Dear Reliability Society Colleagues:

In this message, I wish to update you on the “State of the Society” since my last message in January.

As I stated in the last message, our Society is doing everything possible to reduce costs and generate additional revenue. This situation is not unique to us, but is being required of all societies by the IEEE Institute. So far, I am pleased to announce that in 2004, we expect, given the current budget projections that we have turned into the Institute, to end 2004 with approximately $100K in surplus. That is a huge change from the loss of approximately $250K that we suffered in 2002. Also, we are working with Matt Loeb at IEEE Headquarters on formulating a new initiative that offers better access to electronic information related to the fields of reliability and security. If funded, this initiative will allow the Reliability Society to offer technical information to members and non-members, even if IEEE does not own the copyright to that information. This is a new business model for IEEE, and our Society will be the first Society to try this “virtual shopping mall” model out.

The benefit of attempting such a project is three-fold: (1) All costs incurred to build this virtual mall are covered by the Institute and not our Society, (2) It allows our Society to broaden its scope from being viewed as a narrowly focused organization on reliability to being viewed as a society that also has offerings in the security arena, and (3) It offers our Society the opportunity to create a new product line without having to go through the usual process of getting new publications approved or creating new conferences. In short, while there is no guarantee that this model will boost our revenue, I am pleased that our Society will be the first one to offer this specific product line in this form of delivery.

Other news that I’d like share with you is that our next ADCOM meeting will be in late July in Manchester, New Hampshire. We will hold an EXCOM meeting on Friday the 24th, our ADCOM meeting will be on Saturday the 25th, and our Chapters Congress will be on Sunday the 26th. I have personally invited two guests to the ADCOM meeting, Matt Loeb, from IEEE Headquarters, and Jack Burns. Jack Burns attended our ADCOM meeting (approximately a year ago) to discuss the formation of a new IEEE society devoted to product safety. Last week in Nashville at the TAB caucus, the Product Safety Society was officially voted into existence, and Jack will be attending to request that one member of our ADCOM sit on the interim Board of Directors of this newly formed IEEE society. While some in our Society may feel that this new society is a competitor of the Reliability Society, I believe that we can synergistically work together to benefit both parties via joint offerings, conferences, and joint membership discounts.

continued on page 3
Editor’s Column

From the Editor
We want to hear from you, please submit your articles, comments or question by email if possible. Thanks,

Dave Franklin Editor

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ADVERTISING RATES

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IEEE Reliability Society Newsletter (ISSN 1059-8642) is published four times a year in January, April, July and October by the Reliability Society of the Institute of Electrical and Electronic Engineers, Inc. Headquarters: 3 Park Avenue, 17th Floor, New York, NY 10016-5997. Sent at a cost of $1.00 per year to each member of the Reliability Society. Printed in U.S.A. Periodicals postage paid at New York, NY and at additional mailing offices. Postmaster: Send changes to Reliability Society Newsletter, IEEE, 445 Hoes Lane, Piscataway NJ 08854.

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President’s Message Continued

In closing, I’d like to leave you with a little information concerning the demographics of our Society. This is information that IEEE is tracking across all societies more vigorously as IEEE attempts to get a better feel as to who joins IEEE and its societies and why they do so. As you may know, IEEE membership has been on a slow decline, and therefore the Institute is attempting to attract new members, create new product lines, new pricing models, etc. And to do so, accurate demographic information is very important to achieve those goals.

According to the Institute (as of March 27, 2003), we have 2,196 members of all grades. (That number is a little low since some folks are slow to get their annual renewals turned in.) The average age of a member of our Society is 49.8 years of age. 62.1% of all members are in the United States, and 11.4% of our members are life members and 8.8% are senior members. Student members are only 4.8%, which clearly provides an opportunity for growth. Most of our members stay with our Society for a long time: 16.9 years. 28% of our members belong only to the Reliability Society, 29.1% belong to two societies, and 16.1% belong to 3 societies. And 9% of our members belong to more than 6 societies. (I have no idea when they find the time to read all of that mail they must receive.) We are 92.3% male, 6.6% female, and 1.1% unidentified.

Have a terrific summer ’03!

Jeffrey Voas
President

Chapter Activities

Chapters News

Baltimore

Walter E Willing

Binghamton

Jefferson D Bronfeld

Boston

The Boston Chapter held three meetings since our last report in January’s Newsletter.

In February, Professor Nasser Fard of Northeastern University presented his work in the area of “Reliability Evaluation of Multistage Interconnection Networks (MINs).” MINs are one class of interconnection networks that can support large-scale parallelism by connecting input devices to output devices through a number of switch stages, where each switch is a crossbar network. The number of stages and the connection patterns between stages determine the routing capabilities of the networks. Professor Fard reviewed the different types of MINs, discussed several approaches for evaluating their reliability, and proposed ways of making them more reliable.

In March, Victor Avelar of American Power Conversion (APC) gave a talk on “Understanding Reliability and Availability.” An overview of the high reliability/availability industry through the eyes of an uninterruptible power supply manufacturer was provided. The basic elements behind reliability and availability, including the analysis methodology employed by APC’s Availability Science Center, were discussed. Victor concluded his presentation by describing practical data center imperatives and design practices.

In April, we held a Spring Lecture Series on “Design for Reliability (DfR) – Confidently.” During the first lecture, Dana Crowe of M/A-Com (Tyco Electronics) discussed the bridge between DfR and Six Sigma, focusing on accelerating business goals and improving customer communications. During the second and third lectures, Joe Dzekевич of Raytheon and Gene Bridgers of Symacore Networks discussed the application of statistical confidence to a wide range of DfR tasks. They used many practical examples to illustrate both good and bad implementations, and demonstrated several software tools.

For more information on Boston Chapter activities, please visit our web site at http://www.channel1.com/users/iee/home.html.

Jeff Clark, Avici Systems
Boston Chapter Chair
jaclark@ieee.org

Central New England

See Boston Chapter activities.

Jeffery A Clark

Chicago

Frank D Straka

Cleveland Chapter

The Cleveland Chapter had four meetings in this period.

PAST MEETINGS

For the October meeting, Jeff Haas, Chief of the Research Testing Division and a long-time member of the Supervisors Club, presented a summary of the Engineering and Technical Services Directorate realignment. E&TSD (7000) is the organization that most of the current Supervisors Club members reside in. It is also the organization that a large number of the retired members worked in during their careers. Jeff provided the background of why the Directorate was going through reorganization, presented a comparison of the old organizational structure to the new one, and finished the presentation with a summary of key issues that the Directorate will be dealing with over the next several years.

Our November meeting presentation, “Behind the Scenes of Local Television News,” was given by CSU Communication Professor Michael Rand. Surveys indicate more than 80 percent of Americans now rely on local television news as their primary source of news. But, not many of us actually know how decisions are made as to what we see and who are the people who make those choices, unless you attended this meeting. Prof. Rand, who produced newscasts in Cleveland and Kansas City and TV magazine shows in Tampa, Dayton and Richmond, explained who the players are and how decisions are made. What often appears as bias is merely incompetence according to Prof. Rand. He also showed a video produced by CSU students about directing television newscasts. The video was from
a DVD produced in the CSU Department of Communication.

**We had two activities in December:**
On Tuesday, Dec. 3, 2002, the Supervisors’ Club took a tour of the new Browns’ Stadium in downtown Cleveland. We were given a guided tour through one of the two Club seating areas, a loge, the press box and one of the two visitors’ locker rooms. Several of us ventured on to the playing field just to see the view from there. This is probably the one and only chance most of us will ever have to visit any of these areas! After the tour we were served lunch of either hamburgers or chicken breasts. The entire affair lasted for about 2.5 hours. We are planning a second tour in the spring. This may be to the new Indians’ Stadium or possibly a surprise destination- Bob Fowler, Tours.

Vince Conrad and Ernie Bertone organized the “Mid Year Social.” Bob Manly acted as host. The winter social was lightly attended this year, perhaps due to the cold winter weather and the many snow birds in the Club. However, those who did make it to the Guerin House were in joyous Holiday Spirit and enjoyed the food, drink and camaraderie of those present. The festive group came just shy of breaking into Christmas carols.

**CHAPTER ACTIVITIES**

We are supporting ’04 RAMS on the Management Committee, with papers, tutorials, and session suggestions. The Chapter Officers are all working to make it a big success.

We are working to get support for the Cleveland AUTOTESTCON Conference Committee from the Cleveland Engineering Center; WPAFB, FAA in Cleveland, and Cleveland State University. The Chapter would like to bring a major Conference to Cleveland.

The Assurance Technology Symposium will be held at the Ohio Aerospace Institute in June 2003. There will be 24 presentations, 20 exhibits, and splinter meetings in the two and one half day symposium. An award for the best presentation and exhibit will be given. This symposium provides 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 cooperation with the Projects, Centers, and the SMA community.

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

**Regards,**

Vincent Lalli, Chair
Vincent.R.Lalli@lerc.nasa.gov

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**Denver/Pikes Peak**

Samuel J Keene

**IEEE Dallas Section Chair**

dpb@engr.smu.edu

**Japan Chapter**

The Japan Chapter established a new steering committee on 1 January 2003. The committee members are:

- T. Inagaki, Professor, University of Tsukuba (Chair)
- K. Suzuki, Professor, University of Electro-Communications (Vice Chair)
- K. Suyama, Associate Professor, Tokyo Univ. of Mercantile Marine (Secretary)
- T. Shimokawa, Professor, Tokyo Metropolitan Institute of Technology (Treasurer).
- The help of the following two advisory members are also available:
  - Y. Sato, Professor, Tokyo Univ. of Mercantile Marine (Past Chair)
  - S. Fukuda, Professor, Tokyo Metropolitan Institute of Technology (Sr. Past Chair).

Although the members are inside academia, each of them has close contacts with people in industries. The committee is now drawing up plans that can be useful and beneficial for them as well as university students.

Let me tell you one of my research concerns. My deepest interest lies in reliability and safety of human-machine systems. Ironically, high reliability of smart machines has sometimes degraded safety of human-machine systems: Operators placed too much trust in their smart machines, and became complacent. There are various factors that may lead to inappropriate trust in machines. Designing safety of human-machine systems is challenging in “the age of smart machines.”

When I was Vice Chair of the Japan Chapter, I tried to introduce safety related aspects into activities of this Chapter. I organized two symposia:

(a) **Human Intelligence and Machine Intelligence – Their Confrontations and Collaborations in an Emergency (December 13, 2001),** and

(b) **Risk Perception and Legal Responsibilities (December 20, 2002),**

In the first symposium, by taking a near-miss incident occurred over Japan in 2001, we investigated present state of affairs in the air. Dr. Ozeki, researcher of TCAS at the Electronic Navigation Research Institute, Capt. Tsukahara of the Japan Air System, and Mr. Kawano, a former Air Traffic Controller (ATC), delivered lectures from their viewpoints, and a panel discussion followed. Many pilots, accident investigators, and aviation researchers attended the symposium, as well as reliability and safety engineers in industries. The discussion session with audience came to an end an hour later than the originally scheduled closing time.

In the second symposium, we had three lectures. Dr. Mikami, Professor of psychology at Toho University talked about difficulties and biases in human risk perception in disastrous situations. Capt. Nishimura of All Nippon Airways described risk-based decision-making and safety control maneuver in critical situations. Dr. Ikeda, Professor of criminal law at Tokai University explained the fault liability principle and the principle of liability without fault. Researchers and engineers in various industries including airlines, automobile and nuclear power plants attended the symposium. The symposium seemed to be successful in demonstrating the need for a new system of law that can take into account psychological aspects of human, characteristics of large technological systems, and their complex interactions.

I would like to express my sincere thanks to Miss Megumi Komata at the Secretariat of IEEE Tokyo Section for her great support, including prompt delivering email announcements to members of the Japan Chapter. Without her help, it would be hard to make chapter activities beneficial and enjoyable.

Toshiyuki Inagaki, Chair
Japan Chapter
Santa Clara Valley

After being dormant for a few years, the Santa Clara Valley Chapter began having chapter meetings in 2002. Presentations were made on reliability best practices, IEEE 1413 reliability prediction guide, accelerated testing, software reliability, and monitoring IC degradation.

Our 2003 meetings began with panel discussions on conference papers. In January we had a panel discussion of papers from the 28th International Symposium for Testing and Failure Analysis (ISTFA) led by Art Rawers and Don Staab. In February Fred Schenkelberg coordinated a panel discussion of papers from RAMS. At our March meeting, Jon Elerath will make a presentation on disk drive reliability.

We have scheduled future meetings on reliability activities throughout the product life cycle, design for testability, soft errors, and life-cycle cost models.

For more information on Santa Clara Valley Chapter activities, please visit our web page at http://www.ieee.org/scv/rs.

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South Plains

Michael E Parten

Switzerland

Mauro Ciappa
Switzerland Chapter Chair

Toronto

Walter W Zessner

Washington DC, No VA

Kenneth P La Sala

ADCOM Meeting

IEEE Reliability Society
AdCom Agenda
Tampa Florida
January 25-26, 2003

Attendees
Sam Keene, Jeff Voas, Lon Chase, Marty Shooman, Ted Freeman, Bob Gauger, Bill Tonti, Loretta Arellano, Richard Kowalski, Ken LaSala, Dennis Hoffman, John Healy, Bob Loomis, Dick Doyle, Shuichi Fukuda, Scott Abrams, Christian Hansen, Alan Street, Ann Campbell, Marsha Abram, Dave Franklin, Joe Fragola, Takehisa Kohda.

Call to Order - D. Hoffman
Introduce new AdCom members and new officers - D. Hoffman, and AdCom Appointment Concurrence - J. Voas. The agenda and the October minutes were approved and reviewed for action items.

October minutes approved with the condition that the pubs submittal was completed (done).

The chief mandate of this meeting was to develop revenue and cost objectives that would allow RS to break even financially by 2004. This goal was achieved through several initiatives, especially those brought forth by Ann Campbell and Bob Loomis. Collectively, these initiatives were:

1. The number of AdCom meetings will be reduced to 3 in 2003 (January, March and July) - <17K savings> An alternative: 2 meetings per year .
2. Eliminate the annual Tech Ops meeting and replace with monthly teleconferences <6K savings>
3. Investigate eliminating the annual Editors meeting <6K savings>
4. Marsha will investigate the return of 50% of TSM revenues and whether this will continue if RS unbundles their publication
5. Increase dues to $30/year was approved
7. Unbundle RAMS and IRPS proceedings
8. Increase the transactions page count by 16 pages publishing more articles and letting them run longer.
9. Offer a public class in software reliability in September/October in Seattle. Ann M to put together with tech ops review. Jeff will contact Microsoft to support the course. John H will proof read course material.
This budget will be presented to the IEEE Fincom in February and will be formally presented to the IEEE on May 2003.

This Newsletter needs more technical content. All Tech Ops chairs should submit a technical article due March 1. The newsletter should advantageously move to look more like a magazine in its contents. The newsletter could have links to stories and to vender ads and their web pages.

Managing Editor position
Ralph Evans Managing Editor’s Contract will be extended one more time for two years ending December 2004. Christian will initiate a search committee, chartered to identify a replacement for Ralph, who has served the Reliability Society in such a distinguished fashion for many years now. Bob Loomis will serve on that committee also. It was suggested to ask Ralph to participate also since he knows the job best. The committee needs to develop selection criteria immediately. The publication of the transactions should move to electronic delivery and take advantage of the latest desktop publishing technology.

Meetings:
Friday March 28 Excom in Dallas, Saturday March 29 Adcom Dallas
Friday July 25 Excom New England, Saturday July 26 AdCom New England, A Chapters Congress will be held in conjunction with the July AdCom meeting Sunday July
AdCom approved RS support of reciprocal advertising space for Reliability Society booth at EOSED (Las Vegas) and ISSRE (Dallas). Marsha will represent RS at the PACE meeting in Seattle March 27-29, 2003. Subject is “building skills for technical principles and managers”.

Video Marketing
Sam Keene will explore marketing RS tapes through various vendors and also pursue Anthony Chan’s offer to provide RS with a course he teaches in Statistics and Decision Analysis.

Short course direction
1. Could tailgate on conferences
2. Package entire product line (all videos, multiple dates, multiple offerings, multiple locations)
3. 2 to 3 days is best duration for maximizing return over cost
Open Questions
1. Should RS consider a new name (branding change)?
2. Should RS participate with the Computer Society on the new transactions on “Dependability”?-
3. The newsletter could have embedded abstracts and active links to full stories if it were delivered on line. Advertisers could also have links to their web pages.
4. We would need paper copies of transactions for libraries and the APP.
5. Should RS start its own conference and own it totally?
6. How do we handle receipts? Credit card purchases?

Savings Summary
Unbundled Transactions and newsletter $70K, Unbundled RAMS and IRPS 27.5K, 16 Extra pages of Rel Transactions 22K, Eliminate 1 AdCom Meeting per year 17K, Eliminate Editors and Tech Ops meetings 8.5K for a Total of $145K.
The meeting was adjourned.

IEEE Reliability Society AdCom Agenda March 29, 2003
Approval of TAMPA’03 Minutes (Sam Keene)
President’s Report – TAB Update (Jeff Voas)
- Proposed Product Safety Society
- Outcome of fincom presentation
- $22.5K vs. $11 page count discussion for ’04
- Board of Governors decision on long investments (Bears vs. Bulls)
- Subsequent discussions with Communications Society, Computer Society (Trans. On Dependability with Carl Chang and Willis King), Division XIII Director, Jim Isack, etc.)
- Joint Society Grand Challenge for DARPA
- Competitive bids for conferences
- DoD 30-40K seminar on software reliability
- Problem with the current Fellow Nomination Process?

Special HQ Guest
- How to get HQ to help us start new initiatives (Matt Loeb)

Treasurer’s Report (Dick Kowalski)
- Finals from 2002
- Current spreadsheet projections for ’03 post TAMPA’03
- Initial Budgeting for ’04

VP Meetings Report
- End of year EXCOM meeting discussion? Need one?
- Conference Closeouts (Ann Miller)
- Overall success of RAMS’03 (open)
- Action Item Updates (Ann Miller)
- ITS Council (Ted Freeman)
- IRPS’03 Preview (Ann Campbell or Bill Tonti)
- Need for a letter from VP Pubs to financially sponsored conferences requesting proof of surplus?

VP TechOps Report
- Action Item Updates (Bill Tonti)
- ATR (Bill Tonti or Christian Hansen)

VP Publications Report
- Updates TBD (Christian Hansen)
- Action Item Updates (Christian Hansen)
- Ralph Evans (Christian Hansen)
- Newsletter (Dave Franklin)
- Transactions (Way Kuo)

VP Membership Report
- Updates TBD (Ann Campbell)

New Motions:
- Limiting travel reimbursement requests motion

Sr. Past Pres. Report (Ken LaSala)
- Content TBD
Jr. Past Pres. Report (Dennis Hoffman)
- Content TBD

Chapter Congress Update (Loretta Arellano)
- New/Old Business (Revenue Generation and Cost Savings)
- Val Monshaw’s suggestions for additional cost/revenue savings
- Generating a computer/security offering
- Creating new ad hoc exploratory committees focused on specific types of revenue generation
- Acceptable approaches to funding new initiatives with a negative ’03 budget projection, given IEEE rules for tapping your surplus

TechOps
William R. Tonti VP
Standards and Definitions

- Software Reliability
- Industrial Systems
- Reliability Design
- Information Technology & Communications
- CAD, Concurrent Engineering, and Expert Systems
- Computers, Information Systems, & Telecommunications
- Emerging (New) Technologies
- Energy Systems Reliability & Energy Technology Assessments
- MicroElectronic Technologies
- Medical Systems
- Human Interface Technology
- International Reliability
- Maintainability
- Consumer Electronics
- Aerospace & Defense Systems
- Reliability
- Mechanical Reliability
- Nuclear Reliability
- Quality Assurance Technology
- Warranty
- Systems Screening and Testing
- System safety
- Sensors
- Total Quality Management (TQM) & Process Reliability
- Vehicular Technology & Transportation Systems
- System safety
- Sensors
- Reliability
- Mechanical Reliability
- Nuclear Reliability
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- Quality Assurance Technology
- Warranty
- Systems Screening and Testing
- System safety
- Sensors
- Total Quality Management (TQM) & Process Reliability
- Vehicular Technology & Transportation Systems

Relex 7.6 Raises the Bar on Modeling Product Reliability

Greensburg, PA, February 14, 2003 —— Relex Software Corporation, the worldwide leader in reliability analysis software, today announced the general availability of Version 7.6 of the Relex Reliability Software Suite, a comprehensive collection of analysis tools for evaluating and improving product reliability. In addition to introducing two new reliability prediction standards and providing numerous other enhancements to its many software modules, Relex 7.6 offers a brand new System Optimization and Simulation (OpSim) module for modeling very complex, real-life maintenance scenarios.

“With Relex OpSim, you can provide corrective, preventive, and inspection maintenance information, sparing data for both onsite and offsite component spares, and repair data for failed components fixed at a repair shop,” said Kevin Van Fleet, Vice President of Relex Software Corporation. “Because Relex OpSim includes the concepts of capacity, age adjustments for standby and spare components, renewal percentages for imperfect repair, and discard, repair, and replacement percentages, our users can strengthen their existing system analyses and determine how best to improve reliability and availability while minimizing downtime and total costs.”

Based on parameters that can even include transportation times, storage and transportation costs, and replenishment levels for spares, Relex OpSim is able to calculate the optimal number of onsite and offsite spares for each system component. According to certified reliability engineers at Relex Software Corporation, Relex OpSim is the only advanced modeling tool that calculates results and performs optimizations for not only a specified point in time but also for the steady state. While competing tools always use simulation to model system performance, Relex OpSim uses the provided component data to determine whether to use analytical analysis or simulation.

When Relex OpSim is used to optimize the number of onsite and offsite spares, you can either select the traditional goal of minimizing total system cost or choose instead to maximize reliability, mean availability, or mean capacity. In addition to providing these several different goals for spares optimizations, Relex OpSim is unique in that it supports additional constraints upon the selected goal. For example, you can specify a maximum available budget and a minimum desired capacity, availability, and mean capacity to be factored into the spares optimization process.

“Relex OpSim also provides for optimizing preventive and inspection maintenance intervals, regardless as to whether maintenance plans are based on calendar days or operating times,” said Van Fleet. “The goal for an interval optimization can either be to minimize total system...
cost or maximize system availability. Specified system constraints are also factored into interval optimizations.” Additional Relex OpSim features include the ability to define common spares pools, repair resources, repair teams, and alternative repair resources, such as independent contractors who can perform maintenance tasks when primary repair resources are not available. “The new Relex OpSim module allows our customers to effectively and realistically model very complex system maintenance activities,” added Van Fleet. “Customers who lack confidence in their own ability to set up such complex maintenance models themselves can turn to Relex OpSim consulting services for expert advice.”

Enhancements to the Relex Reliability Prediction module include the incorporation of the 299B Parts Count model and the RDF 2000 model. The 299B Parts Count method is a companion to the 299B Parts Stress method for the Chinese Standard GJB/z299B. RDF 2000 is a newer version of the CNET 93 standard. It uses cycling profiles and their applicable phases to provide a completely different basis for failure rate calculations. Additionally, the Relex PRISM reliability calculation model now supports the updated Process Grades files in version 1.4 of RAC PRISM, a product of the Reliability Analysis Center (RAC).

Additionally, enhancements were made to the Relex RBD and Relex FMEA/FMECA modules. In Relex RBD, an improved interface for entering RBD figure calculation properties was implemented to ease data entry, and the Monte Carlo simulation engine was modified to improve calculation performance. In Relex FMEA/FMECA, support was added for both RAC FMD-97 and HAZOP (Hazard and Operability) data. Supplied by the Reliability Analysis Center, FMD-97 data specifies component failure modes and the percentages of time that these modes are responsible for a failure. HAZOP is a method for identifying potential hazards and operability problems caused by deviations from the design intent of both new and existing processes.

For more information on Relex Software Corporation, an ISO 9001-certified and TickIT 2000-certified company, call 724.836.8800 or visit www.relexsoftware.com.

Call for Participation

ASTR 2003
The IEEE /CPMT Accelerated Stress Testing & Reliability (ASTR) 2003 Committee invites you to plan ahead and considering participating in the 2003 ASTR Workshop to be held Oct. 1-3, 2003 at the Seattle Hilton.

If you are interested in preparing and presenting a paper and/or tutorial please contact one of the committee members identified below.

Over the last few years, Accelerated Stress Testing (AST) has been embraced by an ever-widening array of worldwide companies seeking to reconcile the need for the highest quality product with the necessary push for early time-to-market. The purpose of the AST Workshop is to share ideas on better ways of accelerating and detecting hidden defects, flaws, and weaknesses in electronic and electro-mechanical hardware that would result in failures during usage. These techniques are focused on testing electronic hardware to destruction limits and root cause investigation to determine the physics-of-failure. The goal of AST is to produce mature products at market introduction and, in making it robust; the product can be screened for manufacturing defects with high combined stresses (beyond end-use specifications) for shorter lengths of time.

TUTORIALS: The all day tutorial program will be held on the first day of the Workshop and features well-respected experts sharing their experiences and hard-learned lessons. Two parallel sessions, Basic AST and Advanced AST Subjects, will ensure that experienced practitioners as well as those who are just entering the field will find useful and interesting presentations.

TECHNICAL SESSIONS: The two-day workshop program will present new and innovative Accelerated Stress Testing techniques in use today. Past workshops featured speakers discussing their accomplishments in providing accelerated reliability testing for a wide range of products as well as failure analysis techniques and data analysis.

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RAC is a DoD Information Analysis Center Operated by IIT Research Institute
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New technologies for engineering, manufacturing and testing are rapidly developing, changing and expanding. Products must meet all customer expectations for the product manufacturer and distributor to penetrate the market and retain or increase their market share. To facilitate this, cost effective techniques and innovations to assure a high quality product that is reliable and maintainable are more essential than ever. Just meeting basic engineering and manufacturing requirements does not provide the competitive edge needed today. To survive in this market, managers and engineers must sharpen their competitive edge through the cost effective application of reliability and maintainability techniques.

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