SDCom MINUTES
Hyatt Regency
Tampa, FL
November 15, 2000

1 Call to Order — Berger
2 Approval of Agenda and Registration of Attendance — Berger

Members present: Berger, Denny, Heirman, Hoolihan, Sweeney, Drozd, Joffe, Butler.

Members absent: Kraemer, Sato, Ritenour, Showers, Bronaugh, Traver

Visitors: Don Bush, Keith Hardin, Ghery Pettit, Doug Smith, Warren Kesselman

3 Review and Approval of Minutes of Previous Meeting — Denny

The minutes of the Annual Meeting in Washington DC on August 21 and 23 were approved as distributed.

4 Emerging Technologies & Study Topics — Berger
4.1 Band Crowding Effects — Hardin

Dr. Keith Hardin of Lexmark International gave an overview of Spread Spectrum Clock Generators and the implication of their emissions to potential receptors. Emphasis was placed on potential effects to both analog and digital TV receivers. Tests showed no greater interference to analog TV. Expect digital TV to show less. Copies of Keith's viewgraphs can be requested from *khardin@lexmark.com*.

SDCom plans to have special presentations of other similar technical topics for the purpose of keeping abreast of technology and to identify standards opportunities and needs. Future presenters will be requested to identify any standards related issues pertinent to their subject/topic.

4.2 Report from Technology Tracking Sub-Committee — Hoolihan

Hoolihan plans to attend the IEEE "New Technologies Directions Workshop" in January at Rutgers University. Nanotechnology, i.e., systems on a chip, is an example of an emerging technology.

4.3 Site Survey Std for RF Compatibility — Joffe

IEEE Std. 473 outlines procedures and information for conducting EM site surveys, for several purposes, including HERP and RF Compatibility. However, the standard is outdated (it was originally adopted in 1981 and reaffirmed in 1990 and 1995 with no

modifications). It is recommended that the Standard be revised to broaden the scope, update it's instrumentation requirements, and to accommodate additional types of sites.

The following recommendations are made:

a) Scope

Currently, the standard's scope covers HERP and EM environment for electronic equipment, but little attention is given to antenna-to-antenna compatibility. As antenna sites become more and more crowded, the need for RF compatibility becomes more significant. The techniques currently in the Standard address only to a limited extent the RF Compatibility issue.

b) Test Methods and Equipment

The current Standard test techniques are based on test equipment available at the time of initial adoption. Thus, the Standard should be modified to incorporate the features of state-of-the-art instruments, including analysis capabilities, in the time and frequency domain.

a) Requirements

The current Standard covers only aspects of Radiated Interference (RS03) and HERP, but not site-specific compatibility. In particular, the following topics need to be addressed:

- use of directional antennas for spatial resolution of interference
- use of both horizontal and vertical polarization measurements or circular polarization
- calibration of measurement antennas
- Use of monopole antennas (in addition to loop antennas) for lower frequency measurements (In the HF band)
- Warnings and procedures for performing measurements in high ambient environments, and safety precautions for same
- Definition of methods for selecting sweep rates, considering time domain characteristics of the RF sources
- Methodology for full-system calibration
- Field strength meter vs. spectrum analyzer measurements

In addition, an appendix specifying the analysis of time domain characteristics should be incorporated.

In general, the Revision could be conducted in several phases:

a) Phase 1: Re-definition of scope, and investigating affected sections (listing them and the necessary changes)
b) Phase 2: Implementing the changes resulting from Phase 1
c) Phase 3: Preparation of Analysis Appendix

A.I. Joffe to prepare PAR to update and revise Std-473.

4.4 EMC Modeling Drozd

There is a need for a process for validating the results provided by the various competing numerical modeling codes. A possible approach would be a set of well-defined canonical models that would be analyzed by competing codes and the results compared. This effort was discussed in TC 9 meeting in Washington DC in August and they indicated willingness to sponsor this effort.

4.5 Study of Band Crowding Effects Berger

Potential interference exists between IEEE 802.11 equipment with Blue Tooth equipment. As a larger issue, the potential interaction between all types of spread spectrum commercial equipment needs to be addressed. The presentation by Keith Hardin was the first step in furthering understanding of this issue. Other presentations related to this topic will be scheduled at later meetings of SDCom.

5 Status of Current Standards and PARs Berger

5.1 Std 139 Current

5.2 Std 140 Planned efforts to reaffirm this standard ran aground because of changes to the IEEE Standards Board Bylaws regarding the relative distribution of the balloting committees between producers, users and general interest (PUG). As a result, each member of SDCom has been requested to expand their relationship to each IEEE EMCS standard to accommodate additional categories. The Secretary plans to keep these current as members change job functions so as to minimize delays in forming balloting groups when voting actions are required. (A copy of the PUG matrix is attached to this report.)

5.3 Std 187 Traver gave a status report. WG meeting held during the Symposium.

5.4 Std 213 This standard will be dropped in 2003. Essential conducted requirements will be incorporated into Std-187.

5.5 Std 299 *See 5.2 above.* The user community has expressed considerable interest in extending the scope of 299 to accommodate very small (down to 1 cm in dimension) shields. This topic was referred to Svetanoff for consideration under the new version of Std-299. The next meeting of this working group is scheduled to be a teleconference on 30 November or 1 December 2000.

5.6 Std 376 Current

5.7 Std 377 Current until 2002

5.8 Std 473 Current to 2002. PAR to revise 473 as discussed in *4.3* above will be prepared and submitted

5.9 Std 475 Current

5.10 Std 1128 Current

5.11 Std 1140 Current

5.12 Std 1302 Current

5.13 Std 1309 Will need to be reaffirmed or revised in 2001. **A.I. Kraemer recommend course of action for reaffirming or revising 1309.**

5.14 P1530 A working group meeting was held on August 23 in Washington DC. Sixteen members were in attendance. Though the slow progress to date is recognized, the attendees concluded that they were close to being able to complete the document. Specific plans were laid for completing the recommended practice and writing assignments were made. **A.I. Hoeft assess status relative to previously determined completion date and request time extension from IEEE NESCOM if required.**

5.15 P1560 The Working Group, chaired by Kermit Phipps, held a meeting in Washington DC on August 20. Ten members of the WG were present. The chair reports that since the meeting in August a control filter has been sent to the group for evaluating ANSI C63.13 for transverse and common mode test for possible consideration of one of the included test methods. Issues regarding voting by members has been resolved. An outline of the draft of the document is expected to be voted on by December 31. The first draft of the standard is expected by March 2001. In the interim, a skeleton draft will be prepared to be used as a guide by the Working Group.

6 SDCom Administration

6.1 Status of EMCS Standards Web Site Drozd

The web page is currently operational. A link has been established to allow the web site to be accessed from the current EMCS page.

6.2 Position Statements to External Organizations Drozd

Andy circulated proposed draft of additions to P&P for handling within SDCom. (These were previously distributed to SDCom members via electronic mail.) **A.I. SDCom members review the suggested modifications to the P&P and forward any corrections or additions to Andy directly.**

New Business

7 New Business Heirman

Standards Association (SA) Board of Governors meeting: There is a proposed MOU between IEEE and IEC. This is expected to enhance communication and cooperation at the International level. It facilitates sharing of documents and clarifies positions on coordination between the two bodies.

New tools are being posted regularly on IEEE web site. Working Groups are encouraged to use as many as possible.

EMC membership in the Standards Association grew from 153 to 200 the past year. The total membership in Society stayed level from 1999 to 2000. SA total membership has grown to greater than 6300 members. Expect to reach 7000 by year's end.

8 Old Action Items Denny

1. Hugh Denny: Supply list of references on spread spectrum EMI implications, i.e., dithered L.O.'s; effects on GPS systems; etc. The following reference is provided: "Spread Spectrum EMI Measurement Techniques and Instrumentation," by E.E. Donaldson, Final on Contract DAAB07-85-C-K545, Georgia Tech Research Institute, March 29, 1986. Now closed.
2. Elya Joffe suggest revisions to Std-473: Completed.
3. Ed Bronaugh: Evaluate status of Std-140 and make recommendations to SDCom on updates/revisions. Open
4. Dale Svetanoff: Coordinate with McFadden extension of Std-299 to cover small (< 30 cm) shields. Closed.

9 Next Meeting – The next meeting of the SDCom is tentatively planned to be held at Hilton Head, SC on 13 March 2001.

10 Adjournment - The meeting adjourned at 3:45 pm.

Respectfully submitted:

Hugh W. Denny, Secretary
22 November 2000

IEEE EMC STANDARDS BALLOTING CATEGORIES

IEEE-STD-	Berger	Bronaugh	Butler	Denny	Drozd	Heirman	Hoolihan	Joffe	Kraemer	Ritenour	Sato
139-1988											
140-1990											
187-1990											
213-1987											
299-1991											
376-1975											
377-1980											
473-1985											
475-2000											
1128-1998											
1140-1994											
1302-1998											
1309-1996											

P – Producer. Involved in the design and/or production of the equipment or system to which the standard

U – User. End user of the equipment or system to which the standard applies.

T – Tester. Uses or applies the standard in laboratory or field tests of equipment or systems for the evalua verification of compliance with regulations.

A – Academic. Performs research on the development of techniques and practices incorporated in the sta on the application and implementation of the standard.

D – Developer. Develops components, materials, or techniques for EMI control in equipment and system applies.

G – General Interest. Other than the above, professionally supports the development, application, and inte standards.