

Minutes of the Meeting of the IEEE Standards Coordinating Committee 14,

24 October 2000
IEEE USA Offices
1828 L Street, NW, Suite 1202
Washington, DC 20005

The meeting was called to order at 9:45 a.m. by Bruce Barrow, chair.

- Gordon Aubrecht, The Ohio State University, secretary; American Association of Physics Teachers liaison; aubrecht.1@osu.edu
- Bruce Barrow, Defense Information Systems Agency (retired), chair; b.barrow@ieee.org
- James Frysinger, College of Charleston, frysingerj@cofc.edu, j.frysinger@ieee.org, metric@knology.net
- James McCracken, NIST, jimmc@nist.gov
- Terry Scott, AIP (retired), jscott@viconet.com
- Ralph Showers, University of Pennsylvania, showers@ee.upenn.edu
- Alan Zuckerwar, NASA Langley, a.j.zuckerwar@larc.nasa.gov

In a premeeting conversation, we discussed legislation to revise packaging labeling. The next Congress is expected to revise the fair practices in labeling legislation (FPLA was last revised in 1992). The last revision led to ersatz numbers when approximate customary units were replaced by 3-digit SI units. Backsliding highway departments were also discussed briefly.

1. Agenda:

The tentative agenda was accepted. (Attachment A)

2. Minutes:

Minutes of the October 1999 meeting were discussed briefly. They were approved unanimously.

3. Report of the Chairman:

The chair is very busy with the review of proposed IEEE standards, which now are required to use SI exclusively. He would like support on other SCC14 activities. The secretary agreed to get the membership list in good shape, including getting e-mail addresses (for all who do have email). Jim Frysinger is to work as electronics guru. It is expected that a great deal of our work in the coming year will be carried on electronically. **Action: Aubrecht, Frysinger**
Barrow is secretary of the IEEE/ASTM Committee for Maintaining IEEE/ASTM Standard SI 10. There are five IEEE voting members (Showers, Wildi,

Langenstein, Scott, Barrow); Taylor and Frysinger are IEEE nonvoting members. Ken Lewis of ASTM is chair of the committee (ASTM voting members Bushnell, Gat, French, Parsons, Lewis); Nancy Trahey from NIST is an ASTM nonvoting member. SCC14 will ballot to approve any recommended revision. Current status is reported below.

Barrow called attention to our Operating Procedures, which need some updating and are discussed below under New Business. A number of drafts should be balloted during the coming year.

4. Report of the secretary

The secretary has promised that our Proposed Standard on definitions will be completed by him, checked with Art McCoubrey, and balloted expeditiously. See Subcommittee 14.2, below.

The education initiative set up last year has not been successful so far. There was extensive discussion. Jim McCracken suggested that Lorelle Young can mobilize Certified Metric Specialist (CMS) people in USMA to do this. IEEE may be able to reach out and be a consolidator of the metric committees of other voluntary standards organizations. Jim also has a list of teachers who have requested information. We (IEEE and the NIST Metric Program Office) could write to them. We could have an education web page on the Committee's IEEE home.

Jim McCracken will work with ASTM. We need somehow to remind the IEEE education board that this is within their purview.

Gordon suggested that we send out an email about education to all members. We will ask IEEE to supply us an open list. Jim Frysinger will check on this. **Action: McCracken to coordinate**

5. Reports of subcommittees

SCC 14.1 Maintenance of SI10

No proposed changes are earthshaking, although there are a few minor departures from the presentation used by the BIPM. There is a new SI derived unit with a special name, the katal (symbol, kat), which means a mole per second (kat = mol/s).

Terry Scott presented a copy of draft 2 of proposed SI 10.

The committee looked at all the changes suggested and made to date. There was extensive discussion of the details. It was agreed that using an alphabetical list as primary in the conversion tables instead of completely duplicating tables was vastly preferred to the current layout, and Scott was encouraged to present his suggestion to the SI 10 committee. Magnetomotive force was suggested for addition to Table A.5.

The debye, unit for electric dipole moment, was discussed. Moved and voted that it be added to the "do not use" table in SI 10.

The 1992 revision of SI 10 will have to be passed through SCC14 during 2001 if it is to remain on schedule. The joint IEEE/ASTM committee plans to finalize its work at its May 2001 meeting. SCC14 members will be informed of status both before and after that meeting. **Action: Barrow**

SCC 14.2 Definitions

As noted above in the Secretary's report, a draft will be balloted soon. A PAR is required. After discussion, it was agreed that the title of the proposed standard should be (subject to McCoubrey's judgement) "Definitions of physical quantities

and units and related terms." It was understood that all the named SI units would be included, and that "related terms" include words such as base, derived, International System, CGPM, etc., which are neither quantities nor units. It was also agreed that ISO Standard 31 would be the principal guide, but that the scope would be limited to areas of concern to a large number of IEEE members. Thus the quantities and units of acoustics would be included, but the more esoteric areas of chemistry and physics that also appear in ISO 31 would not. It is left to the discretion of McCoubrey and the Secretary to interpret the word "esoteric" as it would apply to the interests of IEEE members. **Action: Aubrecht, McCoubrey** IEEE compiles all standard definitions that have been used in any IEEE committees in what is now IEEE Std 100, the "IEEE Dictionary." It is therefore more a compilation than a dictionary, and it contains obsolete definitions of units and other terms of interest to SCC14. Our standard definitions, when approved, will go into the dictionary at its next revision.

SCC 14.3 Unit Symbols

Revision of Std 260.1, "Letter Symbols for Units". Jim Frysinger, chair of SCC14.3, presented P260.1/D4. The following points were discussed:

Section 4.4 contains, as an example of optional usage in text, "35-mm film," and it was pointed out that some authorities object to the use of a hyphen with unit symbols. The consensus of the committee was that this usage should remain as an option.

The ampere turn (symbol A) was eliminated from the table. Ron Goldfarb will be consulted.

The unit symbol for astronomical unit will be checked with Barry Taylor. There are various symbols used in ISO and BIPM. We are looking for consistency.

The bbl/d is eliminated.

Add calorie (nutrition), and use the SI definition. The minute of arc has type problems in Table 3 and in 6.1 d.

The millipascal second note was eliminated. "Replaces the centipoise" is added. In the square millimeter per second, we eliminate the note and add "Replaces the centistoke."

The reference to the *Federal Register* for the liter should be updated.

The appellation cgs should be lowercase. For phot, say The cgs unit ...

The definition of year generated controversy. We decided that it and the month would be designated in the Notes column as "Not uniquely defined."

Annex A. We have eliminated the note.

We discussed leaving the Annex B as is or interleaving with the table. Many units are listed in both places. The "informatics" section needs to be referred to in the text. There were disagreements. There was a vote of 4 to 3 in favor of maintaining Annex B as a separate section. We could list "bit" as the symbol as the IEC symbol for the bit in the Annex. This annex will be informative.

The katal must be added.

Jim will prepare Draft 5, incorporating the above recommendations. Members of SCC14 will be invited to join the balloting group; formal approval of the balloting

group by IEEE SA will be obtained, and a ballot of Draft 5 will be conducted.

Action: Frysinger

Status of "Proposed Standard Prefixes for Binary Multiples". Barrow, who is leading this working group, promised to get it moving again. A new draft should soon be ready for formal balloting. **Action: Barrow**

SCC 14.4 Quantity Symbols

Nothing new.

SCC 14.5 Acoustics

Stan Ehrlich, chair of the subcommittee, has requested a reaffirmation of 260.4 (1996) in 2001. No PAR is needed, but a balloting group needs to be formed.

Action: Aubrecht

SCC 14.6 Mathematical Symbols

Chairman Esperti has prepared a new electronic version as a postscript file rather than pdf. The current pdf file used by IEEE is not satisfactory. We need to learn how the postscript file can be used by IEEE (if it can). **Action: Barrow**

SCC 14.Int International

Two balloting decisions have been announced by the ISO/TC12 Secretariat since this committee last met.

1) In February 2000 a ballot was circulated regarding the form of the decimal marker. The TC12 Secretariat took pains to point out that "the choice of decimal sign to be used in International Standards is not to be decided directly by ISO/TC12 or IEC/TC25. This is a question for the ISO Technical Management Board and the IEC Committee of Action..." Nevertheless opinions were sought on a proposal "to give the comma on the line and the point on the line as two options on equal footing as symbol for the decimal sign."

In June the results of the ballot were announced: Five P-members ["participating members"] agreed with the proposal (Belarus, Sweden, Switzerland, UK, USA) and they were joined by two O-members ["observers"], Canada and New Zealand. The IUPAC liaison group also agreed. Eight P-members did not agree (Australia, Austria, Belgium, Colombia, Czech Republic, Finland, France, Germany), and they were joined by O-member Ecuador.

The question rests for the time being.

2) The first part of the old [1992] ISO 31 standard and parts of the IEC 27 series of standards that are to be replaced by a single harmonized standard (to be called "ISO/IEC 80000") was circulated as a committee draft in late 1999. This part is to replace 31-7, the section on acoustics, and it will become part 8 of the new 80000 harmonized standard.

For this ballot I augmented the usual ANSI TAG to ISO/TC12 with a group of acousticians selected by the Standards Secretariat of the Acoustical Society of America. The combined opinions of these two groups were strongly negative. My report to ANSI (for re-transmittal to the ISO/TC12 Secretariat) was the longest and most detailed I have written about any draft.

The TC12 Secretariat announced the result of the ballot in September 2000. Twelve P-members approved the committee draft, eight disapproved it. (Two other P-members commented but did not vote; one first approved and then abstained; and two O-members disapproved. The Secretary of ISO/TC12, Anders Thor, added the following comment: "Even if there is a majority for approval there is no consensus

yet. The working group ISO/TC12/WG 3, Acoustics, will continue its work together with representatives from ISO/TC43, Acoustics, to work out a new draft."

Barrow reported that Ambler Thompson, of NIST, will be replacing Barry Taylor as chair of the Technical Advisory Group (to the U.S. National Committee) for IEC TC25, the IEC committee of most interest to us. Ambler has joined SCC14, but both he and Barry are at the moment involved in an IEC activity and could not attend today

SCC 14-Rev Review

Barrow has been reviewing all proposed IEEE standards to ensure that they satisfy the IEEE-SA policy that now requires, since January 1, 2000, the use of SI units exclusively (with very limited exceptions). More than 100 proposed standards have passed through the system during the last year, and approximately 30% of them required some comments regarding metrication or symbols. In almost all cases the comments made on behalf of SCC14 have been well received, and the message seems to be getting across that IEEE is serious about metricating its standards.

SCC 14-Leg Legislative

To be provided -- Action: Lorelle Young

6. Other old business

None.

7. New business

Operating Procedures. The Standards Board has approved model operating procedures, and we are requested to bring ours into line. This will be the subject of a committee ballot within the next months. **Action: Frysinger**

Review of electronic versions of our standards. In most cases IEEE no longer inventories paper copies of its standards. Instead, electronic versions are stored. Many orders are filled via transmission over the net; in other cases, the stored electronic version is used by IEEE to make a paper copy to be mailed. This creates many special problems for SCC14 because we use so many unusual letter symbols and mathematical symbols in our standards (and because we are so precise in our requirements). Jim McCracken has delivered copies of all of our current standards, retrieved electronically, and they will be distributed to individual SCC14 members for review. Volunteers, especially those with very critical editorial perception, are requested to come forward. **Action: Barrow**

8. Date of next meeting.

The date for next year (probably in October) was left undetermined. We discussed having the meeting on Friday. This is inconvenient for many members. We discussed the possibility of meeting on Saturday. This would involve getting a location other than our traditional meeting room at IEEE-USA. Tuesday remains in play. We will continue the discussion via e-mail.

Action: Barrow, initiate discussion after e-mail list has been updated.

Note, post-meeting. The chair has learned that IEEE may be willing and able to provide telephone conferencing for meetings held at its Washington facility. Details will be included in the discussion.

We adjourned at about 3:35 p.m.

Gordon Aubrecht, Secretary

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