes the previous relation, given the other constraints among p and the exponent range. Section 3.3 is so modified.

Palmer moved to renumber the draft 1.0 and submit to a mail ballot petitioning the IEEE to publish as a draft standard. Ris seconded and the motion carried unanimously.

Programming Language Issues. Kahan reviewed the principal issues: (1) precision of subexpressions--Fortran fundamentalist vs. widest available vs. calculator style vs. widest need; (2) Compile-time bindings of decimal constants and constant subexpressions; (3) Names for infinities, NaNs, modes, flags; (4) Flag handling--swap versus set/read; (5) Mode handling--scoped versus set/read; (6) Handling of max, min, 0**0, ...

Frederic N. Ris

7 December 1983