

Reliability Society

NEWSLETTER

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President's Message



Dear Reliability Society Members,

Year 2006 has left us, and we have now embraced 2007. With the dawn of a new year, we both begin a new slate, and we also continue to work the carryover items from our old slate. I am happy to report that we held an excellent January 07 ADCOM kickoff meeting in conjunction with RAMS. I was also privileged and participated in a useful IEEE Technical Activities meeting which was held in February. I will update you on both of these outcomes in this newsletter, but first I would like to say a few words regarding the open items from our executive committee elections, some sad news regarding a long standing member of our ADCOM, and a conference update.

In my last newsletter, I updated you on the RS 2007 elected officers. I am now happy to report on the entire officer slate, including the officer appointees whom have been ratified by the ADCOM. So, once again: Vice President of Technical Operations, Dr. Samuel Keene, and our newly appointed Asian executive, Dr. Shuichi Fukuda; Vice President of Publications, Dr. Christian Hansen; Vice President of Membership, Mr. Scott Abrams, Vice President of Meetings, Ms. Marsha Abramo, and new appointees: Secretary, Mr Alan Street, and Treasurer, Mr. Richard Doyle.

The entire ADCOM was saddened by the death of Mr. Dave Franklin, a long time Reliability Society member, Newsletter editor, IRPS Board of Directors Member, Reliability Society Historian, and loving husband and father. We devoted our annual dinner to Dave's family, where his son Marc reminisced with us and his family about his fathers fulfilling life. We all left this dinner both touched and honored to have been blessed in knowing and working with Dave throughout his many years of service to IEEE and the Reliability Society. At the end of the day we all seemed to be saying this is what it is all about, people working together for a common theme, and enjoying the many roads we have shared and continue to share together. If you would like to drop the family an e-mail please feel free to do so. Marc Franklin's e-mail address is: marcfvp@yahoo.com.



The IRPS, International Reliability Physics Symposium, will take place in Phoenix starting on April 15, 2007. To register, please navigate to www.irps.org. The IRPS concentrates on Semiconductor Physics of failure.

The IRW, Integrated Reliability Workshop, is presently accepting papers for its' fall conference, and one can submit a paper through www.iirw.org. The IRW also concentrates on Semiconductor physics of failure, in an informal collaborative workshop format.

The RAMS, Reliability and Maintainability Conference took place in January '07, and will again take place next January 08, www.rams.org. The RAMS general chair in 2008 is Dr. John Healy, who is also an RS ADCOM member. RAMS concentrates on the Reliability and Maintainability discipline. SIRI focuses on the theory and practice of Systems Integration with special emphasis on the orderly and reliable introduction of emerging technologies



The SIRI, System Integration and Reliability Improvements took place in December '06, and was the inaugural kickoff of this event, co-sponsored by the Reliability and System, Man and Cybernetics societies. This was the first technical conference ever held in Vietnam. SIRI will take place biannually, the next one will be in 2008. Look on the RS home page for details as they are made available. The General Chairman in 2008 will be Dr. Samuel Keene, and ADCOM member, and present VP of RS Technical Operations.

Bill Tonti and Sam Keene with Prof. Dr. Nguyen Huu Duc

These conferences as well as all of our other sponsored IEEE RS conferences are managed by Ms. Marsha Abramo (mabramo@us.ibm.com), who would like to hear from you regarding new and upcoming conference venues. During our ADCOM, we have formed core teams under each VP, where each team will work with a VP to fulfill ongoing activities. Conference management, sponsorship, and funding is a large task where Abramo's team is fully engaged.

The idea behind forming these teams is that no venture shall be too small or for that matter too large that a team cannot handle the item, and so that a VP is not overwhelmed.

I'll now turn towards the highlights of our ADCOM meeting:

We discussed initiating under the leadership of Scott Abrams (sabrams@omnicongroup.com) a "Reliability Hall of Fame", in line with a motion that was past a few years ago. If you have ideas concerning this please drop Scott a note.

Last year we conducted two student outreach events, one held at the University of Tennessee Knoxville, and one held in Italy in conjunction with the Robotics and Automation Society. This program is under evaluation for 2007, and we presently plan student outreach events at Eastern Washington State University (June 2007) and StonyBrook University (September 2007).

We spent quite a bit of time organizing into the VP aligned teams and then taking a look from the inside outward of what these teams might approach in 2007. Here is what the teams stated, and will be the subject of the April ADCOM meeting:

Membership:

- Keep being Dynamic and Agile. Adopted the slogan: "Value". Individual value provided by any society is limited, which makes it hard to convince people to uniquely join RS. Identify the value items we presently have. Identify other items we can do to add value for members. In the end, market / advertise these values. Some ideas:
- Continued support of our chapters. They've put in lots of time, have lots of contacts, and are the RS ambassadors. Provide RS "Member Only" benefits – Webinars, tutorials, conference and seminar discounts (which is greatly helped if there are quality conferences and seminars to attend). Synergistic with Tech Ops generated material.
- Marketing ideas - Web links, reciprocal links in other society's web sites, mail lists from financially supported conferences. Data mining from SAMIEE database. This is to find people with reliability interest within the IEEE who are not members of the Reliability Society.

Meetings:

- Extend our existing successful meetings. One suggestion is to investigate a Prognostics and Health Management conference (Dennis Hoffman is championing this). Also Tech Ops meetings possibly as adjuncts to AdCom meetings are synergistic. Phone and Web meetings are potential venues.

Publications:

- Efforts, led by Jeff Voas and Bret Michael, include development of our new Trust magazine, with John Viega and John Healy serving as associate editors (software and telecom). Significantly increase the use of our website to provide content delivery and communication. John Healy will serve as a newsletter understudy for Lon Chase. We recognize the need to overcome technologically limiting hurdles in the way of content delivery to RS members.
- Way Kuo, the EIC of Transactions on Reliability, will summarize the articles that are upcoming in the newsletter, thus providing a technical read-ahead synopsis.

Tech Ops:

- Mapped Tech Ops into smaller Focus Areas. The deliverables are member / non-member content, including: FAQs, Hot Topics, Standards, Best Practices, Guides, and Lessons Learned. Make better use of communication tools, including teleconferences, webinars. One hot area is Design For Reliability. Data mining from SAMIEE could also be useful. As a first action, Tech Ops has completed its broad view of Reliability Technology and has published this in the "Annual Technology Report". This will be posted on the RS web site and made available to RS members.

Dr. Robert Loomis agreed to fill the Historians position. As you recall, Bob is also chairing the search for recipients of the Reliability Society Scholarship. We were pleased in awarding Ms. Kellie Schneider from the University of Arkansas our first RS scholarship. Please visit the RS website to apply for this year's award.

We plan to place the five EXPERT now reliability module titles on our web page, and to open the call for members to produce additional modules in 2007.

I'm now switching gears and providing a short bullet synopsis of the IEEE February Technical Activities meeting:

Discussed the current GOLD (graduates of the last decade) programs in Societies, including suggestions for expanding the number and scope of these programs. The IEEE Reliability Society has an active IEEE ADCOM Gold member, Scott Tamishiro.

Discussed the New Initiative to increase the representation of Women In Engineering. This is exciting, and RS has a member at large, Dr. Lisa Edge who is assigned to this committee. Lisa is also a GOLD member.

Approved revisions to TAB Operations Manual Section 4.23 - IEEE Electron Devices Society Field of Interest Statement. The Reliability Society supported the EDS FOI change, and as you may already know that we jointly sponsor technical conferences with EDS.

Approved the IEEE Intelligent Transportation Systems Society's new periodical proposal (phase two approval - 2008 launch) for IEEE Intelligent Transportation Systems Magazine. It was interesting for the Reliability Society to view this process as we plan to also submit a phase one Trust Magazine proposal in June. Key elements of the proposal are the magazine's scope and its business plan, both of which RS is presently working.

Approved that the IEEE Computer Society and the IEEE Communications Society will work expeditiously to combine the proposed "Transactions on Services Computing" with the existing "IEEE Transactions on Network and Services Management" into a 50%-50% partnership. The tentative new title of the periodical is, nominally, the "IEEE Transaction on Network and Services Management and Computing." (This is concurrent with the following withdrawn motion.. It is important to note, Dr. Jeff Voas of the Reliability Society was very useful in helping craft this mutually beneficial proposal.

Approved the TAB Society Review Committee report following the IEEE Robotics and Automation Society, RAB/TAB Section / Chapter Support Committee, and TAB Management Committee reviews. It is important to point out our student outreach in Italy was affiliated and requested by this society.

All for now, perhaps I will see you at the IRPS on April 14'th during our ADCOM meeting at the downtown Hyatt.

Regards,

Bill Tonti

IEEE Reliability Society President

<mailto:wtoni@US.IBM.COM>

From the Editor

Welcome to the IEEE Reliability Society e-Newsletter. An issue will be published quarterly and published to the Reliability Society website.

We welcome your articles, comments or questions. All RS Newsletter inputs should be sent electronically to l.chase@ieee.org.

February Inputs due January
May Inputs due April
August Inputs due July
November Inputs due October

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Society News

The Reliability Society annual awards banquet was held on January 20th in Orlando FL. (in conjunction with the quarterly officer meeting).

The evening was dedicated to the memory of Dave Franklin. Dave was a long time member; he was the newsletter editor for many years and society historian among other activities. Dave's wife and other family members were in attendance. Many of the members present spoke fondly of working with Dave and his dedication to the Reliability Society over many years. Dave's son Marc spoke and reminisced about his father and memories of his love for the reliability society.



Bill Tonti introduces Marc (Dave Franklin's Son)

Dave was posthumously presented a Reliability Society Service Recognition Award for long term contributions to the society and its administration. Many of Dave's family were in attendance to receive the award.



Dave Franklin's family with Society Presidents (current and past)

Guest speaker for the banquet was Dr. John Viega, chief scientist for McAfee. He delivered an enlightening lecture regarding software vulnerability and security. John will also be joining the ADCOM.

The newly elected society officers and Adcom members were asked to stand.

New Society Officers



Suichi Fukuda (Asian Exec), Christian Hanson (Pubs), Scott Abrams (Membership), Sam Keene (Tech Ops) and Bill Tonti (President).

Newly elected Adcom members stood.



Bob Stoddard, Bret Michaels, Jim McLinn, Dennis Hoffman, Lou Gullo, John Healy, Bill Tonti (President)

The Reliability Society awards were given as follows:

A Reliability Society Lifetime Achievement award was given to Dr. Zigmund Bluvband for major contributions as a leader and innovator in the field of reliability engineering.



Dr. Zigmund Bluvband receiving award from Dennis Hoffman and Tom Fagan

The Reliability Society 2006 Engineer of the Year award was given to Alfred DePlessis for major contributions in reliability modeling, reliability assessments, reliability improvement studies and fault analyses.



Alfred DePlessis award presented by Tom Fagan

The IEEE Reliability Society is pleased to announce the winner of it's first student scholarship. Kellie Schneider, a Ph.D. student in Industrial Engineering at the University of Arkansas, is the winner of the \$2000.00 scholarship. Kellie's impressive credentials include research published in the IEEE Transactions on Reliability, both a moderator and a presenter at RAMS, publications in several other technical journals, selection as both the Best Undergraduate Researcher and the Best Graduate Student, a teaching assistant, and numerous other accolades. She is truly an outstanding choice to inaugurate our scholarship activity. To learn more about the RS Scholarship, including an application, visit the IEEE RS homepage.



Kellie Schneider scholarship is presented by Bill Tonti and Bob Loomis

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Transactions on Reliability (T-REL) - New Issue

The March 2007 issue will be arriving to your door soon, and it is a full issue of 180 pages. This issue contains a unique editorial we hope you will find interesting, a large set of excellent papers, two book reviews, and a list of reviewers from the past year, to whom we are most grateful.

The editorial is the first by the Managing Editor, Jason W. Rupe, and is an analysis of a survey given to IEEE Editors attending the 2006 Editor's conference.

We also have several papers on network reliability, on such topics as flow networks, k-out-of-n systems, stochastic and simulation models, and phased-mission systems. We also have three papers on reliability testing, and one on redundancy allocation. These are followed by three papers on reliability distributions ranging from linear combinations, and stress-strength models. We also have a paper on sampling, and data analysis of censored data in competing risk models. The final three papers are applications in the areas of power systems, attach strategies, and diesel engine cylinder liners.

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Reliability Society Scholarships

The IEEE Reliability Society is pleased to announce scholarships to graduate students and upper division undergraduate students. Up to five \$2000 scholarships will be awarded each year to students who have demonstrated achievement in their studies and who have taken at least one course with reliability content.

"We are extremely pleased with this outreach effort, and hope that these scholarships encourage students to take an interest in Reliability Engineering and to understand that reliability is an overarching factor in whatever they may be studying and what they will do in their career. If you are a student, and have taken a course with reliability content which sparked an interest in reliability, I encourage you to apply for this scholarship" said Bill Tonti, the President of the IEEE Reliability Society.

Detailed requirements and applications for the scholarship are available [here](#) and on the Reliability Society website (<http://www.ieee.org/portal/site/relsoc/>) and through school financial aid offices.

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Reliability Education Initiative

On line web reliability education (CEUs)

IEEE has launched an innovative new product line called IEEE Expert Now to help IEEE members and customers meet their continuing professional development needs. IEEE Expert Now is a collection of one hour long online learning courses. Gleaned from the best IEEE conference tutorials and meetings taking place around the world, the IEEE Expert Now collection currently includes more than 50 titles based on IEEE fields of interest including reliability. Available as a collection to company subscribers who purchase a site license, IEEE is planning to roll out sales of individual courses via Xplore to IEEE members by the end of March 2007. IEEE members will be able to purchase each course for \$69.95. Each purchase allows the subscriber unlimited access to the course for 30 days from date of purchase. All courses include a quiz at the end. Those who pass can earn 0.3 continuing education units (CEUs), the credits needed to maintain professional licenses at no additional cost. The Reliability Society has sponsored the development of 5 courses (listed below) that will be available for purchase to individuals soon.

1. "Design for Six Sigma" by Samuel Keene ([Module Description](#))
2. "Molecular Electronics, Part 1: Potential and Applications" by Curt Richter
3. "Molecular Electronics, Part 2: Molecular Electronic Device Fabrication and Characterization" by Duncan Stewart
4. "Reliability Analysis of Computer Based Systems Using Dynamic Fault Trees" by Joanne Bechta Dugan
5. "Planning and Performing Failure Mode and Effects Analysis on Software" by Nathaniel Ozarin ([Module Description](#))

A free member trial is available until individual courses can be purchased by IEEE members. To access the trial visit, www.ieee.org/expertnowieee and sign up under "Free Trial for IEEE Members". More courses are being developed and added to the collection throughout the year. To access the Expert Now course catalog, visit http://www.ieee.org/web/education/Expert_Now_IEEE/modules.html. For more information on Expert Now, contact Tara Gallus at t.gallus@ieee.org or Marilyn Catis at mq.catis@ieee.org

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Society Solicitations

The IEEE Reliability Society solicites nominations for the following annual society awards. Click here for more information.

Reliability Society AdCom Candidates Sought for 2008/2009/2010 Term

The IEEE Reliability Society is seeking candidates for serving on its Administrative Committee (AdCom) for the three-year term that spans 2008/2009/2010. For clarification, the AdCom manages the operation of the Reliability Society. The candidates need to be a member of the IEEE Reliability Society and should have both technical and managerial experience. Serving on the AdCom requires attending periodic AdCom meetings (max of quarterly) and participating in one or more of the following areas of Reliability Society committee activities:

- Technical Operations,
- Meetings,
- Membership, and/or
- Publications.

If you are interested in running for election to become an AdCom member, please apply to Dr. Jeffrey Voas, your Society's Junior Past President at JEFFREY.M.VOAS@saic.com by no later than 1 July, 2007. Required information for submittal.

Reliability Society Engineer of the Year Award for 2007

The IEEE Reliability Society is soliciting nominations for its Reliability Society Engineer of the Year Award for 2007. This award is aimed to recognize key contributions to the Reliability profession within the last few years. Nominees will be considered according to the following criteria:

- Reliability Contributions
- Reliability Technical Contributions
- Reliability Management Contributions
- Reliability Publications
- Contributions to Reliability Education
- Professional Services to IEEE
- Reliability Society Service
- Other IEEE service positions

The last date that nominations may be submitted is 1 October 2007. Send the nominations to Dr. Jeffrey Voas, your Society's Jr. Past President, at JEFFREY.M.VOAS@saic.com. Click for more information on submittal.

Reliability Society Lifetime Achievement Award

The IEEE Reliability Society is soliciting nominations for its Reliability Society Lifetime Achievement Award for 2007. The IEEE Lifetime Achievement Award was created to recognize "sustained" outstanding contributions to the field of Reliability Engineering. Typically the contributions will span the career of the individual, usually in excess of "25 years". The contributions meriting this award must clearly be within the area of Reliability Engineering. Nominations must be submitted by a peer or supervisor of the nominee. Self nominations or nominations from a member of the IEEE Reliability Society Nominations and Awards Committee will not be accepted. The nomination package should consist of a one-half page biography of the nominee plus up to four pages of concise descriptions of the nominee's lifetime accomplishments / achievements. Nominations may be submitted until the end of September 2007. Send the nominations to Dr. Jeffrey Voas, your Society's Jr. Past President, at JEFFREY.M.VOAS@saic.com.

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Chapter Activities

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Technical Operations

Technical Committee Reports

Coming in future issues

Society Technical Committee Recruiting Notice

The IEEE Reliability Society national organization is recruiting technical committee members and possibly committee chairpersons for the following technical committees: Software Reliability, System Safety Technology, Human Interface Technology, Mechanical Reliability, Standards & Definitions, CAD/CAE, Microelectronic Technologies, Industrial Systems, Sensor Systems, Information Technology & Communications, Consumer Electronics, International Reliability, Aerospace & Defense Systems, Testing and Screening Technology, Automotive Systems, Energy Systems, 6 Sigma Reliability, Medical Systems, Reliability Design, Warranty, Nuclear Reliability, Maintainability Technology, Assurance Technology, and Emerging (New) Technology.

The basic work for each technical committee consists of developing plans associated with the reliability aspects of the respective field, both present day tactical issues and long term strategic direction. This is accomplished through four short quarterly written reports that are edited and compiled by the reliability society technical operations editor, and placed in the Reliability Society newsletter, which can be found on our [Web site](#). Additionally, an annual written assessment of the technology in the committee's area of interest is requested. This Annual state of Reliability Technology Report is published world wide, and receives a high level of readership and interest from communities that extend well beyond the IEEE and the Reliability Society. It has become the societies cornerstone publication.

Other work may include the development of standards, guidelines and educational tutorials through the society infrastructure. Working in one of the technical committees is an excellent opportunity to "network" and keep your knowledge current. If you are interested, please contact me and send a short biography with an indication of your experience in the field of interest.

If you do not have a direct interest in either of the above opportunities, please pass this to a fellow reliability, hardware, software, or systems engineering professional who might have an interest.

Thanks for your consideration.

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Announcements

[1st Annual IEEE Systems Conference 2007](#)

[International Symposium on Consumer Electronics \(ISCE\) 2007](#)

[International Computer Software and Applications Conference \(COMSAC\) 2007 - Call for Proposals](#)

[Summer Safety and Reliability Seminar \(SSRS\) 2007](#)

[ESReDA-ESRA Seminar](#)

[International ESD Workshop \(IEW\)](#)

[ISSAT International Conference \(MCSE\) 2007](#)

[International Workshop on Testing Emerging Software Technology \(TEST'07\)](#)

First IEEE International Workshop on Safety of Systems <http://www.ieeesystemscouncil.org/conferences.html#wss>

Second International Conference on Systems of Sstems Engineering <http://www.ieeesose2007.org>

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Derating Guidelines

Jim McLinn

10/31/06

Derating Guidelines are often the topic of concern among designers. At times, such guidelines appear to restrict the ability to select and use components in a circuit. Why do companies continue to employ them? Figure 1 is an example of a derating curve. There are as many curves as types of components.

These guidelines were established many years ago; in fact the earliest such examples date from the 1960s. NASA and other military suppliers pioneered the use of component derating guidelines as one way to enhance the reliability of systems. Other tools that began in the same timeframe included Failure Mode Effects Analysis, Sneak Circuit Analysis, Fault Tree Analysis, Criticality Analysis and Accelerated Life Testing. All have proved useful over the interval. So why is there still concern about derating? The theory is that derating circuits **make them more reliable**. In fact, it has been suggested that circuit performance may also improve. In one major U.S. corporation, the derating guidelines were created by an Engineering VP in the early 70s and were considered the outgrowth of good design practices. These were in use for 30 years before any updates. Guidelines can be created in a variety of ways and may have a variety of purposes. Why create and use them at all for derating?

First, derating guidelines *are not requirements*. That is often the first error when discussing them. When finding a circuit or component that appears to violate some derating guideline, the appropriate next action is to ask "Why would this situation be a violation of the guideline?" This normally means one has to ask a number of deep questions about the stresses, the nature of the design, the customer use environment and the component itself. In other words, "investigate further to gain a better understanding" should be the outcome of an apparent derating violation. The best follow-up is a group discussion that comes to a collective decision about the circuit and application of the guidelines. It may be that the apparent guideline violation is a result of a multiple (3 or more) worst-case stack-up situation. One real example of this concerns the operating voltage on a ceramic capacitor. The recommended maximum operating voltage, 40V, (50 V with an 80% derating) may exceed the recommended guideline voltage by a small amount for a short period of time say up to 84% for several seconds. This is permitted and called a surge or transient event. Some systems even identify derating for this situation. A deeper investigation determined that there was a higher worst-case condition (about 92% of rating) that occurs as a result of a rare start-up event. Even if there was a 120% voltage condition for a few microseconds, this might be acceptable for a ceramic capacitor. Normally this still wouldn't be a problem and nothing may change as a result of collective team decision making. The team has rendered some "due diligence" to the circuit design and found the conditions acceptable. Often the designer will change the circuit anyway, since the deep dive into the circuit performance discovered that was unknown and undesirable to him.

Consider another example; in this case, a small negative transient voltage is applied to a tantalum or electrolytic capacitor at some condition of a circuit. This is often considered unacceptable, as it may lead to a rapid degradation of the capacitor. At this point, the team investigates further to obtain all relevant data and then discuss the situation fully with the design engineer. Again, a collective decision can be made and usually the problem is promptly fixed. Remove the cause of the transient negative voltage, or change the component to one that can withstand the negative voltage.

One tricky derating discussion concerns the derating of the operating frequency of Integrated Circuits. Standard digital and analog components may have a recommended operating range created by the manufacturer. Why derate this operating range? Isn't it safe and acceptable as is? The answer is that operating frequency need not be derated when a specified range is stated by a manufacturer and the **range is guaranteed** by the supplier. When the IC has a "suggested operating range", that is, not assured through a detailed specification, then derate this

operating condition. The purpose of the frequency derating guideline is to encourage detailed questions about what is a reliable operating condition and identify when supplier uncertainty exists. A real example is of Company A, who desires to sell a high speed digital CMOS circuit running at 500 MHz. Will “off the shelf” digital devices run at this frequency? The answer depends upon the fan-out employed, and the load present. Consider not only the mating components but also the printed circuit board traces (intrinsic capacitance and inductance within the circuit itself), the operating voltage present and the internal temperature. Lastly, reliable operation may also depend upon the manufacturer’s lot-to-lot wafer fabrication process that varies. How can this be you might wonder? With smaller and smaller cell sizes, intrinsic metallization resistance or capacitance on the wafer plays a bigger role in limiting upper frequency operation under load. Manufacturers may or may not fully describe this. Lower frequency limits and lower load may also be set by intrinsic leakage in specialized drive circuits. You can’t go wrong by asking questions here.

When dealing with custom ICs, the situation may be worse. One ASIC manufacturer might give a maximum operating frequency that really represents a true absolute maximum while another might use a hidden 25% margin when defining their maximum operating frequency. The second manufacturer allows for lot-to-lot variation. How can you know what is really happening? Violating a derating guideline is a reason to dig deeper and ask the key questions. This inquiry becomes part of the good design practice and leads to improved function of circuits. A few key, high-risk circuits usually control overall performance of a system.

The guideline violation leads to identification of potential problem parts and starts the critical discussions. Components that have difficulty meeting the guidelines may have a strong negative influence upon system performance and reliability. The project team should investigate the few apparent violations and make the best selection of operating speed, power dissipated, available cooling and circuit performance. Reliability, project costs, potential warranty costs, time to market and corporate image also become part of a series of trade-off discussions that should be considered by the project. Detailed examples follow; note the **exceptions** as well as the guidelines.

Digital ICs – Many of the common digital ICs do not directly specify a “clock frequency” in their absolute maximum ratings; rather, they have minimum turn-on and turn-off times identified for input and output stages. Maximum operating frequencies may be inferred from these. Exceptions do exist and a few are listed. Look at every situation in detail; remember that general guidelines always have exceptions

Exception one might be microcomputers and similar devices that are driven by external clocks, resonators or oscillators. The operating of microcomputers tend to have practical input and output limits (I/O) that are due to I/O capacitance load, circuit operating temperature, operating voltage, the quality of I/O signals employed and limits set by the printed circuit board itself. Reason: when I/O loads change or internal temperature rises, the performance usually suffers. Don’t derate the microcomputers clock signal; normally the signal integrity considerations usually have already identified the maximum frequency practical for the situation. Look at this with caution in each situation.

Exception two might be some high speed digital devices or memories. Here, various propagation delays, both minimum and maximum, at specific load conditions and temperatures are usually identified. With CMOS, ECL or other technologies, the load, temperature or operating voltage usually become the key factors for limiting the operating frequency to a number below the maximum possible identified in the specification. Some might argue that the recommended upper limit of 80% of absolute maximum frequency is already too high and not realistic. Designers usually know this and usually take it into account. The designer should review each situation carefully when there is an apparent violation of a frequency guideline.

Exception three might be microwave (RF) applications, typically above 1 GHz. For high frequency ICs, a range (such as 2 to 12 GHz) is typically provided in a device specification. The maximum frequency may be subject to load, operating voltage and temperature constraints as with lower speed digital devices. These RF devices often end up being similar to regular digital devices except they are more constrained by printed circuit board limits, circuit reflections and

termination methods. Apparent frequency violations should still be covered by team discussions. These often result in intense study and careful planning for performance, longevity and function at high speed.

ASICS are usually similar to digital ICs since they represent custom functions, have fixed design output structures and usually have fixed operating conditions. The worst-case internal load condition usually determines the maximum clock speed. These internal limits are then modified by operating temperature and other factors such as operating voltage. ASICs may have exceptions to these general statements and these again should be the subject of team discussions. One ASIC, I am familiar with, failed HALT at 45C at nominal conditions. The investigation revealed that the manufacturer had used an incorrect program to route the internal ASIC paths. It would have become a major field problem, had it not been caught early by stress tests.

Components such as **FPGAs** and **gate arrays** are usually not so simple. They may come in a variety of different groups running from standard cells to a variety of custom cells. Many of the devices tend to be well understood and so are treated like digital ICs. Their speed is limited by the worst-case functions and/or processes included in their design or by the circuit. It is not unusual for a chip capable of 500 MHz when lightly loaded and using short internal paths. When loaded as a customer might employ it, the FPGA may actually be running closer to 200 MHz and limited by the selection of internal functions to a slow path through the FPGA. The more functions selected, the slower the chip usually runs when compared to the absolute maximum which is usually based upon a minimum path. Many chip designers also watch the loads carefully and ensure that the signal integrity and performance remain despite these variables. A close relationship with the manufacturer may identify the expected maximum frequency at the range of loads. Published "generic frequency estimates" may really represent the highest speed possible under conditions of the most favorable paths with almost no load. Performance is usually one key item for many FPGAs. Limits such as self-heating (power, speed issues) and signal integrity or output signal quality are also present. A 500 MHz, 10W device might achieve this speed only at reduced power and light load. In the more normal circuit, it would have to be run at a lower frequency (perhaps 300 MHz) with power also limited by case temperature. What does a derating for frequency mean here? It is part of a system wide series of trade-offs. Sometimes the trade off can be made to preserve the high speed, but the load, power and operating temperature usually suffer. The internal operating temperature limits the useful life and operating reliability of any FPGA. The heat generated can sometimes be so large that solder can be softened and the chip "fails" prematurely. The other problem is that the internal temperature runs so hot that the life gets shorter than acceptable. This could be estimated as a few years, instead of the desired 10+ years.

Relays – be they mechanical, reed relays or solid state optoFET relays all may have derating guidelines. In the case of mechanical and reed relays, there are limits to voltage and current that help extend the cycle life. Normally cycle life for these relays could be less than 10 million operations. With derating, they could reach 30 to 50 million. Solid state relays may be the solution in some situations. They are long lived, typically over 500 million cycles, but are subject to current and power limits. In addition, they have some degradation failure modes, so circuit application needs to be considered as well. One circuit limit is leakage current and a second is intrinsic capacitance.

Performance is important in any engineering trade-off, but so is project cost, reliability, time to market, quality, maintenance requirements and warranty costs. All are part of the trade-off decision. There is really a balance here. Improving one item often impacts the others negatively. That is, for a very short time to market, project costs go up and performance, reliability may suffer. Attempt to maximize performance and the other factors may suffer. It is the combination of all that needs to be maximized and that is sometimes difficult.

Go to any website and google the words derating guidelines. Here you can find a variety of "ready made" derating systems that can be tailored for your own company. There are Mil-Std 975, Mil-

Std 1547, JPL-D-8545, MSFC-Std-3012 and an RAIC issued guide to name a few. Study these with care before adopting them.

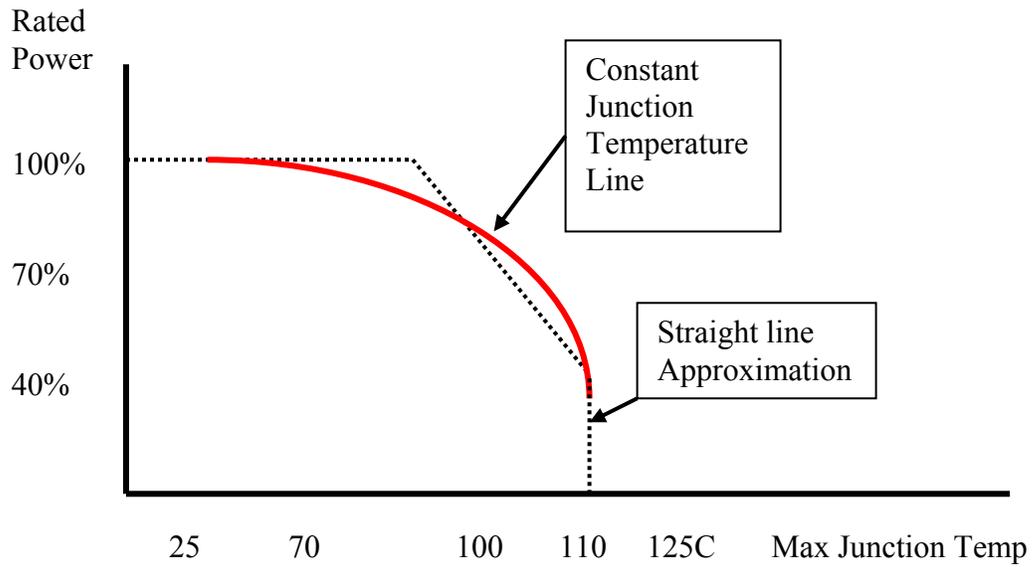


Figure 1 – Power versus Junction temperature derating



The IEEE Reliability Society Scholarship

<http://www.ieee.org/portal/site/relsoc/>

Description:

This scholarship recognizes active students who are members of the IEEE and who demonstrate promise in their academic and/or professional Reliability Engineering accomplishments.

Prize:

Multiple \$2,000 scholarships are available per year.

Eligibility:

Full-time Graduate Students, Seniors, and Juniors in degree programs in engineering, computer science, or other well-defined reliability-related field who are active members or student members of the IEEE. At least one course in Reliability Engineering or closely related field should be completed. Minimum overall grade point average should be 3.0 for undergraduate students and 3.5 for graduate students.

Basis for Judging:

- Involvement in IEEE activities – 30%;
- Academic achievement (with preference given to those who demonstrate excellence in reliability) – 40%;
- Extracurricular activities related to your academic/professional interests – 10%; and
- Letter of evaluation by at least one of the instructors who taught you a course with reliability engineering content – 20%.

Deadline:

Multiple scholarships will be awarded each calendar year. Submission deadlines are:

- Summer Term – April 1st
- Fall Term – July 1st
- Winter Term – November 1st

Note: All material must be received by the submission deadline.

Submission Requirements:

- The IEEE RS Student Scholarship Application;
- An essay (not to exceed two pages) describing your academic accomplishments, professionally related extracurricular activities, work history, career goals, and the relevance of reliability engineering to them;
- An official academic transcript of all college courses completed;
- A degree plan with reliability-related courses clearly identified; and
- One or more recommendation letter(s) from the instructor(s) of reliability-related course(s) you have successfully completed.

Contact:

IEEE Reliability Society Scholarship
Attn: Dr. Robert Loomis
3865 Hidden Hills Dr.
Titusville, FL 32796



IEEE Reliability Society Scholarship Application

All APPLICANTS – Please provide the following information along with this application:

1. An essay describing your academic accomplishments, professionally related extracurricular activities, work history, career goals, and the relevance of reliability engineering to them.
2. An official academic transcript of all college courses completed.
3. A degree plan with your reliability-related courses clearly identified.
4. One or more recommendation letter(s) from the instructor(s) of reliability-related course(s) you have successfully completed.

Applications will be considered incomplete until all documents are received. With the exception of signatures and dates, documents should not be handwritten.

Please select your current level of education:

- Junior
 Senior
 MS/ME Student
 PhD/DE Student

Last Name	First Name	MI	GPA/Scale (e.g. 3.5/4.0)
Student Permanent Address		Student School Address	Student Telephone Number(s)
School Name and Address			School Telephone Number(s)

Major Field of Study (be specific – e.g. Electrical Engineering, Industrial Engineering, Computer Science, Physics, etc):

Email Address:

Authorization to Release Scholarship Information

Federal Law requires that we obtain written permission before releasing information to the news media regarding scholarship recipients. If you wish to give such permission, please sign. If you do not sign, we will not release information to the media. However, it will not adversely affect your scholarship application.

Applicant's Signature and Date

I certify that all statements in this application and related materials are correct.

Applicant's Signature and Date

Submission Deadlines (Note: All material must be received by the appropriate submission deadline):

- Summer Term – April 1st
- Fall Term – July 1st
- Winter Term – November 1st

Please submit all application material to:

IEEE Reliability Society Scholarship
 Attn: Dr. Robert Loomis
 3865 Hidden Hills Dr.
 Titusville, FL 32796

IEEE Expert Now Course Introduction

Design for Six Sigma

This module is produced by Dr Samuel Keene, FIEEE. This tutorial introduces basic Six Sigma and Design for Six Sigma (DFSS) concepts and terminology. Then 10 DFSS tools are identified that are high payoff and can be readily applied to new product development.

IEEE Expert Now Course Introduction

Planning and Performing Failure Mode and Effects Analysis on Software

Developers of safety-critical software are sometimes required to perform a failure modes and effects analysis (FMEA) on software designs or code. This kind of analysis examines software at a detailed level to determine whether a variable that assumes an unexpected value could cause catastrophic or other undesirable effects on the entire system. While the need to perform software FMEA is increasingly common, reliability analysts who are familiar with hardware FMEA haven't a clue how to perform an analysis on software, and most software developers have no familiarity with FMEA at all.

Fortunately, there is an Expert Now tutorial that explains how to plan and perform a software FMEA. The tutorial is not a cookbook, but rather provides a framework for the analysis and explores factors that should be considered for planning and performing it. The tutorial includes detailed examples from an actual analysis.

**IEEE Reliability Society Newsletter Submission
from the Boston Chapter
February 2007**

Greetings from the Boston Chapter! The 06-07 meeting season continues into the new year and meeting plans through May 07 are complete.

Our November monthly meeting was held at Thermo-Electron Fisher Scientific in Lowell MA. Douglas Smith from D. C. Smith Consultants presented: *“Unique practical techniques and tools for debugging difficult design problems”*. Doug review some of his practical methods he’s developed over the years to determine the origin of electrical circuit failures, related to EMI/RFI interference. We had more than 36 members & guests at this meeting. The chapter would like to thank Giora Kedem, Mike Hopkins & June Levine for setting up this meeting & handling the arrangements.



**Doug Smith talking about EMI tools (Left), Audience at Thermo-Electron Fisher Scientific, Lowell MA (Right).
- images courtesy of AdCom members Aaron D. (Raytheon) & G. Kedem (RSA)**

Our December monthly meeting & annual past chairs dinner was held again this year at RSA, the security division of EMC. This is our annual meeting, where Chapter past chairs are recognized & the 2007 AdCom election results were announced. Past Chair members attending this year’s meeting were:

Avery Hevesh:	1969 - 1970	Don Markuson:	1990 - 1991 ; 1995-1996
Donald Dawes:	1971 - 1972	Giora Kedem:	1997 - 1998 ; 1998-1999
Gary Kushner:	1984 - 1985 ; 1991-1992	Jim Fahy:	1999 - 2000 ; 2004
Gene Bridgers :	1986 - 1987	Jeff Clark:	2000 - 2003 ; 2005

A buffet dinner was served for all in attendance, the RSA Cafeteria did a great job with catering the event. During dinner, the 2007 Boston Reliability election results were announced. This year’s AdCom includes:

Chair:	Aaron C. DerMarderosian Jr. (Raytheon Company)
Vice-Chair:	Joe Dzekevich (Raytheon Company)
Secretary:	Edward Robins (EMC Corporation)
Treasurer:	Don Markuson (ArrAy Inc.)

Other AdCom members include:

Lecture Series Chair:	Gene Bridgers	Member at Large:	Jeff Clark <i>National RS AdCom</i>
Publicity Chair:	Nihar Senapati	Member at Large:	Giora Kedem <i>Arrangements</i>
Web-site Manager:	Jim Fahy	Member at Large:	Rudy Bauer, <i>Arrangements</i>

Following dinner, David A Pinsky, Engineering Fellow from Raytheon company presented: *“RoHS impact on Reliability, Tin whisker assessment & mitigation”*. This was an interesting interactive discussion regarding the impact the RoHS (Reduction of Hazardous Substances) implementation will

have on the long term reliability of electronic component terminations, platings & finishes. The meeting was well attended, with more than 48 Members & guests participating.



December Meeting attendees at the presentation (Left), David Pinsky Raytheon, Key note presenter (Right).
- images courtesy of AdCom members Aaron D. (Raytheon)

In January 2007, our monthly meeting was at RSA in Bedford. Aaron DerMarderosian Sr., Engineering Fellow from Raytheon company presented: *“Reliability implications of Hermeticity & Residual Gas Analysis, associated with packaged electronic devices”*. Aaron Sr. discussed hermeticity in electronic device packaging and how device hermeticity, effects device reliability. Examples of hermetic devices, past & present were reviewed. Aaron sr. covered unique analysis methodologies used to assess the integrity of the hermetic seals in micro-electronic packages. There were more than 43 members & guests present for this discussion.



January meeting participants (Left), Aaron Sr. discussion assessment methods (Right).
- images courtesy of AdCom member Aaron D. Jr. (Raytheon)

Upcoming meetings:

Registration is underway for our February monthly meeting, which will be held at Textron Systems in Wilmington MA. This will include an introductory talk about Textron and the systems they develop for their customers, followed by a tour of their facilities. Our Textron Systems meeting host, John Conrad is also active in the local IEEE Boston section where he serves as Secretary, PACE chair & served previously as Treasurer.

In March, Gene Bridgers from Mercury Computer & the IEEE Boston Reliability chapter will present: "*Some HALT/HASS Practice Variations*". Gene will talk about some of the various HALT/HASS implementation methods that have been used to qualify System hardware and review the benefits & draw backs of each. This will be an open & interactive meeting, as always participation is encouraged! Registration is now open for this meeting.

Planning & publicity is complete for the April Spring Lecture Series. This year, Steve Rakitin from Software Quality Consulting will be the lecture series Instructor, presenting: "Introduction to Software Reliability". Steve is considered to be a leader in the areas of Software Quality & Reliability and has frequently lectured at various conferences & events. This will be held at EMC Corporation in Hopkinton MA. Over Three nights, April 24th, 25th & 26th.

This is a growing area of interest for many Reliability practitioners. As large scale systems become more sophisticated, a larger percentage of the overall efforts involve operating system & software development. You can learn more about this lecture series at: <http://ewh.ieee.org/r1/boston/r1/sls2007.html>.

This will be posted on the IEEE Boston section website & the local IEEE reflector, Registration for the lecture series is now open to both members & guests.

For our final meeting of the season, we'll return to RSA in Bedford. Keith Donaldson is Tentatively scheduled to present: "*Utilizing packaging to improve electronic Reliability in a post RoHS environment*". Keith will talk about how the environment & various pollutants can effect post RoHS platings & finishes, ultimately effecting component reliability. Keith will also review various methods that can be employed to protect your finished electronic goods from environment during assembly, manufacturing test, shipment & long term storage.

The Boston Reliability chapter advertises upcoming meetings, registers attendees & uploads past presentations on our IEEE hosted web-site.

The URL is <http://www.ieee.org/bostonrel>.

Regards,
Aaron C. DerMarderosian Jr.
Chair, Boston Chapter

The Cleveland Chapter had three meetings in this period.

PAST MEETINGS

The Fall Roast (Installation of Officers) was our September meeting. It was held at the Picnic Grounds. Ernie Bartone and Jimmy Simek took care of the speeches and logistics. The steaks and fish were excellent again this year. The Officers for next year were installed. Please try to bring new members into the meetings so we can keep the improve the membership. It was a great roast with a lot of news, fun, and games being had by all.

The October meeting was on the Gargill's Salt Mine. Albert Kunz, Engineer, explained the history, process, and management of the mine. The mine is located below Lake Erie. Salt is removed using explosives and heavy equipment. A conveyor belt is used to bring the salt to packaging stations. The salt is graded, processed, sold, and used in our area. It was a very interesting trip through the mining operation right here in Cleveland. The business meeting and food were discussed. The plans for coming months were made. Many enjoyed the meeting.

The November meeting was on the Master Plan for GRC. Joe Morris, Chief Architect, discussed how the campus would be changing. Steps are being taken to be ready for NASA's changing missions. Security is being improved to guard against terrorism. Old buildings are being removed. New building will be put up as money becomes available. It is a 20-year plan that will continue to changes as Washington decides what is needed at GRC. It is a very interesting plan that is continuing to be improved. The business meeting suggested that a tour of Cleveland Clinic be scheduled. The Director's meeting has been scheduled for January 25, 2007. Please plan on bring one of your engineering friends to this meeting.

CHAPTER ACTIVITIES

We are supporting '07 RAMS on the Management Committee, with papers, tutorials, and session suggestions. The Chapter Staff are all working to make it a big success.

We have put together a plan for AUTOTESTCON 2010 in Cleveland. The plan is to expand the Instrument Reps show at Lander Haven Country Club. The DOD Measurement Conference will include exhibits, technical sessions, tutorials, poster sessions, and awards for the best paper and poster. Support for this activity has been obtained from the CS and AESS. Support is needed from IRIS, IMS, and ISA. The staff is ready, willing, and able to add this activity as a major service to our members.

The Assurance Technology Symposium and Risk Management Conference will be held at the Ohio Aerospace Institute in June and September 2007. There will be presentations, exhibits, training, and splinter meetings in the three and one half day activities. Award for the best presentation is given. These activities provide the Safety and Mission

Assurance (SMA) community and Project personnel with a unique opportunity for interchange and interaction on innovative assurance technologies and tools. It promotes dialog and co-operation with the Projects, Centers, and the SMA community.

Overall, here in Cleveland we are having fun, staying active, and serving the needs of our members.

Regards,

Vince Lalli, PE
Chair

Dallas Chapter Activities

By Lon Chase

The Dallas Chapter hosted the following presentation in the last quarter:

Title: "Reliability Testing in a Pb-Free World"

Date: Tuesday, January 16, 2007

Speaker: Keith Sellers, Trace Laboratories

Program Summary:

Our first meeting of 2007 for a presentation on an extremely interesting and relevant subject: "Reliability Testing in a Pb-Free World". With the push for greener electronics through legislation and directives (RoHS, WEEE, etc.), the Pb-free world is expanding with many questions to be answered. The largest and probably most important question associated with this significant processing change is: Are my products still reliable? Keith's presentation will review the types of tests being used by the industry to qualify "lead free" products and focus on the methodologies behind the Pb-free testing being performed at Trace Laboratories along with discussions of results obtained and conclusions drawn.

Speaker:

Keith M Sellers is a Senior Scientist at Trace Laboratories headquarters in Hunt Valley, MD. He has been with Trace since 1999 and holds a bachelor's degree in Chemical Engineering from the University of Delaware with a strong background in material science. Keith's primary work is in the areas of contamination and root cause failure analysis. Recent work has focused on the printed circuit board industry's turn towards Pb-free alternatives, including the tin whisker phenomenon and related reliability issues.

Title: "Terrestrial Single-Event Effect Characterization and Analysis"

Date: Tuesday, February 20, 2007

Speaker: Vivian Zhu, Texas Instruments

Program Summary:

As technology scaling reduces dimensions and voltages to provide higher density and lower power functionality, the system sensitivity to radiation-induced soft errors increases. Soft errors, also known as single event upset, on ground level, is caused by alpha particles from packaging material and nuclear reaction product of terrestrial neutron and semiconductor material. Soft error can manifest in unpredictable system behavior, thus represent considerable risk for high reliability applications. This presentation presents some novel techniques used in terrestrial single-event effect characterization and analysis at accelerated conditions.

Speaker:

Xiaowei (Vivian) Zhu Ph.D (2002) in Electrical Engineering from Vanderbilt University. Her doctoral dissertation title is "Single event effects in commercial microprocessors using dynamic circuitry." She

joined Texas Instruments, Inc. in 2002 as a Reliability Engineer in the Silicon Technology Development group. Her research interests are focused on characterizing and modeling radiation induced soft error rates in advanced CMOS technologies. Dr. Zhu has published several papers in the field of radiation induced single event upset, served as technical session chair for IEEE Nuclear Science Radiation Effect Conference in 2005, and International Conference on the Application of Accelerators in Research and Industry (CAARI) in 2006. She also served as a committee member and section author of JEDEC JESD89A test standard, and is a frequent reviewer for IEEE TNS, European Conference on Radiation and Its Effects on Components and Systems, and Microelectronics Reliability.

Title: "Lessons Learned for Guidance in Implementing Commercial Off The Shelf (COTS) Equipment in Rugged Applications"

Date: Tuesday, March 20, 2007

Speaker: Lon Chase, Raytheon Co.

Program Summary:

This Tuesday is a "lessons learned" presentation on the use of COTS equipment, a subject which I am sure is very relevant to many of you. The use of COTS equipment (i.e. circuit cards, processor cards, Inertial Measurement Units, Global Positioning System cards, power supplies, etc) is an attractive approach to system development even in severe environment applications. Catalog items promise the latest technology, shorter development cycles and lower cost. However, there are hidden cost and schedule issues that could create problems throughout the system lifecycle and negate the benefit from COTS use. This presentation describes how guidelines and tools were developed using lessons learned from real applications. An overview of the lessons learned, the process used to generate tools, and the tools themselves are described.

Speaker:

Lon Chase is a principal reliability engineer in the Raytheon Tactical Radar unit at McKinney, Texas. He has 18 years experience in military radar applications and in reliability application of new circuit card and component technology. Lon has a Bachelors of Science degree in Electrical Engineering from the US Naval Academy and a Masters of Science in Reliability from the University of Maryland. He is currently active in the IEEE Reliability Society on the admin committee and aerospace & military technical committee; he also is the newsletter editor and past chair for the Dallas IEEE Reliability society chapter.

As always, refreshments and beverages courtesy of the IEEE Reliability local chapter were provided before the presentation. Social time before the presentation allowed getting acquainted with others in attendance.

Chapter Officers

Faye Bilger, Chapter Chair

Lon Chase, Past Chair

Milton Tam, Program Chair

Micah Koons, Treasurer
Ron Knerr, Membership
Mike Aranibar, Secretary

Denver Chapter

Will host a meeting at Sun Systems in March. Daniel Rose, Sun Reliability Manager will speak on the System Engineering Perspectives/contributions to Reliability.

Sam Keene
Chapter Chair



Politecnico di Torino



European Safety, Reliability & Data Association



Politecnico di Milano

1st Announcement

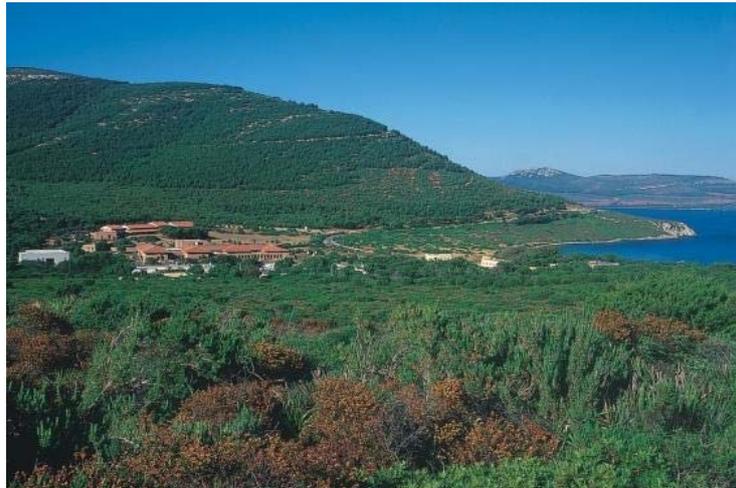
**32nd ESReDA Seminar
1st ESReDA-ESRA Seminar**

on

**Maintenance Modelling and Applications
08-09 May, 2007**

Hotel dei Pini

Località Le Bombarde – Alghero (SS) - Italy



Modern engineering systems, like process and energy systems, transport systems, offshore structures, bridges, pipelines are designed to ensure successful operation throughout the anticipated service life, in compliance with given safety requirements related to the risk posed to the personnel, the public and the environment.

Unfortunately, the threat of deterioration processes is always present, so that it is necessary to install proper maintenance measures to control the development of deterioration and ensure the performance of the system throughout its service life.



IEEE reliability Society
Italian Chapter

This requires decisions on what to inspect and maintain, how to inspect and maintain, and when to inspect and maintain. These decisions are to be taken so as to achieve the maximum benefit from the control of the degradation process while minimizing the impact on the operation of the system and other economical and safety consequences.

During the last 10 to 15 years, reliability-based and risk-based approaches have been developed for the planning of inspections and maintenances. These approaches embed the reliability, availability, maintenance and safety (RAMS) models within a decision theory framework to minimize overall service life costs including direct and implied costs of failures, repairs, inspections and maintenances. They have reached the maturity of practical procedures and are indeed applied in various industries.

The purpose of this seminar is to provide a forum for discussion and experience-sharing with regards to the modeling and optimization of maintenance procedures for ageing and deteriorating engineering and structural components and systems. Corrective, preventive, condition-based and opportunistic maintenance schemes will be considered, together with the innovative methods of system health monitoring and fault diagnosis. Both model developments and practical applications are of interest. Experiences from various industrial fields are mostly appreciated so as to allow a critical analysis of the differences in practical needs, limitations and difficulties when applying the different approaches to the specific situations.

Topics:

- Methodologies for RAMS and their applications to maintenance
- Structural Reliability & Maintenance
- Dynamic Maintenance Models
- Degradation Mechanisms and Modelling
- Maintenance Strategies and Optimisation
- Inspection and Detection
- System Health Monitoring
- Fault Detection and Identification
- Industrial Cases

Announcement and relevant information are available on: <http://www.esreda.org/> .

SEMINAR ORGANISATION

The seminar is jointly organised by ESReDA, ESRA, Politecnico di Milano and Politecnico di Torino and co-chaired by :

Dr. Henrik Kortner (ESReDA) and Prof. Enrico Zio (ESRA)

Organising committee

Micaela Demichela (Politecnico di Torino, I)

Mohamed Eid (CEA, F)

Norberto Piccinini (Politecnico di Torino, I)

Enrico Zio (Politecnico di Milano, I)

Local Organizing Committee

Micaela Demichela (Politecnico di Torino, I)

Norberto Piccinini (Politecnico di Torino, I)

Program Committee (PC)

ARDILLON	Emmanuel	EDF (FR)
ARNAIZ	Aitor	Tekniker (S)
BARALDI	Piero	Politecnico di Milano (I)
BEDFORD	Tim	University of Strathclyde (S)
BERENGUER	Christophe	Université de Technologie de Troyes (FR)
BLOMBACH	Joerg	Areva (D)
BRIS	Radim	University of Ostrava (CZ)
DEMICHAELA	Micaela	Politecnico di Torino (I)
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ROSQVIST	Tony	VTT Industrial Systems (FI)
SILVA	Santos	CPPE/EDP (P)
SIMOLA	Kaisa	VTT Industrial Systems (FI)
SOLA	Antonio	Iberdrola (S)
VAURIO	Jussi	Lappeenranta University of Technology (FI)

DATES

07/05, 09:00-17:00	: ESReDA Project Groups meeting (open to all), under planning,
07/05, 14:00-16:30	: 47 th ESReDA Board of Directors
08/05, 08:30-17:00	: 32 nd ESReDA Seminar/1 st ESReDA-ESRA Seminar (1 st day)
08/05, 17:30-19:00	: 28 th ESReDA General Assembly Meeting
09/05, 08:30-17:00	: 32 nd ESReDA Seminar/1 st ESReDA-ESRA Seminar (2 nd day and closure)
10/05, 09:00-17:00	: ESReDA Project Groups meeting (open to all), under planning

ESReDA Project Group (PG) technical meetings are freely open to all. The final programme will include the detailed plan of PG meetings.

ACCOMMODATION

Seminar Organiser does not propose any specific accommodation arrangement to the participants. However, a limited number of rooms are reserved in the Hotel dei Pini where the seminar is held. Priority will be given for earlier booking.

<http://www.hoteldeipini.it/>

Booking should be effectuated directly with the Hotel dei Pini.

The booking form can also be downloaded from: <http://www.polito.it/Safer/>

SEMINAR FEES

Seminar's fees are 300€/participant. Speakers, session chairpersons and 3 participants per ESReDA member organisation are exempted.

Members of the ESRA Technical Committees (TCs) on "Simulation & Stochastic Modelling" and on "Maintenance Modelling & Applications" are exempted, in the same terms as ESReDA member organisations, upon explicit request and up to the limit of the available budget (a first-come-first-serve basis will be applied to the requests for exemptions). Other members of ESRA, not members of the above mentioned TCs, may request exemption of the seminar fee which will be granted provided that budget is still available.

GALA DINNER

A gala dinner is organised in the evening of Tuesday, May 8th. The contribution for the Gala Dinner is 20€.



REGISTRATION FORM

Title : [Mr., Mrs, Dr., Prof.,]

Name :

Affiliation :

Address :

City/State :

Zip :

Country :

Phone/Mobile :

Fax :

E-mail :

Please, activate the appropriate case:

- Speaker (1st author), Chairperson (**exempted from fees**)
- ESReDA member organisation (**exempted from fees**)
- ESRA Technical Committee on “Simulation & Stochastic Modelling” or “Maintenance Modelling & Applications” (**exempted from fees, see details in the announcement**)
- I pay the ESReDA Seminar fee (300€)
- I would participate to the Gala Diner (20€/person): 20x..... =

The total is payable only by bank transfer to : Fortis Bank-Deinze Bank, Tolpoortstraat 17, Deinze, B-9800, Belgium / IBAN : BE69 0012 3728 1678/BIC : GEBABEBB36A)

ESReDA is a non-profit international association declared in Belgium under the following references: Registration N°: 0452522618/Siret:E00005802. ESReDA is not subjected to the AVT.

This registration form does not include any Hotel reservation. Your hotel booking should be done directly with the hotel.

Please mail your reply to Mohamed Eid (Mohamed.eid@cea.fr), for registration

Phone : +33169083175

Fax : +33169089935



Wednesday, January 24, 2006

Joint San Diego IEEE Section Meeting with the Nuclear and Reliability Societies

The Future of Nuclear Power

Speaker: Scott Peterson

About the Program:

The San Diego IEEE Section brings us Scott Peterson to speak on the 'Future of Nuclear Power.' This is an issue that concerns all of us, and Scott has unique insight on this topic. The following issues will be discussed:

- A brief review of the state of the nuclear industry up to now
- The forces that are in play leading to a return of nuclear power
- General developments of nuclear power in various countries
- Types of nuclear power stations proposed and brief review of their pros and cons
- US utilities and NRC cooperation on licensing of new reactors
- Impact of Bush government initiatives on progress in this country
- Status of nuclear construction in other countries, such as China, Korea, Japan, and Europe
- *Is nuclear power the answer to both global warming and oil independence for the US?*

About the Speaker:

Scott Peterson is vice president for communications at the Nuclear Energy Institute. NEI represents more than 270 domestic and international corporations and organizations involved in nuclear energy and related technologies. In 2001 he was elected vice president by the NEI Executive Committee, after having served as senior director for NEI's Communications Division. Mr. Peterson directs the Institute's activities in media relations, advertising, editorial and creative services, public opinion research, and industry communications.

Mr. Peterson has been published in The New York Times, The Washington Post, USA Today, and many industry publications, and has appeared on CNN, ABC News, CNBC, CSPAN's Washington Journal, FOX News, National Public Radio and World Business Review. He has presented speeches on energy, environmental and communications issues at several business and communications forums.

Before joining NEI, Mr. Peterson was director of communications for the American Nuclear Energy Council, a government relations organization for the nuclear energy industry and one of three groups merged in 1995 to form the Nuclear Energy Institute. He also served as a senior media relations representative at Illinois Power and was a reporter and columnist at newspapers in Virginia, North Carolina and South Carolina.

Meeting Location: Qualcomm Auditorium
6455 Lusk Blvd, San Diego, CA 92121

Times: 6:00 – 7:00 Pizza and Networking
7:00 – 8:30 Presentation and Q&A

RSVP/Info: Free for IEEE Members, \$5 for others
Please RSVP for we can estimate for food to hache@ieee.org



Report by Singapore REL/CPMT/ED Chapter (8 Feb 2007)

- By Wilson Tan

The Chapter had the following activities during the 4th quarter of 2006:

1. Short Courses

- 6 November 2006, “Thermal Test Methods for Integrated Circuits” by **Bernie Siegal**, *Thermal Engineering Associates Inc, USA*.

2. Distinguished Lectures

- 2 August 2006, “Post-breakdown Conduction in Ultra-thin Gate Oxides: From Physical Models to Circuit Applications”, **Prof. Enrique Miranda**, Electronics Engineering from the Universitat Autònoma de Barcelona (UAB), Spain.
- 7 November 2006, “Key Differences between EU RoHS and China RoHS”, **Dr. John Lau**, ASME Fellow, IEEE Fellow.

3. Technical Talks

- 28 August 2006, “Advanced Gate Stack for Nano Silicon Devices”, **Dr. Yu Hong Yu**, IMEC, Belgium.
- 21 December 2006, “Probing Plasticity at the Nano Scales: From Size Effects Uniaxially-Compressed Au Nanopillars to Plasticity-Modulated Electromigration in 65nm Cu Interconnects”, **Dr. Arief S. Budiman**, Stanford University, USA.

4. Conferences

EPTC2006

The 8th Electronics Packaging Technology Conference (EPTC 2006) was held on 6-8th December 2006 at the Pan Pacific Hotel, Singapore. This conference is organized by the Reliability/CPMT/ED Singapore Chapter of the IEEE Singapore Section. EPTC 2006 is sponsored by IEEE CPMT Society and technically co-sponsored by IMAPS.

EPTC is an international conference dedicated to research, development and applications of electronic components, assemblies and systems. Inaugurated in 1997, EPTC has become an annual electronics packaging technology conference in Asia. This year, we had 151 technical papers in the conference proceedings. The EPTC 2006 Proceedings is provided both in printed version as well as in a CD-ROM. There were 32 technical sessions and technical papers were presented by engineers and researchers from 18 countries.

IEEE Singapore Reliability/CPMT/ED Chapter

c/o IEEE Singapore Section Secretariat
70 Bukit Tinggi Road

Singapore 289758 Tel:(65)6461 1234 Fax:(65) 6467 1108

E-mail: sec.singapore@ieee.org Web Site: <http://www.ewh.ieee.org/r10/singapore/>



EPTC 2006 featured two distinguished keynote speakers, Eric Beyne from IMEC, Belgium, who delivered the first keynote talk on “The rise of the 3rd Dimension for System Integration” and Raj Master from Advanced Micro Devices, USA, who delivered the second keynote talk on “Packaging, Assembly and Thermal Challenges for Future Microprocessors”. Robert Darveaux, Senior VP, Advanced Product Development of Amkor Technology gave an Invited Talk on “Advanced Semiconductor Packaging”. William Chen, President of IEEE CPMT Society gave the Welcome Address and a special talk to delegates during the CPMT Luncheon. EPTC 2006 delegates were treated to a Conference Cultural Show and Banquet Dinner event at the Malay Heritage Centre.

EPTC 2006 features 4 pre-conference short courses and a forum on the 6 December 2006. Ning-Cheng Lee gave a short course on “Lead-free soldering: Metallurgical fundamentals, failure modes, and optimal processes”. Ahmer Syed and Tong-Yan Tee ran a short course on “Finite element simulation and life prediction for solder joint reliability”. Rajen Chanchani delivered a short course on “3D Integration technologies - An overview”, and Werner Kroninger gave a short course on “Preassembly from thick wafers to thin chips - Main enabler for 3D technology”. A 1-day Advanced Substrate Technology Forum featured a panel of speakers namely, Raj Master, Chuck Bauer, Bernd Appelt, CQ Cui, Yoshiki Maekawa, Ed Carignan, Risto Tuominen, Albert Lu and Kripesh Vaidyanathan. *(Reported by: John H. L. PANG, General Chair, EPTC 2006)*

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Singapore 289758 Tel:(65)6461 1234 Fax:(65) 6467 1108

E-mail: sec.singapore@ieee.org Web Site: <http://www.ewh.ieee.org/r10/singapore/>



Eric Beyne, IMEC, Belgium.



Raj Master, AMD, USA.



Robert Darveaux, Amkor Technology.



William Chen, President CPMT.



EPTC 2006 Conference Social/Banquet Event at the Malay Heritage Centre.

5. Others

Educational Activities for Students

- The Chapter donated a sum of S\$400 for one student activity organized by the Student Chapter of the National University of Singapore (NUS) branch. The Macromedia Flash Course and Flash Presentation Competition was organized by the NUS Student branch on 19th, 20th & 23rd October.

EDS 2006 Best Chapter of the Year Award

- Xing Zhou (EDS AdCom member) represented the REL/CPMT/ED Chapter to receive the EDS 2006 Best Chapter of the Year Award on behalf of Chapter Chair Wilson Tan during the 2006 IEDM held in San Francisco in Dec 2006.

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E-mail: sec.singapore@ieee.org Web Site: <http://www.ewh.ieee.org/r10/singapore/>



Xing Zhou receiving the EDS 2006 Best Chapter of the Year Award.

Reliability Society 2005 Best Chapter of the Year Award

- Our Chapter also recently won the Reliability Society 2005 Best Chapter of the Year Award, as announced on 23rd August 2006, and ranked ahead of the Dallas Chapter (2nd) and Boston Chapter (3rd).

Meetings

- Dr. Alastair Trigg represented IPFA06 as General Chair & the IPFA Board to attend the ISTFA'06 conference/meeting held on 12-16 Nov 2006 in Texas, USA.

New Appointments

- Chapter committee member Xing Zhou has been elected as EDS AdCom member for the 2nd term. He has been appointed as the Chair for SRC-AP, as well as Ex-Officio AdCom members for the Publications Committee and the Educational Activities Committee.

By Wilson TAN
2006 Chair, Singapore REL/CPMT/ED Chapter

IEEE Singapore Reliability/CPMT/ED Chapter

c/o IEEE Singapore Section Secretariat
70 Bukit Tinggi Road

Singapore 289758 Tel:(65)6461 1234 Fax:(65) 6467 1108

E-mail: sec.singapore@ieee.org Web Site: <http://www.ewh.ieee.org/r10/singapore/>

IEEE Reliability Society ♦ Twin Cities

The Twin Cities IEEE Reliability Society meets once a month between September and May to discuss reliability topics of interest. The IEEE cooperates with the local chapters of the American Society for Quality (ASQ) and the Institute of Environment and Stress Tests (IEST). Over the past several months these groups have met on the following topics:

November 1, 2006 ♦ Dr Wayne Taylor, consultant from Chicago, spoke on ♦ Reliability and Tolerance Analysis ♦ at Emerson Process in Eden Prairie. A total of 40 people enthusiastic people attended and asked questions about his examples.

November 21, 2006 ♦ Mingxiao Jiang, Principal reliability engineer of Seagate, spoke upon ♦ ALT of small Actuators ♦ at Teradyne in Fridley Minnesota. Twenty-one people attended and discovered how a small hard drive assembly can be effectively life tested to assure performance.

January 16, 2007 ♦ Thermoking, a mobile refrigeration company in Bloomington, hosted the January meeting. Dr. Julio Pulido, Director of Worldwide Quality and Reliability, presented ♦ Understanding the reliability of mobile systems ♦. Twenty-nine people took the plant tour as well as heard the talk. Dr Pulido showed how a multi-plant, multi-country reliability process can be created.

February 20, 2007 ♦ Kevin Becker, senior reliability engineer of Hutchinson Technology and a May 2007 graduate of the University of Maryland Masters program, presented to twenty-seven people. His talk focused upon the ♦ Basics of probabilistic risk assessment ♦ and how it is related to a variety of reliability tools.

The Twin Cities will finish the Spring with talks on Reliability Predictions, Gaming Theory and Measurement System Analysis.

Submitted by James McLinn ♦ Minnesota February 26, 2007



Call for Papers

1st Annual IEEE Systems Conference

April 9-12, 2007

Hyatt Regency Waikiki, Honolulu Hawaii USA

V7

Conference Theme

The theme of the IEEE Systems Conference is Engineering Complex Integrated Systems and Systems-of-systems – Implications for Systems Engineering, Systems Integration, and Systems Thinking.

Background

The IEEE Systems Council facilitates interactions among communities of interest on system-level problems and applications. System-level thinking is essential in the world today, not only for technical systems but also for society at large. The Council addresses the discipline of systems engineering, including the issues and complexities of system-level and system-of-systems applications, focusing on the total systems effectiveness of complex integrated systems of national and global significance.

Conference Objectives

This conference seeks to create an interactive forum for the advancement of the practice of system design, development, and management, across the multiple disciplines and specialty areas associated with the engineering of systems. The conference will provide a venue for systems engineering practitioners, managers, researchers, and educators to exchange innovative concepts, ideas, applications, and lessons learned addressing:

- Applications-oriented topics on large-scale systems and system-of-systems in topics noted below
- Systems engineering, education, standards, processes and methodologies for the system-of-systems environment
- Research opportunities and results relating to system-of-systems

Topic areas for consideration include:

- System architecture, especially at the system-of-systems level
- Engineering systems of systems including risk management
- Systems reliability
- Engineering Processes for the system-of-systems design environment
- Systems engineering quality management
- Systems modeling & simulation
- Systems Verification and Validation
- Systems engineering education and training
- Program/Project management for system-of-systems
- “Systems thinking” benefits
- Technology transfer between academia and industry
- Societal and Political impacts of systems and systems design
- The impact of systems engineering on other engineering fields
- Systems considerations such as:
 - Disaster response

- Energy management & sustainability, including renewable energy
- Communications systems
- Medical systems
- Gaming and entertainment systems
- Transportation Systems
- Global Earth Observation
- Sensors integration and Application for a Net-centric environment
- Large-scale systems integration in any application area

We invite authors to submit short (not to exceed 750 words) abstracts of proposed technical papers. Abstracts must fully describe the planned content. Abstracts must include the following administrative information: paper title, author's name(s) and title, e-mail address, phone number(s), mailing address and organization.

Abstracts should be submitted electronically to the Technical Program Chair, Paul Croll, at pcroll@csc.com

IMPORTANT MILESTONES:

Abstract Submission Deadline: **November 01, 2006** *Deadline Extended*

Acceptance Notification and Author Instructions: **November 30, 2006**

Submission of Camera-Ready Papers: **February 01, 2007**

<p>Technical Program information contact: Paul R. Croll, Technical Program Chairman Computer Sciences Corporation 5166 Potomac Drive King George, VA 22485 (540) 644-6224 pcroll@csc.com</p>	<p>Conference information contact: Bob Rassa, General Chairman Raytheon Company 2000 E. El Segundo Blvd, MS R01/B523 El Segundo, CA 90245 (310) 334-0764 RCRassa@raytheon.com</p>
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About the IEEE Systems Council:

The IEEE Systems Council is the newest Technical Activities Board organization and was formed in June 2005. The Field of Interest for the Council follows:

This Council integrates IEEE activities regarding aspects of multiple disciplines and specialty areas associated with the engineering of systems. This Council covers, but is not limited to the following:

- *Systems engineering, education, standards, processes and methodologies*
- *Modeling, simulation and integration related to design, testing, production and support*
- *Design aspects for robust design, human factors, safety, security and usability*
- *Transition of products from design to production, deployment and use*
- *Quality control and system management*
- *Program/product/project management interactions*
- *Risk Management*
- *Systems Architecture*

Member Societies of the Council are:

§ Aerospace & Electronic Systems (AES) § Systems, Man & Cybernetics (SMC) § Engineering Management (EMS) § Instrumentation & Measurement (IMS) § Circuits And Systems (CAS) § Microwave Theory & Techniques (MTT) § Computer (CS) § Communications (ComSoc) § Oceanic Engineering (OES) § Computational Intelligence (CIS) § Product Safety Engineering (PSES) § Power Electronics (PELS) § Control Systems (CSS) § Reliability (RS) § Robotics & Automation (RAS)



Call for Papers

11th Annual IEEE International Symposium on Consumer Electronics (ISCE 2007)

June 20th-23th, 2007, Dallas, Texas, USA
www.isce2007.dallasces.org

Planning Committee

Chairman

William Lumpkins

Vice-Chairman

Sam Broyles

Technical Committee Chairs

Dr. Cory Carbonara
Dr. Peter Raad
Dr. BaoWei Ji
Dr. Cy Cantrell
Dr. Sue Hui
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LaRell Nielsen
Elizabeth Parks
Clay Montgomery
Murali Iyengar

Local Arrangements

Dr. Mike Whatley

Registration

Dr. Alan Davis

Publications

Dr. Baowei Ji

At Large Members

Dr. Cornelius Van Rensburg
Paul Lankenpaul
Dr. Rajeev Ramanath
Daniel Wu

International Liaisons

Dr. Simon Sherratt
Sang Young Youn

Website

www.isce2007.dallasces.org

Request for Information

isce2007@dallasces.org

In cooperation with the IEEE Consumer Electronics Society, IEEE Dallas Section, and IEEE Consumer Electronics Dallas Chapter

From the heart of the Telecom Corridor® area, the Dallas Chapter of the IEEE Consumer Electronics Society brings together international experts, educators, and colleagues for a four-day symposium of workshops and technical sessions to address emerging technologies and their applications.

Organization

ISCE 2007 will provide a forum for researchers, system developers, and service providers to share ideas, designs, and experiences on emerging technology. ISCE 2007 will be held in Dallas, Texas, USA hosted by the Dallas Chapter of the IEEE Consumer Electronics Society.

Topics of Interest

Digital Rights Management & Security, Broadband Wireless Access, Sensor Networks, Wireless Security, Dependable Networks, Channel Access, Novel Network Protocols, 3G/4G Systems, Internetworking, Automotive, Home Electronics & Communication, Mobile Computing, Internet Applications, Multimedia Video Technology, Audio Technology, RF & Wireless, User and Human Interfaces, Digital Imaging Technologies, Gaming, Home Networking, Home Theater/Video, Wireless Technologies and Emerging Technologies.

Submission

Authors are required to submit a one page abstract for each paper, demo, or poster by February 2, 2007 to isce2007@dallasces.org. The appropriate committee chair will notify each author of their acceptance status by February 16, 2007.

Papers must be submitted by April 27, 2007, to the appropriate committee chair. The length of research papers should not exceed 6 pages. Submitted papers will be peer-reviewed by the technical committee based on originality, significance, technical soundness, and clarity of exposition. Any critical feedback from the technical review committee will be provided by May 11, 2007. The final, camera-ready paper is due by May 25, 2007.

Format

Authors should follow IEEE Proceedings Manuscript submission guidelines and submit PDF files. A link to these guidelines will be provided at www.isce2007.dallasces.org

Publication

Accepted papers will be published in the electronic & paper conference proceedings with an ISBN.

Important Dates for 2007

Abstract Due:	February 2
Notification of Acceptance:	February 16
Complete Paper Due:	April 27
Committee Review:	May 11
Camera Ready Paper Due:	May 25
Symposium:	June 20–23

Location

The Westin Dallas Fort Worth Airport
4545 West John Carpenter Freeway
Irving, Texas 75063, United States

Early Registration (before April 2nd):

Non-Member	\$495
IEEE Member *	\$455
IEEE CE Society Member	\$435
Student Non-Member	\$395
Student IEEE Member *	\$375
Student IEEE CE Member	\$365

Late Registration (after April 2nd):

Non-Member	\$545
IEEE Member *	\$505
IEEE CE Society Member	\$485
Student Non-Member	\$445
Student IEEE Member *	\$425
Student IEEE CE Member	\$415

* includes CE Society Membership

CALL FOR WORKSHOP PROPOSALS

COMPSAC 2007- 31st Annual International Computer Software
and Applications Conference

Beijing, July 24-27, 2007

I'd like to inform fellow members of The IEEE Reliability
Society about an opportunity to propose and run workshops on
the Society related subjects in conjunction with the 31st
COMPSAC.

Workshops of COMPSAC 2007- 31st Annual International
Computer Software and Applications Conference
July 24-27, 2007
Beijing, China

Proposals for workshops are solicited for consideration of
affiliation with COMPSAC 2007. Affiliated workshops will be
held in conjunction and co-located with the conference and
other affiliated workshops.

The deadline for initial workshop proposals is 08 December
2006.

Dec. 15, 2006: Feedback provided to the workshop proposers
Dec. 31, 2006: Final workshop proposal submission

The formats for initial and final proposals are available at
the conference site.
The full CFP is attached.

Enquiries:

Atila Elci, aelci@ieee.org,

T: +903926302843

F: +903923650711

Web address:

<http://conferences.computer.org/compsac/2007/workshop.html>.

Sponsored by: IEEE & IEEE Computer Society



Greetings,

Have a good day. / İyi günler dilerim.

Atila Elci

<http://cmpe.emu.edu.tr/aelci/>

<http://conferences.computer.org/compsac/2006/ESAS.html>

<http://www.sinconf.org/> <http://www.abg-sinconf.org/>

<http://conferences.computer.org/compsac/2007/>

CALL FOR WORKSHOP PROPOSALS

COMPSAC 2007- 31st Annual International Computer Software
and Applications Conference

Beijing, July 24-27, 2007

COMPSAC is a major international forum for researchers,
practitioners, managers, and policy makers interested in
computer software and applications. Starting with 2006,
COMPSAC is designated as the IEEE Computer Society Signature
Conference on Software Technology and Applications. Based on
this designation COMPSAC organizers are able to work with

other key functions of the Computer Society to create more values for the conference volunteers and participants.



Proposals for workshops are solicited for consideration of affiliation with COMPSAC 2007. Affiliated workshops will be held in conjunction and co-located with the conference and other affiliated workshops. The purpose of these workshops is to provide a platform for presenting novel ideas in a less formal and possibly more focused way than the conference itself. As such, they also offer a good opportunity for young researchers to present their work and to obtain feedback from an interested community. Workshop organizers are responsible for establishing a program committee, collecting and evaluating submissions, notifying authors of acceptance or rejection in due time, and ensuring a transparent and fair selection process, organizing selected papers into sessions, and assigning session chairs.

Researchers and practitioners are invited to submit a one-page concept paper proposing a workshop to the 31st COMPSAC Workshop Chair, Atilla Elci (atilla.elci [at] emu.edu.tr), by Dec. 8, 2006. Submission may be made by e-mail with "COMPSAC Preliminary Workshop Proposal" in the subject header and supplying data on the Preliminary Workshop Proposal Format. Feedback will be provided to the workshop proposers by Dec. 15, 2006. An accepted proposal will then be detailed using the Final Workshop Proposal Format by its organizers. Other important due dates are mentioned below.

The selection of the workshops to be included in the final COMPSAC program will be based upon several factors, including the scientific / technical interest of the topics, the quality of the proposal, balance and distinctness of workshop topics, and the capacity of the conference workshop program.

Workshops use the same paper submission system with COMPSAC 2007. Proceedings of the COMPSAC Workshops will be printed as a separate volume by IEEE Computer Society Press to be made available to all conference registrants on site. All workshop papers will as well be electronically available through IEEE Xplore Digital Database. Any further information needed for preparing a workshop proposal can be obtained by contacting the COMPSAC Workshop Chair. 31st COMPSAC web site, too, (<http://www.compsac.org/>) is a source of first hand information.

31st COMPSAC Preliminary Workshop Proposal Format:
(Limited to 1-page, typed double space in 11 pt Times New Roman)

Workshop title: ...
Primary organizers, their affiliation, and contact details:
...
Proposed duration (select one: 1 / 2 / 3 / 4 sessions; 1 session=90 minutes): ...
A statement of goals for the workshop: ...
Workshop theme: ...
Likely participants: ...

31st COMPSAC Final Workshop Proposal Format:

(Limited to 3-pages, typed double space in 11 pt Times New Roman)

Workshop title: ...

Primary organizers, their affiliation, and contact details:

...

Proposed duration (select one: 1 / 2 / 3 / 4 sessions; 1 session=90 minutes): ...

A statement of goals for the workshop: ...

Workshop theme: ...

Likely participants: ...

Description of the workshop: suggested items are as follows: expected achievements, importance, program committee, format (paper presentations, discussion sessions, etc.), plans for call for papers / participation, plans for publicity,...

31st COMPSAC important dates for workshops:

Dec. 08, 2006: Preliminary Workshop Proposal submission

Dec. 15, 2006: Feedback provided to the workshop proposers

Dec. 31, 2006: Final workshop proposal submission

Feb. 23, 2007: Full paper and short paper due

Mar. 15, 2007: Decision notification (electronic)

Apr. 15, 2007: Camera-ready copy and author registration due

Note: The 31st COMPSAC Steering Committee will allocate sessions to each workshop within the constraints of space availability and the likely interest of the attendees in the workshop. Please be advised to organize your workshop early and request for adequate space as soon as your effort turns out to be fruitful. The COMPSAC Workshop Chair will work closely with the primary organizers to ensure a successful workshop.

Issue Date: Oct. 16, 2006.

ESRA PSRA

First Announcement & Call for Contributions

Summer Safety & Reliability Seminars

SSARS 2007

22-29 July 2007
Sopot, Poland

Organisers

European Safety and
Reliability Association
Polish Safety and Reliability
Association

Secretariat

Maritime University
Department of Mathematics
ul. Morska 81-87
81-225 Gdynia, Poland
e-mail: ssars2007@am.gdynia.pl
phone: + 48 58 6901587, fax: + 48 58 6206701

Website

<http://ssars2007.am.gdynia.pl>

Scope & Structure

The annual one-week *Summer Safety and Reliability Seminars* are organised to develop advanced methods of safety and reliability analysis of complex systems and processes and to disseminate the newest achievements in the field. The subjects of the Seminars vary from year to year, as chosen by the Scientific Boards in an effort to dynamically represent the methodological advancements developed to meet the newly arising challenges in the field of safety and reliability.

Contributions are in the form of 1-2 hours lectures on advanced methods (with corresponding full text of up to 12 pages) and technical papers of 20-30 minutes on applications of such methods (with corresponding full text of up to 8 pages).

The extended abstracts of all accepted lectures and technical papers will be collected in the form of SSARS Proceedings to be distributed to the participants as a reference textbook.

Lectures will be presented during the plenary sessions and the technical papers during the seminar sessions. Potential improvements of the works presented will be thoroughly discussed with the aim of achieving the quality for publication in relevant scientific journals.

Location & Appointed Time

The SSARS is to be held annually (or alternatively biannually) at the end of July (22-29) in the neighbourhood of Sopot, the "Summer Capital of Poland".

The hotels to be considered are:

- **Prawdzcic**
<http://prawdzic.com.pl/>
ul. Piastowska 198
80-341 Gdansk/Sopot-Jelitkowo, Poland
e-mail: prawdzic@prawdzic.com.pl
- **RzemieŃnik**
<http://rzemieslnik.pl/>
ul. Piastowska 206
80-341 Gdansk/Sopot-Jelitkowo, Poland
e-mail: biuro@rzemieslnik.pl

Diplomas

Attendance diplomas will be given to the participants, with the possibility of recognition of 5-10 ECTS for PhD students.

Registration

Participants are requested to fill in the Registration Form available on the Website and submit it automatically to the Secretariat.

Contributions

Authors are requested to submit their lectures and papers automatically to the Secretariat using the Website.

The submitted contributions will be reviewed for acceptance by the members of the Scientific Boards. Only those contributions prepared according to the Contribution Template given on the Website will be considered.

Fee

The SSARS Fee is expected to be about 800-900 € and to include: Sessions Attendance, Proceedings, Programme, Accommodation and Subsistence in Prawdzic and RzemieŃnik Hotels and Organised Social Events (Picnic, Boat Trip to Hel Peninsula, Other).

Language

The Seminars language is English.
No translation will be provided.

Deadlines

- Submission of Registration Form November 30, 2006
- Submission of Lectures & Papers January 31, 2007
- Acceptance of Lectures & Papers February 28, 2007
- Submission of Final Versions March 31, 2007
- Payment of SSARS Fees March 31, 2007
- SSARS Meeting July 22-29, 2007

Scientific Boards

Programme Board - Chairmen

- Members responsible for selecting the annual seminars' topics

Advisory Board

- ESRA and PSRA representatives and selected journals editors

Editorial Board

- Members responsible for the selection of the contributions and for the preparation of the SSARS Proceedings

Invited Professors

- Members responsible for plenary lecturing, seminar session chairmanship, consulting and identifying the potential improvement of the contributions and selecting those improved lectures and papers worthy of publication in scientific journals

Speakers - Authors of Lectures & Papers

- Plenary Session Speakers
- Seminar Session Speakers

Organising Board

- Members responsible for fluently running SSARS Meeting



SSARS 2007

Summer Safety & Reliability Seminars

22-29 July, 2007, Sopot, Poland

Scientific Boards

Programme Board

Chairmen/Co-ordinators

Krzysztof Kolowrocki, Gdynia Maritime University, Poland
Enrico Zio, Politecnico di Milano, Italy,

Advisory Board

Robert A. Ainsworth, International Journal of Pressure Vessels and Piping
John Andrews, Journal on Risk and Reliability
Alfred Brandowski, Polish Safety and Reliability Association
Jerzy Girtler, Polish Maritime Research
Carlos Guedes Soares, Reliability Engineering and System Safety
Napat Harpornchai, International Journal of Materials and Structural Reliability
Jerzy Jazwinski, Exploitation Problems of Machines
Way Kuo, IEEE Transaction on Reliability
Guoping P. Liu, International Journal of Automation and Computing
Christian N. Madu, International Journal of Quality and Reliability Management
Ioannis A. Papazoglou, European Safety and Reliability Association
Hoang Pham, International Journal of Reliability, Quality and Safety Engineering
Zbigniew Smalko, Archives of Transport

Editorial Board

Vladimir Aleshin, Russia
Agnieszka Blokus-Roszkowska, Poland
Marko Cepin, Slovenia
Jose Caldeira Duarte, Portugal
Bozena Kwiatkowska-Sarnecka, Poland
Krzysztof Kolowrocki, Poland
Pierre-Etienne Labeau, Belgium
Uwe K. Rakowsky, Germany
Tadeusz Salamonowicz, Poland
Vadim Seleznev, Russia
Joanna Soszynska, Poland
Enrico Zio, Italy

Speakers & Session Chairmen (Topics)

Plenary Session Speakers and Seminar Session Chairmen Invited Professors

Peter van Gelder, Delft University, Netherlands (Natural Hazards Analysis and Environment Protection Modelling)
Olgiard Hryniewicz, System Research Institute, Poland, (Reliability and Safety Data Collection and Analysis)
Nikolaos Limnios, Universitite de Technologie de Compiegne, France, (System Safety and Reliability Modelling, Dependence, Dynamic Reliability)
Marvin Rausand, Norwegian University of Science and Technology, Norway, (Risk Assessment and Management)
Enrico Zio, Politecnico di Milano, Italy, (Maintenance Modelling and Optimisation)

Seminar Session Speakers

Authors of Contributed Lectures and Papers

...

Organising Board

Agnieszka Blokus-Roszkowska
Tymoteusz Budny
Sambor Guze
Bozena Kwiatkowska-Sarnecka
Joanna Soszynska

International ESD Workshop (IEW)
May 14-17, 2007

The 2007 International ESD Workshop (IEW) will focus on robust design and test of ESD protection for state-of-the-art integrated circuits as well as advanced semiconductor system on chip (SOC) and system in package (SIP) applications. Through technical presentations, seminars, un-refereed poster sessions, discussion groups and special interest groups, a unique and informal environment is provided for understanding and sharing ESD technology. The IEW is closely aligned with the EOS/ESD Symposium for collaborative conference activities. In addition, the IEW will be very similar in format and held at the same location as the IEEE Integrated International Reliability Workshop. The IEW will be held May 14-17, 2007 at the Stanford Sierra Conference Center in Lake Tahoe, CA.

Visit <http://www.esda.org/iew.htm> for more further information on the IEW.

Call for Papers

ISSAT International Conference on Modeling of Complex Systems and Environments

General Chair

Hoang Pham
Rutgers University, USA
hopham@rci.rutgers.edu

General Co-Chairs

Ho Thanh Phong
HCMC International Univ, Vietnam
htphong@vnuhcm.edu.vn

Dong Ho Park
Hallym University, Korea
dhpark@hallym.ac.kr

Program Chair

Eric T. T. Wong
Hong Kong Polytechnic Univ., HK
mmttwong@polyu.edu.hk

Local Arrangements Chair

Ho Thanh Phong
HCMC International Univ., VN

Int'l Program Committee

Jian Chen
Tsinghua University, China
Tommy K.L. Choy
HK Polytechnic University, HK
Kevin Edwards
Derby University, UK
Mohamed Eid
CEA DEN DM2S, France
Emilio Ferrari
University of Bologna, Italy
K.Y. Fung
HK Polytechnic University, HK
Hong-Zhong Huang
UESTC, China
Krzysztof Kolowrocki
Gdynia Maritime Univ., Poland
Chin-Diew Lai
Massey Univ., New Zealand
Alan K.T. Lau
HK Polytechnic University, HK
Randolph C.K. Leung
HK Polytechnic University, HK
Nikolaos Limnios
Univ. Tech of Compiegne, France
Krishna B. Misra
RAMS Consultants, India
Jung Won Park
Korea Testing Lab (KTL), Korea
Nam V. Pham
VINA ACECOOK, Vietnam
Vadim Seleznev
Physical & Tech Center, Russia
Min Xie
National University of Singapore



MCSE 2007

Ho Chi Minh City, Vietnam
16-18 July 2007



SPONSOR

The International Society of Science and Applied Technologies (ISSAT)
In cooperation with IEEE Reliability Society

THEME

The ISSAT International Conference on Modeling of Complex Systems and Environments (MCSE) is an international forum for presentation of new results, research development, case studies and applications in modeling the complex systems and environments. Papers may address any aspect of complex systems and environments. Papers dealing with case studies, experimental results, or applications of new or well-known theory to the solution of actual complex systems and environments are of particular interest.

TOPICS OF INTEREST

- ✓ Modeling and Analysis for Complex Data Problems
- ✓ Performability/Availability/Risk Complex Modeling
- ✓ Performance Computing
- ✓ Industrial Automation and Maintenance Plants
- ✓ Systems and Software Safety and Security
- ✓ Modeling Performance Measurement and Process
- ✓ Data Mining and Analysis
- ✓ Biological Information Processing
- ✓ Soft Computing for Complex Multiple Decision Making
- ✓ Integrated Information Management
- ✓ Managing Information Quality in Complex Environments
- ✓ Optimization of Complex Dynamic Systems
- ✓ Lessons learned on developing new products and fielded products
- ✓ Challenges in Dynamic and Complex Environments

SUBMISSION OF PAPERS

Submit a two-page abstract or a full manuscript of no more than 15 double-spaced pages. A two-page Abstract of Paper, in English, must be informative and structured as follows: Title and Problems addressed; Work to be described; Results and conclusions anticipated.

Each submission must include the authors' names, affiliations and complete email addresses. **All Abstract/Papers should be submitted electronically in PDF or Word, by March 1, 2007, to Conference Secretary at mcse@issatconferences.org**

IMPORTANT DATES

Submission of Abstract/Papers
Submission of invited sessions
Notification of Acceptance
Camera-ready Papers Due

March 1, 2007
February 15, 2007
March 30, 2007
April 30, 2007

All submitted papers would be reviewed for merit and contents. Accepted papers will be published in the Conference Proceedings. Outstanding papers will be considered for publication in a special issue of an International journal and an edited book by Springer.

CALL FOR PAPERS

The First IEEE International Workshop on
Testing Emerging Software Technology (TEST'07)

in conjunction with COMPSAC07
Beijing, China, July 24, 2007

THEME OF THE WORKSHOP

Costs entailed by software failures demonstrate that the systematic development of software in a certain quality is still a challenge, even after decades of research. A reason for this can certainly be found within the single projects. Often, known techniques of quality assurance are not employed as required due to deadline and budget restrictions. However, another reason is also the lack of techniques for quality assurance, software testing in particular, for specific types of software, such as software developed according to specific programming and modeling techniques or software using certain technologies.

In recent years, various approaches have been proposed for software development. These approaches range from technologies such as the EJB component model to methodologies such as aspect-oriented programming. Even though these approaches have obviously the potential to improve software development in a certain aspect, they often face the tester with new challenges. The theme of the proposed workshop is efficient and effective testing of emerging software technology. It focuses on such emerging technologies and considers the testing of respective applications.

Emerging technologies considered include
but are not limited to the following:

- * Component-based systems
- * Aspect-oriented development
- * Model-driven development
- * Web-based applications
- * Web service applications
- * Mobile application development
- * Wireless systems and applications
- * Service-oriented systems and architectures
- * Agile software development
- * Pair programming

GOALS OF THE WORKSHOP

This workshop is intended to provide an effective forum for researchers and industry practitioners to exchange innovative ideas and state-of-the-art research, share experience and lessons learned from academic research projects as well as real world projects, and discuss issues, challenges, needs, and solutions in the verification, validation and quality assurance in software development using emerging technologies. Topics for submission include, but are not limited to, the following:

- * Test models, methods, and coverage criteria for emerging technologies
- * Innovative verification and validation methods and tools for emerging technologies
- * Design for testability for emerging technologies, including built-in test or self-test techniques
- * Regression testing issues, strategies, and techniques
- * Test automation, tools and frameworks for emerging technologies
- * Testability analysis for emerging technologies
- * Reliability models, and quality metrics for emerging technologies
- * Performance evaluation models, measurements, and tools for emerging technologies
- * Quality assurance issues, challenges, processes, models, and methods
- * Industrial and academic case studies and experience reports on testing and quality assurance for emerging technologies

HISTORY:

The workshop aims at attracting both researchers from academic and industrial institutions and practitioners from industry. It is a merger and expansion of the International Workshop on Quality Assurance and Testing for Web-Based Applications (QATBWA) and the International Workshop on Testing and Quality Assurance for Component-Based Systems Testing Component-Based Software (TQACBS).

PROGRAM COMMITTEE

Fevzi Belli, University of Paderborn, Germany

T.Y. Chen, Swinburne University of Technology, Australia

Shing-Chi Cheung, The Hong Kong University of Science and Technology, Hong Kong

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IMPORTANT DATES

Feb. 23, 2007: Deadline for paper submission
Mar. 30, 2007: Decision notification (electronic)
Apr. 30, 2007: Camera-ready copy and author registration due

SUBMISSION

Papers must be submitted electronically via the TEST'07 Submission Page at <http://compsac.cs.iastate.edu/2007/TEST/>. Please follow the instructions posted on the web site.

The format of submitted papers should follow the guidelines for IEEE conference proceedings. All papers will be carefully reviewed by at least three reviewers and acceptance depends on reviewer feedback.

Accepted papers will be published in the workshop proceedings of the 31st IEEE Computer Software and Applications Conference (COMPSAC 2007). At least one of the authors of each accepted paper must register as a full participant of the workshop to have the paper published in the proceedings.

ORGANIZERS

Program Chairs

Sami Beydeda ZIVIT Germany
sami.beydeda@zivit.de

David Kung University of Texas at Arlington USA
kung@cse.uta.edu

Steering Committee

Sami Beydeda ZIVIT Germany sami.beydeda@zivit.de
Jerry Gao San Jose State University USA jerrygao@email.sjsu.edu
David Kung University of Texas at Arlington USA kung@cse.uta.edu
Hong Zhu Oxford Brookes University UK hzhu@brookes.ac.uk

INQUIRIES

For TEST, please contact the Workshop Organizers.

For COMPSAC, please

visit <http://conferences.computer.org/compsac/2007/>.