August 2019 Newsletter  
The IEEE Reliability Society  
Joint Section Chapter: Boston - New Hampshire - Providence  
May 2019 – July 2019  
http://www.ieee.org/bostonrel

As we close out the summer break we look forward to a busy calendar of Reliability Society meetings. Take a look at our plans for the beginning of the year for a number of joint society meetings and plant tours. And please contact us if you have any suggestions or would like to present at one of future meetings.

I recently read that the National Highway Traffic Safety Administration (NHTSA) has received over 400 reports of newly developed automatic braking systems deploying suddenly when there was no evidence of danger or failed to engage as expected in the presence of a threat. These systems are intended to complement the driver not to be an autonomous driver however they may provide drivers with a false sense of security. Early systems will no doubt be revised and modified to complement drivers as did early power steering and braking systems have evolved so that the "feel" fit the vehicle size and driving environments. Remember when power steering was intentionally overboost to give you that nice pinky-finger feeling however you lost the feel of the road. Larger American cars tend to feel softer and more forgiving while European models feel tighter and much more responsive.

Hopefully the new accident avoidance systems will help reduce auto accidents and reduce accident fatalities that have been running over an astounding 30,000 per year since 1950!

As technology, software and AI becomes more imbedded in our lives for better or worse we need to keep an eye on their impact on product reliability and user experience.

Regards  
Kenneth P Rispoli  
IEEE Life Member  
IEEE Reliability Society AdCom Member ’16-‘19  
Chair, IEEE Reliability Society Boston Chapter joint with Providence, RI and New Hampshire  
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Recent Activities:

May 8, 2019  
“An Introduction to Use Class 7”  
Adam Bahret, Apex Ridge Reliability

June 12, 2019  
“High Power Electron Beam Reliability: A Federal Case”  
Dan Weidman, MIT Lincoln Labs

Upcoming Events:

Sept 11, 2019  
“Introduction to Thermal Imaging using Infrared Technology”, Jeff Steele FLIR Systems

Oct 16, 2019  
Joint IEEE Reliability Society and ESDA meeting at BAE Systems, Nashua NH

Nov 6, 2019  
Joint IEEE Reliability Society and SMTA meeting at Raytheon Co, Andover MA
Reliability Society Sponsored Conferences

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Society Membership includes:
- Society Newsletter (electronic),
- IEEE Transactions on Reliability (online),
- IEEE Reliability Society Conference Digital Library (online), and
- IEEE Reliability Society Resource Center (online).
Recent Chapter Activities

“An Introduction to Use Case 7”  May 8, 2019
Adam Bahret, Apex Ridge Reliability Consulting Services

PRESENTATION: This presentation discussed the concept of using the “Use Case 7” principal to improve product robustness. This principal looks to define a use case, or set of use cases, that would normally be considered too extreme to be viable design input. The result is often discovering modifications for base use cases or identifying all the little percentages of outlier use that add up to a noticeable failure rate in a large population. Check out online article “Introduction of Use Case 7” that gives a full introduction to the method (apexridge.com/introduction-of-usecase7)

AUTHOR BIO:  Adam is the founder of Apex Ridge Reliability Consulting Services. He is a Mechanical and Electrical Systems Reliability expert with 20 years of experience in product development across many industries. He has worked extensively with reliability program strategy, accelerated testing methods HALT/HASS/QALT/ALT, system reliability measurement and improvement, predictive analysis, education programs, and organizational culture and practices. He has specialized experience in medical, robotics, consumer electronics/appliances, Ion Implantation, and Diesel Systems. Adam has an MS in Mechanical Engineering from Northeastern University, is an ASQ nationally certified reliability engineer and a member of IEEE. More information on Adam and Apex Ridge Reliability can be found at www.apexridge.com
“Reliability of a High-Power Electron-Beam Accelerator: A Federal Case” June 12, 2019
Daniel J. Weidman Ph.D. – MIT Lincoln Labs

PRESENTATION: High-power electron-beam (e-beam) accelerator facilities process many types of products for many applications, such as sterilizing medical supplies, changing the color of semi-precious gemstones, and recycling Teflon insulation from wires. Maintenance of an e-beam accelerator requires a full-time effort. Basic introduction to e-beam accelerator physics, engineering, and applications was presented. Dan then described his experience as an expert witness in a case in which the reliability and maintenance of an e-beam accelerator was the subject of a lawsuit in Federal court.

AUTHOR BIO: Daniel J. Weidman, Ph.D. - Dan received his Bachelor’s degree in Physics from MIT in 1985, and Ph.D. in Electrical Engineering from the Univ. of Maryland, College Park. He has authored or co-authored more than 20 journal articles and technical reports in publications and more than 60 conference presentations. He started working with electron beams more than 30 years ago, as an undergraduate studying free-electron lasers and, as a grad student, e-beam propagation through air.

Experience in e-beams:

- Food preservation, water remediation, and platelet shelf-life extension at Science Research Laboratory as a Senior Research Scientist
- Building and testing composite-curing e-beam systems at Electron Solutions, Inc. and then installing them at NASA MSFC and Boeing Radiation Effects Laboratory
- Scanning electron microscopes at KLA-Tencor, as a Systems Design Engineer
- Metallization of semiconductor wafers by physical vapor deposition at NEXX Systems, Reliability Engineer
- e-beam emitter design and manufacturing at Advanced Electron Beams, as the Principal Process Engineer

Dr. Weidman has since been working at MIT Lincoln Laboratory as a member of the Technical Staff.
Advisory Committee (AdCom) Members 2019

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Chapter Seeks Volunteers

We are interested in having you help out as a volunteer contributing as much or as little as you would like. We have a good team of volunteers that help us keep things going, so if you would like to join us, there is probably ample opportunity to choose how you would like to contribute. Email or talk to any of us at the next monthly presentation or attend one of our Advisory Committee meetings.

For updates on upcoming events: http://ewh.ieee.org/r1/boston/rl/events.html.

Readers can contact chapter newsletter editor Ken Rispoli (ken-rispoli@ieee.org) with any comment/suggestion or if interested in contributing to our next issue. Thanks.

The IEEE Reliability Society Joint Section Chapter
Boston - New Hampshire - Providence
Newsletters available at the following link:

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or copy and paste the URL below on your browser

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