



Busy Time for Standards Meetings!

Don Heirman, Associate Editor

The standards committee activities at this year's EMC symposium in Portland were again in high gear with close to a dozen committee/project meetings and workshops scheduled. We devote my column then to the major standards activity for the symposium week in August 2006. Also included is an update from the CISPR meetings in Sweden in September 2006.

Understanding ANSI C63.5 Antenna Calibrations - Workshop

Thirty people attended the latest in the series of ANSI Accredited Standards Committee C63™ workshops held in conjunction with the annual EMC-S symposium. This year, the focus was on the new ANSI C63.5 antenna calibration standard released in the spring. The attendees were from near and far (Japan and Malaysia) and represented those who perform antenna calibrations as well as those that assess the competency of their work. The presenters were Mike Windler of UL, Dennis Camell of NIST and Don Heirman of Don HEIRMAN Consultants. Janet O'Neil served as the registrar.

With antennas in hand, the attendees trudged into a semi-anechoic chamber at Northwest EMC who hosted the workshop to measure antenna factors using the Standard Site Method. This SSM is highlighted in ANSI C63.5. The common name for this technique is called the "three antenna method." So, after several hours of reviewing the details of antenna calibrations in the standard, the real challenge came in the test chamber where the antennas were set up as in the standard and then the various normalized site attenuation measurements were made to show how the calibration is performed. While these measurements were being made, a parallel workshop session on the calibration of horn antennas was in progress as the attendees were split up into two groups. The latter group conducted demonstrations of

the beam width of typical horn antennas, which is critical to their use.

At the end of the workshop, all had an opportunity to ask the instructors questions ranging from the time needed to perform antenna calibrations to why certain horn antennas had more complex patterns than first thought to what are the uncertainties in the measurements.

The photos included with this article show various scenes from the workshop including students pouring over the workshop notes, instructors presenting the material, antennas being set up in the semi-anechoic chamber for calibration, the presenters and registrar, and even the time out for lunch at a nearby restaurant.

By the way, due to the excellent turnout for this workshop, it will be given again preceding next year's EMC symposium in Hawaii. The date is 6 July 2007, which is a Friday. So please mark that date now so that you don't miss out as we may have to limit the size of the attendance due to the facilities that might be available in Honolulu. See you next year!

Standards Development Committee (SDCom) - Meeting

Stephen Berger chairs the SDCom. This committee met twice during the symposium week. But there were many standards project meetings as well. Here is a glimpse of the week's schedule of standards committee activity:

- Sunday: Std 299 (Shielding effectiveness)
- Monday: SDCom Part 1
- Std 1309 (Probe calibration)
- SACCom/RAC luncheon
- P1900.2 (Interference/Coexistence SDR)
- P1597 (Computational EM)



Don Heirman of Don HEIRMAN Consultants (rear) presides over a "full house" at the ANSI C63.5 workshop held in Portland, Oregon prior to the 2006 IEEE International Symposium on EMC.



Mike Windler of UL lectures to the workshop class on "Biconical Dipole Correction Factors."

PHOTOS BY RICHARD GEORGIAN



Lunch for the workshop participants was held off site on the lawn of McMenamins Imbrie Hall in Hillsboro, Oregon. Shown clockwise from lower left are Janet O'Neil of ETS-Lindgren, Jerry Page of Northwest EMC, Steve Flyte of Artex Aircraft Supplies, Mits Samoto of Samoto & Associates, and Dean Ghizzone of Northwest EMC.

Tuesday:	P1900.2 (Interference/coexistence SDO) Std 1302 (RF Gasket characterization) P1642/3 (Intentional EMI)
Wednesday:	SDCom Part 2 P1642/3 (Intentional EMI) Std 299 (Shielding effectiveness)
Thursday:	P1688 (Module EMI testing)
Friday:	Std 299 (Shielding effectiveness)

As shown above, the Standards Development Committee (SDCom) meeting was held in two parts to accommodate all the reviews of the status of existing standards being developed by the committee and its project leaders. At the SDCom meetings, progress on several standards was discussed. The topics covered and the abbreviated progress is shown after the subject of the standard in the following list:

- EM site survey (Std. 473): New chair is being sought; the draft is 80 percent or so completed
- RF absorber evaluation (Std. 1128): Reaffirmation completed
- VDT emissions (Std. 1140): Reaffirmation completed
- Gasket characterization (Std. 1302): To be balloted in September 2006
- Probe calibration (Std. 1309 amendment): 2007 report due
- RF filter performance (P1560): Current
- Computational EM (P1597.1): Ballot by October 2006
- Intentional EMI to computers (1642): Ballot by December 2006
- Software Defined Radio Conform (P1900.2): Awaiting invitation to ballot to establish balloting group
- Line replaceable module (P1688): Ready first draft
- TV emission measurements (Std. 187): Needs reaffirmation or revision
- Shielding effectiveness (Std. 299.1): Work started on small enclosures
- Impulse bandwidth (Std. 376): Out of date and will be withdrawn
- ISM measurements (Std. 139): Reaffirmation completed

Just after the SDCom Part 2 meeting, there was an extended discussion of two other IEEE standards that have EMC involvement. Standard 1775 on Broadband Over Powerline emission measurements is a standard co-sponsored between the



A warm, sunny day made time outdoors for lunch a welcome break from the ANSI C63.5 workshop and also provided further discussion time on the topic of antenna calibration!

EMC Society and the Power Engineering Society. The chair of the project, Aron Viner, made a special trip to Portland to give a presentation on the activity on this project. This resulted in close to 20 questions being raised by the SDCom members to gain further clarity of the work and the relevancy to EMC issues with interference aspects. A draft of the standard was to be sent to the SDCom members within a few weeks of the meeting.

Another topic with an extended discussion was the work on P1900 on the coexistence/interference of radio services, the so-called cognitive radio or software defined radio activity. This is a project with interest of several IEEE Societies including EMC-S. The present discussion is that the standards should be managed by a standards coordinating committee (SCC) as suggested by the chair of the IEEE Standards Association Standard Board. Before such SCCs are formed, each IEEE Society has to be solicited to see if they prefer to be the sponsor instead of an SCC. The SDCom asked that the EMC-S submit their interest to be the sponsor realizing that there will be several other Societies doing the same. The results of this action remain to be determined.

In addition to its annual meeting in conjunction with the IEEE EMC Symposium, the SDCom continues its activity by meeting the day before the Board meetings throughout the year. For more information, visit the EMC Society web site for the schedule of meetings at www.emcs.org. Or contact Don Heirman on d.heirman@ieee.org for the schedule of meetings in 2007. Anyone with an interest in Standards is welcome to attend the Standards Committee meetings.

Standards Education and Training Committee (SETCom)

Qiubo Ye chaired the SETCom meeting on Monday for the first time in Portland. To set the goals for the committee, he presented several slides on the history and the future of the committee from his perspective. The following captures the essence of his presentation and activity for the coming year.

First, he presented the SETCom goals:

1. Prepare and conduct seminars for Working Groups on the development, coordination, balloting, and support of IEEE EMC standards



Dennis Camell of NIST (in black suit) leads the workshop review of antenna calibration procedures in the ten-meter chamber at Northwest EMC, location of the workshop.

2. Enhance the awareness of IEEE EMC standards throughout the EMC community and demonstrate how these standards can be effectively applied to the development, production, and use of equipment and systems

Second, he presented future plans:

1. Solicit EMC Standards tutorial articles from experts to be published in the EMC Newsletter
2. Cooperate with the EMC-S Education Committee to organize Standards Tutorials
3. Form a complete slate of officers and recruit members
4. Continue to organize Standards Workshops at annual EMC Symposia

He then introduced Johan Catrysse as his vice chairman with responsibilities to oversee the committee activity in Europe while Qiubo will handle North American and the Asian areas.

Qiubo Ye also organized a SETCom luncheon meeting on the Tuesday of the Portland symposium week. Four attendees showed their interest to be involved in SETCom business and organization. On Friday afternoon, he chaired the EMC Standards Workshop/Tutorial, which was the major activity of the committee for this symposium. Forty-three attendees braved the last day of the symposium to hear the presentations. The original arrangement was adjusted because a European speaker was not able to attend the symposium due to the last minute cancellation of his flight. However, the remaining speakers filled in the time. The final agenda was as follows (* indicates speaker):

- 1:00 pm-1:30 pm: Don Heirman*, IEEE Standards Association and Standards Development Process
- 1:30 pm-2:00 pm: Daniel D. Hoolihan*, History of EMC Society Standards
- 2:00 pm-2:30 pm: Kermit O. Phipps* and Philip Keebler, IEEE Standard 1560
- 2:30 pm-3:00 pm: Stephen Berger, IEEE P1900 Next Generation Wireless & Spectrum Management: A Perspective (Note: The substitute speaker was Andrew L. Drozd*)
- 3:30 pm-4:00 pm: Andrew L. Drozd* and Bruce Archambeault, Progress towards the Development of Standards and Recommended Practices for Validating Computational Electromag-



Following the ANSI C63.5 workshop, speakers Dennis Camell, Don Heirman, and Mike Windler (from left) joined registrar Janet O'Neil for a brief meeting to schedule the next workshop, in Honolulu, Hawaii, on July 6, 2007, in conjunction with the 2007 IEEE EMC Symposium.

netic (CEM) Techniques

4:00 pm-4:30 pm: Dale Svetanoff*, IEEE Standard 299 – A Versatile Tool for Shielding Effectiveness Measurement

4:30 pm-5:00 pm: Maria Sabrina Sarto and Christopher L. Holloway*, Measurement of Shielding Effectiveness for Shielded Enclosures

Qiubo will submit another request for a standards tutorial for the EMC 2007 Symposium that will highlight other EMC-S standards projects.

Standards Advisory and Coordination Committee (SACCom)

Elya Joffe is presently the chair of SACCom. However his vice chairman, Dave Guzman, will be taking over this responsibility in the near future. The main activity of SACCom was to co-host the annual SACCom/Representative Advisory Committee (RAC) luncheon with their members and the Board of Directors of the EMCS. This year, there were close to 30 in attendance where the committee members present gave a brief update of their respective committee activities. There is much to be learned from what others are doing which is too much for this column to handle. For more information on what was presented, contact Elya on eb.joffe@ieee.org.

In summary, Don Heirman, Vice President for Standards, on the Sunday as well as the Thursday evening of the symposium week, presented all the activities reported above to the Board of Directors. This is to keep the Board aware of the excellent progress that committees are making and to ask for any reaction to those areas where there are needs for Board intervention or action. We look forward to the next symposium in Hawaii where again we will have the full sequence of meetings similar to those held in Portland.

EMC Standards Update from the CISPR Meetings in Sweden, September 2006 **Antenna Calibration**

After a change of project leadership in 2004, the progress on the definition of antenna calibration procedures was less than expected. A first CD was circulated and numerous comments, many of them very controversial in nature, were received. The established target date for the circulation, July 31, 2006, could not be met.

The subcommittee therefore decided to take this project off the program of work in order to properly address the stated technical concerns. It was further decided to continue the work within the established ad hoc group. The first task will be the preparation of a draft document that will be based on the current work, including required improvements, to address the comments received. This draft document can be used as an attachment for a new NP at the proper time. The project leadership was taken over by the officers of the subcommittee (Mssrs. Don Heirman and Werner Schaefer) until a new project will be formally re-initiated.

Validation of Test Sites in the Range 1 – 18 GHz

The project is currently at pre-FDIS stage and the circulation of the FDIS is expected by October 15, 2006, per comment from the CO. The CDV is being used by various test laboratories and chamber manufacturers to evaluate existing chambers. During the CISPR/A/WG1 meeting, several contributions were presented that indicated detection of problems in chambers by applying this new method. Some concerns were still raised that the established SVSWR criterion of 6 dB could possibly be too restrictive. It was decided to monitor the feedback from the users of the standard and take action in the future if necessary. At present, no change was considered.

Tower and Turntable Influence

The procedure for the evaluation of the setup table was approved and published. At the CISPR/A/WG1 meeting, two contributions were presented that suggested the continuation of work to cover the frequency range above 1 GHz. It was decided to investigate the matter further and validate the proposed procedure. At the midterm meeting of CISPR/A/WG1 and WG2 in April 2007, a decision will be made about the next steps and a possible initiation of a new project. EMC



Welcome Dr. Jinliang He as the New Secretary of the EMCS Standards and Education Committee

Please welcome Dr. Jinliang He to the leadership in our EMC Society Standards community. He will work with Qiubo Ye, chair of the Standards Education and Training Committee (SETCom) and Professor Catrysse, Vice Chair of the SETCom.

Dr. He is a professor and Vice Chief of the High Voltage Research Institute at Tsinghua University, and the Chief of the Electromagnetic Environment Research Group in the State Key Lab of Power System at the Tsinghua University in China. His research interests include electromagnetic environment and electromagnetic compatibility in power systems, electronic systems and electric vehicles, ESD, EMC test technology (involving reverberation chambers and optical electrical field sensors), lightning protection and over voltages in power systems and electronic systems, grounding technology, power apparatus, and dielectric material. Dr. He is a senior member of the IEEE and a member of the EMC Society and Power Engineering Society. He has written five books and 200 technical papers (including more than 60 international Transactions papers), and has been involved in drafting eight China national standards.

The address of Dr. He is: Dept. of Electrical Engineering, Tsinghua University, Beijing 100084, China, email: hejl@tsinghua.edu.cn.

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