February 2012 IEEE Reliability Society Newsletter

Joint-Section Chapter - Boston - New Hampshire - Providence

November 2011 - January 2012

http://www.ieee.org/bostonrel

Greetings,

It is my pleasure to be able to write to you as one of my first duties as the newly elected Chair of the IEEE Reliability Chapter of the Boston area for 2012.

We are pleased to invite you to our next monthly meetings. In February Andrew Kopanski will talk about ESD (Electrostatic Discharge) Class 0 protocols at Teradyne, Inc. This is critical for utilizing today's electronics, which are more sensitive than ever before. In March, Dr. Vladimir Liberman of MIT Lincoln Laboratory will talk about the reliability of materials when exposed to ultraviolet light. This is important for building reliable ultraviolet sources, which are used in applications such as micromachining, forensics, astronomy, photolithography, micromachining, refractive eye surgery, and sterilization. The events are free, but we ask that you register in advance so that we can plan seating and refreshments. More information will be posted at http://www.ieee.org/bostonrel.

I hope to meet you at the next chapter event,
Dan Weidman
Boston Joint-Section Chapter Chair

In this Issue

Recent Activities

November 10, 2011
- "Failure Mode and Effects Analysis, Design & Process- Techniques, Tools," Angelo Scangas, Quality Support Group, Inc.

December 14, 2011
- Joint-Section Reliability Chapter Annual Past Chairs Dinner Meeting
- Election Results
- Ramon De la Cruz, In Appreciation – AdCom Award
- "Counterfeit Component Avoidance Workshop – CCAW," Don Trenholm, President, Custom Analytical Services, Inc.
- Past Chairs Photo Session

In Memoriam
- Prior Chapter Chairs Irving Bosinoff, Charles Saraglow, and Anita R. Cederholm passed in 2011.

Local IEEE News

December 13, 2011
- IEEE Milestone Plaque Awarded to Draper Laboratory for Apollo Guidance Computer Development

Upcoming Events

February 8, 2012
- "ESD Class 0 Protocols," Andrew Kopanski, MIT Lincoln Laboratory, a joint meeting with NE-ESDA and Boston SMTA, at Teradyne, North Reading, MA.

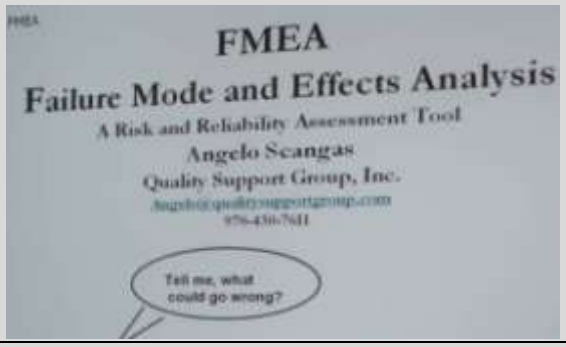
March 14, 2012
- "Reliability of Materials under UV Exposure," Dr. Vladimir Liberman, MIT Lincoln Laboratory, at MIT Lincoln Laboratory.

April 11, 2012	• "A Guide to the Forthcoming Revision of the IEEE 730 Software Quality Assurance Standard," David Heimann, at MIT Lincoln Laboratory.
Society Participation	• http://www.ieee.org/bostonrel • Suggest a Meeting Topic • Join Technology Development • Join our E-Mail Distribution List • Join IEEE, Join an IEEE Society, IEEE Reliability Society Membership

Recent Activities

November 10, 2011:

On Wednesday, November 10 Angelo Scangas, Quality Support Group, Inc. presented “Failure Mode and Effects Analysis, Design & Process – Techniques & Tools,” at Teradyne, Inc., North Reading, MA with 36 members and guests in attendance.



On November 10, presenter Angelo Scangas led an interactive discussion with 36 members and guests around the systematic use of Failure Modes and Effects Analysis as a Risk and Reliability Assessment Tool.

Failure Modes & Effects Analysis (FMEA) is a risk assessment tool designed to identify potential failure modes, determine the associated level of risk per mode, and mitigate the risk to an acceptable level.

This presentation provided an overview of the FMEA, including:

- How to determine the right time to initiate FMEA.
- How to identify and classify potential failure modes.
- How to build a cross-sectional team qualified to perform FMEA.
- The process of evaluating potential failure modes for severity and probability.
- How to prioritize for maximum effectiveness and assure maximum efficiency.

December 14, 2011:

On Wednesday, December 14, 2011 the Joint-Section Reliability Chapter Annual Past Chairs Dinner and monthly meeting was held at Teradyne, North Reading MA with 34 members and guests in attendance. It was a busy meeting with a tasty catered dinner, announcements including the 2012 AdCom Officer Election results, the presentation of a plaque to outgoing chapter chair Ramon De la Cruz, the presentation for the evening on Counterfeit Component Avoidance, and a photo session with all of the past and newly elected chapter chairs in attendance.

2012 AdCom Officer Elections:

The technical portion of the evening started with a review of the chapter accomplishments for 2011 and announcements of the elected officers for 2012. The 2012 IEEE Reliability Joint-Section Chapter (Boston - New Hampshire - Providence) Officer Elections closed on December 9, 2011.

For the 2012 term the AdCom officers are as follows:

– Chair: Daniel Weidman, MIT Lincoln Lab

– Vice-chair: Ramon De la Cruz, Teradyne, Inc.

– Treasurer: Don Markuson, Ember Corp.

– Secretary: Aaron DerMarderosian Jr., Raytheon Company

Ramon De la Cruz, In Appreciation:

As a token of our appreciation the Chair-Elect Daniel Weidman presented a plaque from the Advisory Committee to outgoing Chair Ramon De la Cruz for his three years of service as the Joint-Section Chapter Chair. The presentation may be viewed at http://www.youtube.com/watch?v=geWVHoy6n7Y compliments of Giora Kedem.

Chair-elect Daniel Weidman, left, presented a plaque of appreciation to Ramon De la Cruz for his three years of service as Joint-Section Chapter Chair from the AdCom members.

December presentation:

The presentation by Donald Trenholm, President, Custom Analytical Services, Inc., "Counterfeit Component Avoidance Workshop – CCAW" gave attendees visual access to examples of fraudulently altered devices in order to identify counterfeits at incoming inspection, including:

- Refurbished as well as cloned samples.
- Tips on distinct characteristics that give them away.
- The art of refurbishing these reclaimed devices.
- Primary sources of counterfeit components.

Don Trenholm's presentation on avoiding counterfeit components engaged the audience, included the latest information on domestic legal actions against high-tech counterfeiters, and discussed international trends. Although we did not capture a clear picture of him while presenting, he is seated at the right-most table above on the aisle.

AdCom Chairs:

We share the photo below with thanks for the eighteen-plus years of past and present service as chapter chairs by these eight IEEE Reliability Society volunteers. This does not include their other AdCom positions which have also contributed to the strength of the chapter.

Back Row:
Jeff Clark: 2000-2003 & 2005
Giora Kedem: 1997-1999
Brian McQuillan: 1994-1995
Donald Simpson: 1973-1974 & 1989-1990 ;
Donald Markuson: 1990-1991 & 1995-1996

Front Row:
Daniel Weidman: Chair-Elect 2012
Ramon De la Cruz: 2009-2011
Aaron DerMarderosian Jr.: 2006- 2008

Note: Officer positions changed from academic to calendar years in 2001.

January 2012: No meeting was held.

Local IEEE News

IEEE Milestone in Electrical Engineering and Computing Plaque Awarded to Draper Laboratory for Apollo Guidance Computer Development

On December 13, 2011 the IEEE presented an IEEE Milestone in Electrical Engineering and Computing plaque to The Charles Draper Laboratory for the development of the Apollo Guidance Computer. The Apollo Guidance Computer provided spacecraft guidance, navigation, and control during all of NASA's Apollo Moon missions.

IEEE President Moshe Kam presented the IEEE Milestone plaque to James Shields, CEO and President, The Charles Draper Laboratory. Other IEEE officers at this event included Ramon De la Cruz, IEEE Reliability Society Joint-Section Chapter (Boston, New Hampshire, and Providence) Chair; Bruce Hecht, IEEE Boston Section Past Chair; Edward Altshuler, IEEE Boston Section; Gilmore Cooke, IEEE Boston Section Chair Milestone Committee; Ted Kochanski, IEEE Boston Section; Charles Rubenstein, IEEE Director and Region 1 Chair; Robert Pellegrino, IEEE Region 1 Milestone Coordinator.

The IEEE Milestone Plaque for the Apollo Guidance Computer (AGC) was presented to Draper Laboratory on December 13, 2011. The double-faced plaque was installed at One Hampshire Street in Kendall Square, Cambridge, MA.

Pictured at the right are James Shields, CEO and President, The Charles Draper Laboratory; Ramon De La Cruz, IEEE Boston Reliability Society Chair; Bruce Hecht, IEEE Boston Section Past Chair; Edward Altshuler, IEEE Boston Section; Gilmore Cooke, IEEE Boston Section Chair Milestone Committee; Ted Kochanski, IEEE Boston Section; Charles Rubenstein, IEEE Director and Region 1 Chair; Robert Pellegrino, IEEE Region 1 Milestone Coordinator; Moshe Kam, IEEE President.

Images Courtesy of Draper Laboratory

More information about the IEEE Milestone: Apollo Guidance Computer may be found at the following site:

http://www.ieeeghn.org/wiki/index.php/Milestones:Apollo_Guidance_Computer_(AGC)

In Memoriam

With our first newsletter of the calendar year, the IEEE Boston Reliability Chapter regrets the passing in 2011 of three past Chairs of the IEEE Boston Reliability Chapter, Irving Bosinoff, Charles Saraglow, and Anita Cederholm. May their memory be a blessing for us all, personally and professionally.

Irving Bosinoff:

Irving Bosinoff (also spelled Bosinov) of Lexington, Massachusetts, passed away February 18, 2011. He was the first official chapter Chair for the academic year 1960 to 1961. This was prior to the IEEE formation from the merger of IRE and AIEE.

Irv was a reliability engineer at Sylvania Electronic Systems, in Waltham, MA. Among his contributions, he authored a practical article to determine the most cost effective reliability, “Design Goal for Reliability,” in the Proceedings of the Seventh National Symposium on R&QC (Reliability & Quality Control), 1961. Today, more than half a century after Irv was the first chapter Chair, his legacy continues with an active Boston Reliability Chapter of IEEE.

Charles Saraglow:

Charles "Efstratios" Saraglow of Sudbury, Massachusetts, passed away January 13, 2011. He served as the Chapter Chair during the 1965 to 1966 academic year.

Charlie worked at Raytheon. He was fondly remembered by his former coworkers and IEEE members. The Chapter that he chaired in its infancy continues to thrive to this day, almost fifty years later.

Anita Cederholm:

Anita R. Cederholm, 68, of Shrewsbury, Massachusetts, passed away on Friday, Dec. 16, 2011. She served an officer of the Central Massachusetts Reliability chapter of the IEEE, including the position of Chair during the 1993 to 1994 academic year.

Anita was a Quality Engineer, a Six Sigma green belt, and ASQC certified Quality Engineer. During her career she worked for Motorola, Data General, and most recently for Terumo Medical Corporation. She was also noted for being very active in community organizations, arts, and crafts.

Upcoming Meetings and Events

February, 8 2012:

On Wednesday, February 8th, Andrew Kopanski, ESD and Quality Engineer, MIT Lincoln Labs, will present “ESD Class 0 Protocols” at Teradyne, Inc., North Reading, MA, in a joint meeting with NE-ESDA and Boston SMTA.

Andrew will review the Electrostatic Discharge (ESD) Class 0 program at MIT Lincoln Laboratory and showcase recent measurements taken to protect these devices. These devices are sensitive down to 50V, and processes have been developed for all operations including upscreening, assembly, and final test. At the Class 0 level, using a proven process is just as important as leveraging the correct tools and materials, both of which will be discussed during this talk.

March 14, 2012:

On Wednesday, March 14th, Dr. Vladimir Liberman, Staff Scientist, MIT Lincoln Laboratory, will present "Reliability of Materials under UV Exposure," at MIT Lincoln Laboratory, Lexington MA.

Dr. Liberman will discuss challenges of establishing the right infrastructure for UV-based optical systems, including sources, optics, and supporting construction materials, such as epoxies, for meeting requirements of their respective applications. We will also review UV-based outgassing studies for selecting the most appropriate construction materials to minimize system contamination.

April 11, 2012:

On Wednesday, April 11th, David I. Heinmann will present "A Guide to the Forthcoming Revision of the IEEE 730 Software Quality Assurance Standard," at MIT Lincoln Laboratory, Lexington MA.

Dr. Heinmann will provide a brief overview of changes to IEEE-730-2002 standard on Software Quality Assurance (SQA) where the newest version will coordinate with the four process areas and sixteen SQA tasks in the IEEE-12207-2008 standard "Systems and Software Engineering: Software Life Cycle Processes," providing detailed elaborations for these areas and tasks. Discussion will include the difference between SQA and testing, and cover the annexes in IEEE 730 that provide industry-specific information as well as the relationships with software process approaches such as CMMI, Agile, SPICE, CSQE, PMBOK, and VSEs.

Society Participation

Please check our website periodically for updates on upcoming events! http://www.ieee.org/bostonrel

- If you would like to present a reliability based topic at a future meeting, have meeting topic suggestions, or ideas about how to improve our meetings, we want to hear from you! Please send an e-mail to any of the AdCom members, or go to our website and click on Suggest a Meeting Topic.

- To participate or provide input to chapter technology development activities, sign up to become a TDC (Technology Development Committee) participant using our website by clicking on Technology Development.

- You can also be added to the chapter e-notice distribution via our website by clicking on Subcribe to E-Notices, or send a request to dermarderosiana@ieee.org (Vice-Chair, notices, and registration).

Acknowledgements:

Photos by Aaron DerMarderosian, Raytheon Company, and Ramon De la Cruz, Teradyne, Inc.
Photos by The Charles Draper Laboratory where specified.
Editing by Mary A. Jones, Analogic Corporation
Website by Jeff Clark, The MITRE Corporation