

The ESD Association newsletter, for everyone with an interest in the understanding and control of electrostatic discharge.



THRESHOLD™

Volume 21, No. 2

March/April 2005

News bits

Next online course: grounding

The date is set: March 30. Instructor Dave Swenson prepares an hour of instruction that can be gained from the convenience of your desk. See page 8 for details.

Device/Design Seminar set for May

The Device/Design Seminar, which counts toward four classes required for ESD Certified Professional-Device/Design certification is set for May 23-24 at ESDA Headquarters. See page 7 for more information.

Board of Directors nominations underway

Candidates for the 2006 ESDA Board of Directors have been nominated and ballots will soon be sent to the general membership. See page 6 for details.

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Program manager courses in Asia

This March the ESD Association again offers education opportunities in Asia. Four cities in Asia will host program manager certification related courses: Manila, Philippines; Bangkok, Thailand; Penang, Malaysia; and Singapore.

Course offerings include the following:

- ESD Basics
- ESD Auditing and Evaluation Measurements
- ESD Program Development and Assessment
- Packaging Principles for the Program Manager
- ESD Standards Basics for EPA

The demand for knowledgeable ESD program managers is growing. Qualified ESD personnel are needed to design, implement, and manage today's ANSI/ESD S20.20 control programs to protect sensitive devices and assemblies. Organizations and facilities with qualified ESD personnel on staff are better prepared for S20.20 facility certification.

These courses are designed to educate and train professional ESD program managers. The courses offered during this seminar series are required courses to obtain the ESD Association's ESD Certified Professional-Program Manager certification. Although other tutorials and seminars are also necessary to fulfill the certification requirements, these programs are critical to understanding ESD fundamentals, program development and certification, and the ongoing process of verifying performance of a program's technical ESD controls.

Courses will be taught by Ron Gibson, Celestica International, Inc.; Stephen A. Halperin, Stephen Halperin & Associates, Ltd.; and John Kinnear, IBM.

The following are brief descriptions of course content.

ESD Basics

This tutorial consists of three sections. Section A defines the causes of ESD and critical elements related to charge generation, material characteristics, and electrostatic phenomenon. Section B explains and demonstrates the four critical device failure models. Section C provides an overview of device protection during handling and product assembly, a summary of ESD control elements, and a fundamental overview of S20.20 program requirements. This full day course is required for those in-plant auditors and program managers who are working toward professional ESD certification.

ESD Auditing & Evaluation Measurements

This program was designed to support S20.20 in-plant verification requirements. It reviews the evaluation and audit measurement procedures for S20.20 ESD Controls listed in the S20.20 document, Table 1-ESD Control Program Technical Requirements Summary.

These recommended measurement procedures confirm the proper operation and use of ESD control products and materials selected as part of a facility's S20.20 ESD control program. This course is an ESDA certification requirement for in-plant auditors and program managers who are working toward professional ESD certification.

ESD Program Development and Assessment

This seminar provides instruction on designing and implementing an ESD control program based on ANSI/ESD S20.20. The course provides participants with the tools and techniques to prepare for an ESD facility audit.

Association news

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Program manager courses in Asia

Packaging Principles for the Program Manager

Shipping electronic parts within a factory, to another factory, distributor, or to an end-user has always been an area of uncertainty within the manufacturing process. To provide clear-cut information on what type of controlled packaging should be used in any situation, the ESD Association has recently released a comprehensive revision of the obsolete industry standard EIA 541-1988. The new document, ANSI/ESD S541-2003, is the focus of this session. It provides information and guidance, as well as material specifications, to assist in the design and implementation of a packaging plan for use within an ANSI/ESD S20.20 based ESD control program. Current and newly released test method standards suitable for packaging material evaluation will be described. Course credit applies to the ESD Certified Professional-Program Manager certification curriculum.

ESD Standards Basics for EPA

The ESD Association's introduction of the ESD Certified Professional-Program Manager certification curriculum has created a need to modify the standards tutorial that has been presented for a number of years. This new standards tutorial provides an overview of all the standards, grouped into common test method types based on measurement probe and test instruments. A common methodology is used in this tutorial to cover the requirements, applications and specifications for each standard and standard test method.

See page 5 for dates and locations. Contact the ESD Association, at 315-339-6937 or visit our website, www.esda.org, for more information or to register.

Standards

Standards activity update

February 2005 Standards Meeting Series

The ESD Association Standards Committee (StdCom) and standards working groups (WG) held their February 2005 meeting series at the Anaheim Marriott, in Anaheim, CA on February 10-13, 2005.

StdCom approved one new document for publication. ESD S7.1-Floor Materials-Characterization of Materials document was approved for publication. ESD S7.1-2005 is a revision of the ANSI/ESD STM 7.1-2001 Resistive Characterization of Materials-Floor Materials document.

February 2005 Working Group Activities

Garments-WG 2 announced Tom Albano as Working Group 2 chairperson (WGC), succeeding Kay Adams to this seat. The working group discussed and identified the direction of this WG. The WG's current standard test method, STM2.1-1997 requires review and possible revision of technical content.

Ionization-WG 3 is conducting the five-year review of STM3.1-2000 during its five year review. The WG decided to add a data recording form (DRF) to the periodic verification standard practice (SP), SP3.3-2000. The working group also discussed the five-year review of SP3.3-2000. An Ionizer Feedback Technical Report was submitted to each WG member for review and feedback to the working group chairperson (WGC) by the end of March. This committee also discussed the potential for an Ionizer Feedback Electrical Interface stan-

dard. A Purpose and Scope was prepared and submitted to the StdCom chairman for review.

Human Body Model Device Testing-WG 5.1 completed the initial draft of two standard practice documents, consisting of two alternate test methods for human body model (HBM) & machine model (MM), and presented them to the Technical and Administrative Support Committee (TAS) for review. The WG also began reviewing STM5.1-2001, which is due for a five-year review in 2006. The WG expects technical revisions to be made during this review.

CDM Device Testing-WG 5.3.1 began reviewing and discussing changes that will be made to STM5.3.1-1999, which is due for a five-year review in 2006. The WG also discussed a new circuit model for CDM test heads, charge package size and the additional thin dielectric, and data on the new improved module, which is used for waveform verification.

Transient Latch-up Device Testing-WG 5.4 announced Tom Meuse as WG 5.4 chairperson, succeeding Gary Weiss to this seat. The WG discussed the continuing issue of equipment availability for the round robin testing. The WGC is working on the round robin exercise and developing a schedule with equipment availability consideration. The chairperson will collect new transient latch-up (TLU) usage papers from members, summarize, and distribute to WG members for review. The WG members also reviewed the current plan and discussed the future work plan.

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From the President

Reaching more countries than ever



Ed Weggeland

As globalization continues to become a reality for more and more companies, the demand for information and training about ESD and ESD control is growing in conjunction. The ESD Association is making great strides to

meet these demands and ensure current ESD information and training is available where there is a need. This year is witnessing a tremendous expansion in edu-

cation offerings from the association, and more than an ever before, these courses are available in Asia and Europe in addition to North America.

The 2005 Education Schedule (available at the ESDA website, www.esda.org or see page 5 of this newsletter) currently lists over 20 courses available in seven countries. This March, courses required for the ESD Certified Professional-Program Manager certification will be available in Manila, Philippines; Penang, Malaysia; Bangkok, Thailand; and Singapore. With

this expansion, Program Manager certification can now be completed in two years or less. In addition, people interested in the ESD Certified Professional-Device/Design certification will be able to take a seminar that meets several course requirements in Munich, Germany, in June.

The increased availability of these courses gives us the opportunity to share the dangers of ESD and the solutions with more people and companies than ever. And for people working in the field outside North America, they now have more chances to improve their knowledge, job performance, qualifications, and their careers without the high costs of international travel.

Association news

Website updates

Standards

If you are checking the ESD Association website for a particular standard it should now be easier to find.

The Standards section of the website has been broken into sections to facilitate quicker searches, and more comprehensive navigation has been added.

Also, accessing free downloads is now easier than ever. From the Key Downloads menu on the home page, click the document you want, enter your username and password (or create a new one if it is your first time downloading one of the free standards), and the desired standard downloads in PDF format. The free downloads can also be accessed from the Standards section.

If you are unfamiliar with the free downloads, now may be a great time to take advantage of this resource. The following documents are available for free on the ESDA website:

- S541
- ANSI/ESD S20.20
- ANSI/ESD S20.20 Standard-Chinese Version
- ANSI/ESD S20.20 Standard-Spanish Version
- ANSI/ESD STM5.1-2001
- ANSI/ESD STM5.2-1999
- ANSI/ESD STM5.3.1-1999
- Glossary of Terms

Certification

In addition to having more course options available, The ESD Certified Professional-Program Manager and ESD Certified Professional Device/Design certification programs have undergone a few changes.

To help people interested in certification better understand the programs available, course descriptions have been added to the website. In each certification section, click the required course title to see a full description. Two courses have been added to the Device/Design certification and one course has been added to the Program Manager certification, so be sure to check these out. If you have any ques-

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Symposium

2005 Symposium Program

27th Annual EOS/ESD Symposium

Anaheim, California, USA, September 11-16, 2005

The EOS/ESD Symposium, the largest venue dedicated to EOS and ESD education, is only six months away. The 27th annual EOS/ESD Symposium is scheduled for September 11-16, 2005, at the Marriott Anaheim in Anaheim, California. The symposium will combine technical sessions, tutorials, workshops, exhibits and other events representing the best education, the latest research, and the most up-to-date technology the international ESD community has to offer. This year's symposium features in-depth educational opportunities focused on three primary tracks: ESD Test, Failure Analysis, and Systems; Factory, Materials, and ESD Control; and Device, Design, and Technology.

Technical Sessions

This year's technical sessions feature more than 50 technical papers presented in parallel sessions. Topics covered in these technical sessions will include on-chip physics/modeling; on-chip RF; on-chip latchup; system level ESD, factory and materials; on-chip CMOS; MR heads; and testing, TLP and on-chip standards.

The technical sessions begin with a plenary speaker, Tuesday, September 13. This year the topic is ESD thermal phenomenon presented by Professor Robert Dutton of Stanford University.

Tutorials and Workshops

Symposium week opens officially on Sunday, September 11, with a full day of ESD

tutorials. These in-depth, full-day sessions include courses such as ESD Basics, ESD On-Chip Protection, System Level ESD/EMI, ESD/EMI Systems Testing to IEC Standards, and ESD Program



Development and Assessment.

Additional tutorials are scheduled for Monday, September 12, and Thursday, September 15. The preliminary tutorial schedule reflects approximately 20 sessions, including How To's of In-Plant ESD Auditing and Evaluation Measurements, Packaging Principles for the Program Manager, and Air Ionization: Issues and Answers. Several new tutorials have been added to the schedule to help attendees obtain the ESD Certified Professional-Program Manager certification.

In addition to tutorials and technical sessions, symposium offers workshops held in panel format to help facilitate greater learning and encourage peer discussions in an interactive workshops setting. Workshops offered on Wednesday, September 14, include subjects such as on-chip ESD protection, TLP testing, cleanrooms, ESD

in magnetic recording, ESD auditing, ESD automated equipment, and system level ESD considerations.

Exhibits

Attendees will have the opportunity to visit nearly 80 exhibit booths offering ESD control products and services. Beginning the evening of Monday, September 12, through Wednesday, September 14, the exhibit hall will be open to anyone interested in EOS and ESD.

Other events

Along with the exemplary educational opportunities, a welcome reception, an awards breakfast, the association luncheon and annual meeting, and a professional and technical women's reception will also be held. In addition, symposium offers authors' corners, which provide opportunities for in-depth discussions with authors of this year's technical papers. Also taking place during symposium week are several days of standards meetings, during which the various working groups meet to discuss and develop standards documents. A detailed symposium program will be mailed in early summer, and will be available at that time on the ESDA website, www.esda.org.

New Venue

Attendees will be able to attend symposium and find accommodations at the Anaheim Marriott, which features 31 meeting rooms and 54,000 sq. ft. of total meeting

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Education

Education schedule for 2005 offers more

The majority of the courses listed in the 2005 education schedule have now been confirmed. Some have registration forms available on the website now.

Below is a listing of courses currently scheduled, including another online tutorial delivered through Centra software, on

March 30. Most of the courses listed below are requirements for ESD Certified Professional-Program Manager or ESD Certified Professional-Device/Design certification. See page 6 of this newsletter for a complete listing of the required courses for certification. For more information on

the courses in Asia see page 1 of this newsletter. The full schedule, including instructor listings, is available online. This schedule is subject to change and will be updated throughout the year. Check the website, www.esda.org, or contact the ESD Association for the latest schedule.

Course	Location	Date	Designation*	Status
ESD Basics	Philippines	March 10	Program Manager	Confirmed
How To's of In-Plant ESD Auditing and Evaluation Measurements	Philippines	March 11	Program Manager	Confirmed
ESD Basics	Penang	March 14	Program Manager	Confirmed
How To's of In-Plant ESD Auditing and Evaluation Measurements	Penang	March 15	General Interest	Confirmed
ESD Program Development and Assessment	Penang	March 14-15	Program Manager	Confirmed
ESD Basics	Bangkok	March 17	Program Manager	Confirmed
How To's of In-Plant ESD Auditing and Evaluation Measurements	Bangkok	March 18	Program Manager	Confirmed
ESD Program Development and Assessment	Bangkok	March 17-18	Program Manager	Confirmed
ESD Basics	Singapore	March 21	Program Manager	Confirmed
How To's of In-Plant ESD Auditing and Evaluation Measurements	Singapore	March 22	Program Manager	Confirmed
ESD Program Development and Assessment	Singapore	March 21-22	Program Manager	Confirmed
ESD Standards	Singapore	March 23	Program Manager	Confirmed
ESD Packaging Principles	Singapore	March 23	Program Manager	Confirmed
Grounding for the Electrostatic Protected Area	Centra (online)	March 30	General Interest	Confirmed
How To's of In-Plant ESD Auditing and Evaluation Measurements	Austin, TX	April 12	Program Manager	Confirmed
ESD Program Development and Assessment	Bloomington, MN	May 10-11	Program Manager	Confirmed
ESD Device/Design Seminar	Rome, NY	May 23-24	Device/Design	Confirmed
Device Technology and FA Overview	Austin, TX	June 7	Program Manager	Confirmed
ESD Standards	Reno, NV	June 9	Program Manager	Confirmed
ESD Packaging Principles	Reno, NV	June 9	Program Manager	Confirmed
ESD Device/Design Seminar	Munich, Germany	June 27-28	Device/Design	Confirmed
Electrostatic Calculations	Mexico	August	Program Manager	Tentative
ESD Packaging Principles	Austin, TX	October 12	Program Manager	Confirmed

* Course is a requirement of this certification program

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Certification

Advance your career

Earn an ESD Association professional certification

The ESD Association now offers Professional Certification for ESD Control Program Managers and for Device/Design Technical specialists.

The impact of the ESD Control Program Standard *ANSI/ESD S20.20-1999: Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)* on the global industry has been extraordinary. The ESD Association's Board of Directors recognizes the need to offer a certification program for individuals that are involved in designing, implementing, managing and auditing ESD control programs in their facilities. The ESD Certified Professional-Program Manager certification program was announced in 2003 to serve that purpose. In addition, the needs of the technical community for certification of various technical specialists are apparent. The ESD Association is pleased to now offer an ESD Certified Professional-Device/Design certification program as well.

Requirements for certification will include, as a minimum, attending required prerequisite tutorials, and passing a final exam.

Many of the prerequisite courses are available in the 2005 Symposium tutorial program (list of required courses follows) and additional courses are in development.

Please watch the ESD Association website at www.esda.org for announcements regarding these exciting and important new offerings.

Program Manager Certification Seminars and Tutorials

- ESD Program Development and Assessment (ANSI/ESD S20.20 Seminar)
- ESD Basics for the Program Manager

- Air Ionization: Issues and Answers
- How To's of In-Plant ESD Survey and Evaluation Measurements
- Packaging Principles for the Program Manager
- ESD Standards Basics for EPA
- Device Technology and FA Overview
- Electrostatic Calculations for the ESD Engineer
- Cleanrooms Considerations for the Program Manager
- ESD/EMI Systems Testing to IEC Standards

Device/Design Certification Tutorials

- ESD On-Chip Protection in Advanced Technologies
- System Level ESD/EMI (Part 1 & 2)
- On-Chip ESD Protection in RF Technologies
- SPICE-Based ESD Protection Design Utilizing Diodes and Active MOSFET Rail Clamp Circuits
- EOS/ESD Failure Models and Mechanisms
- Circuit Modeling and Simulation for On-Chip Protection
- Latchup Physics and Design
- Troubleshooting On-Chip ESD Failures
- Transmission Line Pulse Measurements: Parametric Analyzer for ESD On-Chip Protection
- CDM Protection Design
- Impact of CMOS Technology Scaling on ESD HCPH
- CDM Design and Characterization

To obtain additional information about professional certification please contact the ESD Association: phone, 315-339-6937; fax, 315-339-6793; email: info@esda.org

www.esda.org

Association

Board of Directors nominations process

Each year, the Constitution and Bylaws of the Association require the membership to elect four Members at Large to the Board of Directors (BoD). Members are elected to three-year terms.

The ESD Association's Nominations Committee is required to prepare a slate of candidates to fill the four BoD positions, which will be vacated on December 31, 2005. The candidates may be nominated by the committee or a member may submit a petition for a nominee. Petitions must contain 25 identifiable signatures and membership numbers of current ESD Association members. Petitions for 2006 were due by mail no later than February 16, 2005, at Association Headquarters: ESD Association, 7900 Turin Road, Bldg. 3, Rome, NY 13440-2069. (Faxed petitions are not accepted.)

In January, ESD Association members were sent a letter in the mail for nominations by petition to this slate. During the February meeting series in Anaheim, CA, held February 10-15, 2005, the nominations committee reviewed and selected the candidates for the BoD nominations slate.

Ballots will be sent to the general membership by May 1, 2005, and must be returned no later than July 1, 2005. The results of the election will be announced at the annual meeting during the 2005 EOS/ESD Symposium in Anaheim, California, September 13, 2005.

The nominations committee encourages all members to do their part to help elect the best-qualified BoD possible. And, of course, be sure to vote!

Further information is available from the ESD Association, 7900 Turin Road, Bldg. 3, Rome, NY 13440; phone: 315-339-6937; fax: 315-339-6793; e-mail: info@esda.org.

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Corporate Membership program can save money

If you'd like to send several people to this year's EOS/ESD Symposium, but are concerned about the costs, take a close look at the ESDA Corporate Membership program. This package not only includes symposium and tutorial registrations, but also coupons for additional educational programs that can be used for the symposium or other ESDA sponsored programs throughout the year. You can also receive multiple individual memberships,

a Standards Enterprise-Wide Site License, and a paper ANSI/ESD S20.20 review of your ESD control program. You can save as much as 45% over purchasing the items separately. Sign up now to reduce your costs of sending multiple individuals to the 2005 Symposium and save on a variety of ESD Association programs and services during the coming year.

Two package types are available to suit different needs:

- User package—designed for companies who have a use for ESD control and design education
- Vendor package—designed for companies interested in exhibiting at the EOS/ESD Symposium.

Download program details at www.esda.org/symposia.html#corporatemembership or call the association at 315-339-6937.

Device/Design Seminar set for May 23-24 in Rome, NY

If you are interested in the ESD Certified Professional-Device/Design certification here is a way get a head start with your classes. The Device/Design Seminar, a two day course, fills the requirements for the following required courses for certification:

- ESD On-Chip Protection in Advanced Technologies
- SPICE-Based ESD Protection Design Utilizing Diodes and Active MOSFET Rail Clamp Circuits
- EOS/ESD Failure Models and Mechanisms
- CDM Design and Characterization

Developed by the Association's International Council on Education (ICE), the technical seminar for on-chip ESD protection designers is part of the Association's effort to expand technical education beyond the annual EOS/ESD Symposium. Created specifically to meet the needs of persons responsible for ESD protection in circuit design, this two-day seminar program includes in-depth technical education in a number of specific areas including the following:

ESD in the Industrial Semiconductor IC Context—What is ESD? Why is it impor-

tant? What methods are used to control it? Who is responsible for ESD? What is the role of the design engineer?

ESD Models and ESD Testing—Description of the three models and model issues from the designer's point of view, for example, tester-device interaction.

ESD Device Operation—Fundamentals of MOS device operation, its behavior under high current mode, latch-up effects and SCR devices, transistor snapback behavior, emission analysis, process effects, diode physics and operation, the role of the PMOS, BiCMOS and the similarity of the techniques for CMOS, bipolar devices, DENMOS and LDMOS devices and protection techniques.

ESD Circuit Operation—Operation of and issues with NMOS circuits, active clamping versus snapback, self-protection versus parallel protection; static (Zener based) triggering, dynamic gate-coupling, substrate pumping, and multi-finger turn-on. Instruction includes discussion of implementation, simulation, and experimental results.

Technology Impact on ESD Design Choices—Review of ESD protection design options as a function of technology and process fluctuations.

Special Circuit Requirements, Includ-

ing RF, and Their Impact on ESD—Mixed voltage protection, RF and analog protection, BiCMOS, high voltage protection, and new latch-up effects.

CDM ESD Protection—Concerns and considerations; fast enough diodes, transistors, and SCRs; the on-chip CDM event; the golden rules; an application example.

Design Examples and Case Studies—Layout methods, ESD rules, new design methods, case studies of protection design problems, class exercises.

Instructors for the seminar are Charvaka Duvvury, Ph. D., Texas Instruments, and James W. Miller, Freescale.

ESD Association Headquarters and Training Center, in Rome, New York, will again host the Device/Design Seminar. The city of Rome, located in central New York, is about an hour from Syracuse and three hours from Rochester. Headquarters are located at the Beeches Inn and Conference Center, with ESDA Headquarters offices situated among the tall beech trees, not far from the historic Beeches Inn overlooking a quiet pond.

Detailed information on the seminar will be mailed to all ESDA members and also may be downloaded from the ESDA Web site, www.esda.org. For more information on the ESD Design Seminar, contact ESDA headquarters.

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Education

Online tutorial: Grounding for the Electrostatic Protected Area

Continuing to offer education as often and as conveniently as possible, the ESD Association has scheduled the second online tutorial for March 30 at 1:00 PM EST. This month's topic is Grounding for the Electrostatic Protected Area. The online course runs for approximately one hour.

Grounding is perhaps the single most important technical aspect in establishing an electrostatic protected area. The ESD Association standard for grounding, *ANSI/ESD S6.1-1999 Grounding-Recommended Practice*, issued in 1991 and reaffirmed in 1999, is in the final stages of a complete revision. The ESD Association's new grounding standard will provide users with specifications guidance and suggestions not found anywhere else.

This online tutorial provides an overview of the proposed new standard, highlights the pending changes, and includes answers to the following questions:

- What grounding method is appropriate for a work area?
- What measurements are needed?
- Are there any new terms or definitions?
- What are the proper ways to ground personnel in the workplace?

This tutorial has been developed and will be presented by David E. Swenson, recently retired after 34 years of service from 3M Electronic and Interconnect Solutions Division, located in Austin, Texas. Swenson, together with his wife, is founder and owner of Affinity Static Control Consulting, L.L.C. He has been a member of the ESD Association since 1984 and has served in many capacities, including senior vice-president in 1996 and 1997 and president in 1998 and 1999.

The cost of this tutorial is \$95.00 for association members and \$140.00 for non-members. To register for this course go to the Register for Upcoming Courses link, www.esda.org/upcomingcourses.html, on the ESDA website and download the PDF registration form.

Standards

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Standards activity update

Transmission Line Pulsing (TLP)-WG 5.5 distributed the Transmission Line Pulse (TLP) Technical Report for each committee member to review. The WG members were asked to provide comments and feedback to the WGC. The WGC will compile the comments, review, and prepare for review by TAS by the end of March 2005.

Grounding-WG 6 discussed the StdCom vote-by-mail results and addressed the comments from the negative votes. The WG made modifications to the document.

Flooring-WG 7 presented DSTM7.1-2004 to StdCom and received approval for elevation and re-designation to a standard. S7.1-2005 is expected to be available for sale by the end of April 2005. A Flooring Technical Report is currently in-process and targeted for release by June 2005.

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Symposium

Preliminary Schedule Symposium Week 2005

Friday, September 9, 2005
Standards Meetings

Saturday, September 10, 2005
Standards Meetings

Sunday, September 11, 2005
Registration Opens
Standards Meetings
ANSI/ESD S20.20 Seminar, Part 1
ESD Tutorials

Monday, September 12, 2005
Registration
ANSI/ESD S20.20 Seminar, Part 2
ESD Tutorials
Welcome Reception
Exhibits (PM only)

Tuesday, September 13, 2005
Registration
Awards Breakfast
Exhibits
Technical Sessions
Association Luncheon and Annual Meeting
Professional and Technical Women's Reception

Wednesday, September 14, 2005
Registration
Technical Sessions
Exhibits
Workshops

Thursday, September 15, 2005
Registration
Technical Sessions
Tutorials

Friday, September 16, 2005
Professional Certification Exam

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Local Chapters

Forum in the Philippines to include ESDA tutorials

The ASEMEP Electrostatic Discharge Council (AEC), the first chapter of the Electrostatic Discharge Association (ESDA) in Asia, is again holding the Philippine Electrostatic Discharge Forum on March 8 and 9, 2005, at the Bellevue Hotel, Alabang City, Philippines. This event is sponsored by the Semiconductors and Electronics Industries in the Philippines (SEIPI) and the Association of Semiconductor and Electronics Manufacturing Engineers of the Philippines (ASEMEP).

The objectives of the Philippine Electrostatic Discharge Forum are to promote awareness and understanding of ESD and showcase the trends and developments in ESD detection and control. International and local delegates involved in ESD control within and outside the semiconductor and electronics industries in Asia are expected to attend the forum.

Suppliers to the industry will showcase

test and audit equipment, ESD and cleanroom garments, ESD control equipment, ESD control accessories, ESD safe materials, publications, and training materials. Currently, this is the only event focused on the ESD market in the Philippines.

This year the forum will be followed by two ESD Association tutorials on March 10 and 11: ESD Basics and How To's of In-Plant ESD Auditing and Evaluation Measurements. Both courses are required for ESD Certified Professional-Program Manager certification. The cost of each course is \$475.00 or \$850.00 for both.

For more information about the forum, visit www.esdphilippines.com. To register for the ESDA tutorials download a registration form in PDF format at www.esda.org/upcomingcourses.html, visit www.esdphilippines.com, or call the association at 315-339-6937.

Association news

Continued from page 3

Website updates

tions contact the association at info@esda.org or 315-339-6937.

Education

The 2005 education schedule is available online at www.esda.org. The schedule includes courses available, locations, dates, and instructors. See page 5 of this newsletter for a current listing of courses, locations, and dates. The schedule is updated regularly as courses and locations are confirmed.

As a course is confirmed, a flyer and registration form, in PDF format, is made available on the website. Be sure to visit the Register for Upcoming Courses link, www.esda.org/upcomingcourses.html, from the homepage, and start making your education plans early.

Any questions or comments about the website can be directed to info@esda.org.

Standards

Continued from page 8

Standards activity update

Handlers-WG 10 reviewed charged device model (CDM) waveforms and discharge waveforms from two different sources. Data was from large and small ICs and from a standardized capacitor structure. The capacitor waveforms compared favorably to the IC waveforms. Additional capacitor data and device CDM data is needed; action items to obtain the needed data were assigned.

Packaging-WG 11 reviewed the first lab test method charge retention. The WG assigned labs to collect data.

Simulators-WG 14 reviewed SP14.1-2004 for applicability to Cable Discharge Events (CDE) measurements. The WG used SP14.1-2004 as a draft for the CDE document. The WG made all applicable modifications relating to CDE measurements. The WGC will modify the document and circulate to all WG members for review and approval to submit for TAS review.

Gloves-WG 15 reviewed comments from TAS on WIP15.1. WG 15 accepted the changes and recommendations. WG 15 re-wrote the Purpose and Scope and made other non-technical changes. The WG will add a figure illustrating the use of the Constant Area and Force Electrode (CAFÉ) by a user. Once this illustration is added, the document will be formatted and distributed to StdCom for a vote-by-mail.

Workstations-WG 53 reviewed comments from TAS on the Compliance Verification document. WG 53 will make revisions based on those comments and prepare for a second submission to TAS.

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Standards

Symposium

Preliminary
June Meeting Schedule



ESD Association
Standards and Association Committee Meetings
June 9-14, 2005
John Ascuaga's Nugget Resort Hotel
Reno, Nevada

Friday, June 10

TAS	7:00-5:00
WG-3, Ionization	8:00-Noon
WG-6, Grounding	8:00-Noon
WG-5, Device Testing	8:00-5:00
WG-10, Handlers	1:00-5:00

Saturday, June 11

TAS	7:00-5:00
WG-53, Workstations	8:00-Noon
WG-5, Device Testing	8:00-5:00
WG-11, Packaging	1:00-3:00
WG-2, Garments	3:00-5:00
WG Chair meeting	5:30-6:30
ESDA Mixer - all invited	6:30-7:30

Sunday, June 12

TAS	7:00-5:00
ICE Education	8:00-Noon
WG-7, Flooring	8:00-Noon
WG-14, ESD Simulators	8:00-Noon
WG-15 Gloves	8:00-Noon
STDCOM	1:00-4:00
Technical Liaison	5:00-6:00

Monday, June 13

Human Resources	8:00-Noon
Technical Program	8:00-4:00
Marketing & Comm.	10:00-Noon
Steering Committee	2:00-5:00

Tuesday, June 14

Board of Directors	8:00-5:00
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Exhibit at the
2005 EOS/ESD
Symposium

Exhibitor information is available online at www.esda.org/exhibits.html. To reserve your space or for information on exhibiting, contact Lisa Pimpinella phone, 315-339-6937; or fax, 315-339-6793.

Below is a list of the current exhibitors:

- 3M
- ACL, Inc.
- Associated/ACC
- Barth Electronics, Inc.
- Bolidt Synthetic Products & Systems
- Botron Co., Inc.
- CCI-Conductive Containers, Inc.
- Century Container
- Credence Technologies, Inc.
- Desco Industries
- Dou Yee Enterprises, Ltd.
- ESD Consulting Group, Inc.
- ESD TLP Consulting & Testing
- Electro-Tech Systems, Inc.
- Electronic Polymers, Inc.
- FLEXCO
- Global Technology Leader, Inc.
- Hyperion Catalysis
- ION Systems
- ITW Richmond Technology
- Kreha Corporation of America
- MEFAS Inc.
- Monroe Electronics
- Noveon Static Control
- Novx Corporation
- Oryx Instruments
- PRF Industrial LLC
- RTP Company
- SCC
- SIMCO an ITW Co.
- Static Solutions
- STATICO
- Stephen Halperin & Assoc./Prostat Corp.
- Tech Wear Inc.
- Thermo Electron Corp.
- Trek Inc.
- Uniglobe Kisco, Inc.
- Vidaro Corp.

Publications

- A2C2
- Circuits Assembly
- Compliance Engineering
- Evaluation Engineering
- Printed Circuit Design & Manufacture

Molded Fiber Glass Tray Co.

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Association news

And the survey says...

Each month *Threshold*TM provides a column to address the many questions and comments expressed by Association members in their responses to an email survey conducted by the ESD Association's Human Resources Business Unit.

Structured in a question and answer format, this column presents questions, comments, and requests chosen from the survey responses and provides answers to those questions, which are supplied by the Association.

The primary goal of the ESDA is to serve our members in any way possible. The survey responses received serve as an excellent source of direction in our quest to serve the membership.

As many of you know, this survey was distributed by email in August 2003. The ESD Association sincerely thanks those members who took the time to send in their comments.

Survey question:

What products or services can the ESD Association provide to help you in your ESD duties?

Member comment:

The ESDA is very helpful in advancing the ESD and new technologies. I think that the ESDA can provide more networking events and more technical workshops even

through out the year not just during the conference. It is also great to see that the ESDA is providing tutorials all over the year and more of those are very helpful for educating people about ESD from the experts especially with new emerging technologies.

ESDA response:

2005 will mark a very busy year for the association and education. Over 20 classes will be offered this year in North America, Europe, and Asia. Courses required for ESD Certified Professional-Program Manager and ESD Certified Professional-Device/Design certification, as well as online courses provided for general interest, will be available throughout the year. See page 5 of this newsletter for a complete schedule. Keep an eye on the website or contact the association at 315-339-6937 for updates on the education scene.

In addition to tutorials and seminars, the ESD Association provides editorial contributions to several publications. Two of which are regular contributions: "ESD Open Forum" is a monthly column published in the magazine *Conformity* (and available online at www.conformity.com) and "ESD Basics" is a quarterly column available in *Circuits Assembly*. Through these outlets the ESD Association further expands its ability to bring new information to people working in the field.

Symposium

Continued from page 4

2005 symposium program

and banquet space. The hotel lobby has been recently renovated to add elegance, drama, and character through details in architecture, decor, and even furniture.

The Anaheim Marriott is in the heart of an area full of business and recreation. Only two blocks from Disneyland Park, Disney's California Adventure, and Downtown Disney, you are also not far from natural beauty to be found at places such as the Bolsa Chica Ecological Reserve, the Arden canyon, and Crystal Cove State Park.

The ESD Association, in cooperation with the IEEE, sponsors the EOS/ESD Symposium. It is technically co-sponsored by the Electron Devices Society. The general chair is Charvaka Duvvury, Texas Instruments. The technical program chair is Donn Bellmore, Universal Instruments Corp., and the vice-general chair is Carl Newberg, River's Edge Technical Service/Microstat Labs.

Association news

March Volunteer Spotlight

At the beginning of each month, take a moment to learn more about the faces behind the ESD Association at www.esda.org/csp.html. March's spotlight is on Gene Worley of On Chip ESD Solutions/Chronicle Technology.

Check out previous Volunteer Spotlights in the Spotlight archives, www.esda.org/volunteerarchive_main.html.

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Your Ad Can Appear Here

Contact ESD Association for details
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Calendar

March 2005

March 8- 9

ASEMEP Electrostatic Discharge Council (AEC)

Electrostatic Discharge Forum
Bellevue Hotel, Alabang City, Philippines
www.esdphilippines.com

March 10 and 11

ESD Association

Program Manager Tutorials at the Electrostatic Discharge Forum
Bellevue Hotel, Alabang City, Philippines
www.esda.org or
www.esdphilippines.com

March 14-23

ESDA Program Manager Courses in Asia

Penang, Bangkok, and Singapore
www.esda.org

March 22-23

CleanRooms Contamination Control Technology Conference & Exhibition 2005

Seaport World Trade Center Boston, MA
<http://cre05.events.pennnet.com>

March 30

Online tutorial--Grounding for the Electrostatic Protected Area

www.esda.org

April 2005

April 7 and 8

The 2005 Turnkey Conference

San Diego, California
www.a2c2.com

April 12

ESDA Program Manager Course

How To's of In-Plant ESD Auditing and Evaluation Measurements
3M Innovation Center, Austin, Texas
www.esda.org

May 2005

May 10-11

ESDA Program Manager Course

ESD Program Development and Assessment
Hampton Inn, Bloomington, Minnesota
www.esda.org

May 23-24

ESDA Device/Design Seminar

ESDA Headquarters, Rome, New York
www.esda.org

Threshold

Threshold™ is published six times a year by the ESD Association, a not-for-profit corporation. It strives for the advancement of theory and practice of electrical overstress avoidance and of allied arts and sciences and the maintenance of a high professional standing among its members and others.

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September/October	Aug. 1
November/December	Oct. 1
January/February	Nov. 19
March/April	Feb. 1
May/June	April 1
July/August	June 1



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Threshold Institutional Listings

Space in the Threshold Institutional Listings, which appear at the bottom of newsletter pages, can be purchased for \$600.00 for six consecutive issues. Larger contributions are welcome. No agency fee is granted for soliciting such contributions. Inquiries, or contributions made payable to the ESD Association, should be sent to

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