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Reliability Society

NEWSLETTER

July 1997

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President's Report

The March AdCom was one of our most well attended AdCom meetings, which included representatives from our Switzerland and Tokyo chapters. The Society annual Chapter awards were presented at the evening banquet. Bud Trapp, our Chapters Coordinator, presented awards to the chapters. Congratulations to all the chapters who received awards: Boston (1st Place), Switzerland (2nd place), Dallas and Denver/Pikes Peak (3rd place), Baltimore, Cleveland, Los Angeles, Philadelphia, Santa Clara Valley (CA), Singapore, Tokyo and Washington DC/Northern Virginia. Another thank you goes to Chuck Rice, who tested us at the banquet with a personality test.

The Reliability Society, along with most other societies within the IEEE, has been decreasing in membership. We want to make membership a rewarding experience and have taken steps to develop programs and benefits to strengthen the Society and the Reliability discipline. We are developing Standards and educational videos, participating in related conferences and working to providing the support to our chapters. We need your help in identifying worthwhile activities and then your help to fulfill these goals and accomplishments. Please contact myself or any of the officers with ideas and support.

The IEEE has developed programs to strengthen the membership, one such program is Graduates Of the Last Decade (GOLD). This is a program to retain graduating seniors by providing programs specifically for them. There has been much success in this effort. We, also, should be nurturing our newer engineers, teaching them the importance of designing in Reliability. We should encourage them to participate in the Societies activities to broaden their careers and thereby growing the Society. Mentor those at your workplace - it will be a win-win situation.

The next AdCom will be in Albuquerque, NM in October and then in January in Anaheim, CA. Check your schedules to possibly join us at one of our meetings and meet the officers.

Loretta Arellano
Reliability Society President

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EDITORS COLUMN

There's nothing more certain than change in this world. I will be passing the pen (or keyboard) to another editor in October. Dave Franklin will assume the post of newsletter editor. Dave is currently an AdCom member. Bob Loomis will assist Dave as the webmaster for our Society's WWW page.

Over the past 6 years. I've had the opportunity to work with four reliability society presidents. It's been an interesting (and fun) term as newsletter editor because of the changes that occurred along the way. Shortly after I started, IEEE helped me revise the format of our newsletter to give it a new look. When internet and WWW started to become available to many of our members I started posting our newsletter on the WWW in 1995. It was a wonderful opportunity to be part of the beginning of the WWW as more of use became wired-in. Just this month our newsletter web site is being moved from the University of Maryland site to IEEE HQ. The new URL is shown in

the banner line on the cover of the newsletter. I wish to thank Marvin Roush and the others at UMD for all their help in providing support for our newsletter on their WWW site.

Over the last year you likely have seen the increase in advertising which bodes well for our field. If advertising is any indication, interest in Quality & Reliability is not waning.

To all our members, it's been a pleasure working with our AdCom and I would encourage you to become involved.

Bruce Bream
Editor
bruce.bream@lerc.nasa.gov

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CHAPTER ACTIVITIES

Boston Chapter



Mr. Gene Bridgers receiving a Boston Chapter Appreciation Award from Philip Tsung, Chairman, Boston Chapter. Watching proudly his wife Doris and his manager, Mr. Dana Crow.

Our 35th annual Spring Reliability Symposium on Computer and Communication System Reliability was held on April 24, 1997. It featured a Keynote address on "Managing Large Software Development Projects" by Dr. John Howland of EMC Corp., two tutorials, and eight technical papers. A best paper award selection process was instituted - this year's recipient was Richard Bentz of the MITRE Corp. whose paper was entitled "Experience Report for the Software Reliability Program on a Military Acquisition and Development." Also, we presented a Chapter Appreciation Award to our own Gene Bridgers, to recognize his longstanding technical and personal contributions to our Chapter.

In May, we had a joint monthly meeting with the Boston Section of the ASQC. Giora Kedem of 3COM Corp. spoke on a "Reliability Report Card as a Tool and Methodology for TQM Initiative." We intend to continue with joint meeting/event formats with other organizations when the opportunity arises.

Finally, I would like to announce our newly elected officer slate for next year:

- Chair: Philip Tsung (re-elected to a second term)
- Vice Chair: Giora Kedem
- Secretary: Warren Snow (re-elected to a second term)
- Treasurer: Don Markuson

Please visit our home page at <http://www.channel1.com/users/ieeee/home.html>

Philip Tsung, Chair

PWTSung@aol.com

Dallas IEEE Reliability Society News

The Dallas chapter is completed its 1996-97 session with meetings covering a wide variety of interesting and diverse topics.

Clyde Dunn, Product Development Reliability Manager, TI Semiconductor Group, discussed "FLASH Memory Data Disturb Mechanisms" in our March meeting. This covered write/erase endurance and data disturb; he discussed methods of avoiding these problems through process and circuit solutions. He also talked about future trends, including multi-level storage cells and scaling oxide layers.

In April Michelle Richards, Business Excellence Manager of TI Corporate Services Facilities, presented "Improved Reliability and Efficiency Through Knowledge Based Management". This presentation introduced Facilities' data acquisition and process methods used for problem-solving in TI's 24 hrs/day, 7 days/wk wafer fab operation. Michelle provided examples of how SPC was used to improve specific processes in Facilities applications.

Marv Bellamy of Raytheon/TI, recapped the recent results of the "Environmental Stress Screening 2000" efforts at our May meeting. This project, sponsored by the National Center for Manufacturing Sciences, entailed three companies evaluating their products, using three accelerated ESS processes. This discussion summarized the technologies/processes evaluated and the conclusions reached. The engineering analyses, including test results and cost studies, provided the fodder for informed decisions.

The Membership Chair, Ted Freeman, implemented his successful program of providing attendance forms to those continuing their ASQC RE certifications. This met with enthusiasm from the attendees.

We are looking forward to the 1997-98 session with a new slate of officers, to be chaired by Tim Rost of TI's Semiconductor Group. Besides our usual slate of diverse technical meetings, a new effort will appear on our schedule next year. With the IEEE Components, Packaging and Manufacturing Technology Society, we will co-sponsor the "Workshop on Accelerated Stress Testing" (AST97) in October.

Joe Childs, P.E.
Chair, Dallas Chapter

Los Angeles Chapter

In May an Overview of MS Visual C++ 4.0 Development Environment and the MS Foundation Classes (MFC) was presented by Mr. Mason H. Wexler, Scientist/Engineer, Verification & Development Systems Laboratory, Systems and Software Division, GM Hughes Electronics

The Microsoft Visual C++ version 4.0 Development System for Windows 95 and Windows TN is an integrated development environment for C and C++ applications, with support for multiplatform and cross-platform development. It includes a C++ application framework, the Microsoft Foundation Class Library version 4.0, which facilitates the development of applications for Windows as well as the porting of applications to multiple platforms.

Visual C++ includes a text editor, resource editors, project build facilities, an optimizing compiler, an incremental linker, a source code browse window, an integrated debugger, and Books On-line which are all controlled under a single application development environment called the Microsoft Developer Studio.

The seminar presented an overview of the Microsoft Windows software development using Visual C++. It is assumed that the audience was familiar with at least one programming language that uses programming structures. Familiarity with the C programming

language was not required. Topics covered were:

- Windows programming using the native windows Application Programming Interface (API).
- The Microsoft Windows document-view architecture.
- A tour of the Microsoft Developer Studio.
- A brief overview of object oriented programming and application frameworks.
- An overview of MFC programming.

Mason Wexler is a Scientist/Engineer with Hughes Aircraft Company and holds a B.A in Computer Science from the State University of New York at Potsdam. His currently provides technical support for the engineering computer systems and tools used to develop airborne radar. Mason started his career with IBM Corporation in 1979 and has over sixteen years of experience in software development and systems management.

Our June meeting will feature Richard Fettig's presentation showing how Accelerated Life Testing techniques provide a method to investigate the reliability of electronic devices under extreme operating conditions with a mathematical relationship to normal operating conditions. This involves use of the Arrhenius equations, selection of accelerated parameters and accelerated stress levels. This discussion will focus on the selection of accelerated stress levels in relation to normal operating conditions (i.e., use of temperature to compensate for aging characteristics), for parts within a circuit, and how careful planning will result in a meaningful accelerated test. This accelerated life approach is meant only to verify design life of the unit, and not necessarily to precipitate a specific failure mechanism.

Richard Fettig is the founder of Fettig Research Evaluation Enterprises (FREE Inc). He has been analyzing digital, linear and RF circuits for over 15 years. He has consulted for many aerospace companies on such programs as F-14, B-2, F-22, Space Station, C-17, 777, SDIS, and many commercial products such as network communication servers, communication satellites, etc.

For information on future LA Chapter programs contact the LA Council Homepage .

Dave Franklin
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Philadelphia Chapter

March 18, 1997 Meeting: Utilizing the IEEE to Enhance Your Professional Career

The IEEE has many activities and services to help its members during different phases of their careers: from student to retiree. It is unfortunate that too many of our members are not aware of the possibilities or simply never get around to exploring and taking advantage of what is available. This special IEEE Night consisted of brief presentations (staying technically current, utilizing employment options, and personal finance advantages) by IEEE leaders followed by a panel discussion led by questions and suggestions from the audience. This is a good way for you to take advantage of one of your most important resources, IEEE.

The panel consisted of:

- Merill W. Buckley, Jr., (Moderator), Director of Division VI and past IEEE President
- Dr. Ken Laker, past VP Educational Activities and past Director of Division I
- Dr. Joel B. Snyder, past VP IEEE/USA and past Director of Region I
- Michael J. Sosa, IEEE Staff Director for Financial Services

April 15, 1997 Meeting: Airline Safety: Is It Jeopardized by Increasing Use of Portable Electronic Devices? (Mr. Finbarr

O'Connor)

Since more and more portable electronic devices (PEDs) are being used onboard commercial aircraft, concern over safety of their continued use has heightened. PEDs radiate electromagnetic energy across a broad frequency spectrum which could interfere with sensitive aircraft instrumentation. The Radio Technical Commission for Aeronautics (RTCA) was chartered by the FAA to study the effects of PEDs onboard aircraft and present recommendations on their continued use. RTCA worked for over three years gathering data and testing theories to get a handle on the potential problem and to come up with workable solutions. Learn the steps taken to identify the problem and the recommendations for continued use of PEDs onboard aircraft, contained in the final draft report released by RTCA.

Fulvio E. Oliveto, Chairperson
Tel: (609)722-3147

Tokyo Chapter

Activities of the Tokyo Chapter, which has 163 affiliated members, are now planned and operated by the new Executive Committee led by:

- K. Inoue, Professor, Kyoto University (Chairman) in close cooperation with
- S. Fukuda, Professor, Tokyo Metropolitan Institute of Technology (Vice-Chairman)
- Y. Sato, Professor, Tokyo Univ. of Mercantile and Marine (Secretary)
- Y. Suzuki, Professor, Tokyo Institute of Polytechnic (Treasurer)

and with the help of the two advisory members;

- S. Nitta, Professor, Tokyo Univ. of Agri. & Tech. (Jr. Past Chairman)
- M. Horigome, Professor, Tokyo Univ. of Mercantile and Marine (Sr. Past Chairman).

Since January 1, 1997, we have had the Executive Committee meetings twice, where we discussed this year's activity plan. The goals are (1) to reform the Chapter for the purpose of making it more active and (2) to make closer ties between the headquarters of the Society and the Tokyo Chapter. Among ideas discussed in the Executive Committee meetings are

1. to establish an E-mail network among members and the Chapter,
2. to create our own Internet web pages,
3. to encourage possible volunteers and recommend them to take parts in various activities going on in the Society,
4. to launch a new series of seminars directed to graduate students as well as collage students by active use of the Society's video libraries,
5. to realize two special lectures, one in Tokyo and the other in Kyoto, inviting one of our distinguished lecturers of the Society and so on.

Cooperation of the members of the Tokyo Chapter is strongly requested and any comment on our activity plan are quite welcome.

Koichi Inoue, Chairman
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RS AdCom Meeting Minutes

Adam's Mark Hotel, Denver, CO

April 6, 1997

Attendance:

- Loretta Arellano; 1997 President
- Ken LaSala; VP Technical Operations
- Joe Caroli; Chair, Defense & Standards
- Art Rawers; Education & AdCom Member
- Bud Trapp; Chapters & AdCom Member
- John Adams; Membership VP
- Rick Wells; Guest/Hughes AC
- Paul Gottfried; VP Publications
- Bill Denson; Guest/IITRI
- Marsha Abramo; Reliability Society AdCom Member
- W. Thomas Weir; Senior Past President/Chair Nuclear
- Mauro Ciappa; Member/Switzerland
- Richard Kowalski; Treasurer
- Koichi Inoue; Tokyo Chapter Chair
- Dick Doyle; Jr. Past President
- Sam Keene; AdCom
- Dennis Hoffman; AdCom, VP Meetings
- Kirk Gray; Chair, Denver Chapter
- Marty Wortman; Editor, Transactions on Reliability
- Ann Campbell; Guest/IRPS Vice General Chair

Loretta Arellano called the meeting to order, distributed 1/12/97 minutes, and added items to the agenda.

Introduction of Attendees was completed

Loretta moved to get minutes approved from 1/12/97 - Sam Keene moved to get a new directory together - Loretta then circulated roster for pen-in changes. Bud Trapp suggested that homepages be added. John Adams opposed motion to approve minutes because he was unaware that he had 3 action items from the previous meeting, which he did not attend. The minutes were approved by vote.

Richard Kowalski/ Treasures Report - Presented 1996 and 1997 operating results, long term investment strategies and recommendations for the 1998 budget. A discussion took place relative to improving the services provided by the RS as a tradeoff to profit motive orientation.

Item #1: The AdCom unanimously approved the following three recommendations made by Richard Kowalski: 1. The # of transaction pages permitted in 1998 will be 656 vs. 704 as planned in 1997. 2. Non member price will be \$200 for transactions. 3. Membership dues will remain the same for 1998 as it was in 1997.

Item # 2: 1998 Budget inputs are due to IEEE HQ by mid May.

Dennis Hoffman/ VP Report Meetings- Next AdCom meeting will be in July 97 at the Turf Valley W. of Baltimore, Fall Meeting Albuquerque NM, Jan 98 Anaheim (RAMS), Mar 98 Reno NV. Comments were made relative to strengthening the AcCom/IRPS tie and also on orienting RAMS toward being more of a money maker. Dennis then discussed the 1998 Australian Maintenance/Maintainability conference. The conference organizers would like IEEE non-financial support. Issues and questions raised included insurance responsibility, conditioning support on formation of an Australian chapter, IEEE RS mailing list use, IEEE display, etc.

Item # 3: Motion to table the Australian conference issue until we get further information (J. Adams). Motion was second by Bud Trapp and approved by vote. RS AdCom also needs to get more info relative to the 3 levels of IEEE sponsorship.

John Adams/ VP Report Membership - John discussed the current problem of retaining RS members. Members contributed with examples of poor IEEE service for members. Discussion relative to awards for members, application packages to current members to distribute to potential new members, reduced membership fee for bringing in new members.

Item # 4: Sam Keene took the action to get the proper address for sending a complaint letter to IEEE HQ. All: submit John Adams ideas for improving retention such as incentives.

Paul Gottfried/ VP Report Publications - Discussed transactions and new editor - Marty Wortman. Encouraged feedback from any concerned members. The issue of expanding transactions to include more practical papers or a possible new magazine was discussed. The group discussed the IEEE homepage and its inclusion of all transaction paper titles and abstracts dating back to 1994. Next year the complete journals will be on line. The issue of the IEEE RS www page was briefly discussed including the need to hire a web master and the move towards independence from the U of Maryland homepage.

Ken LaSala/ VP Technical Operations - Discussed technical committee resources. Dick Doyle raised the concern about the number of members working on the standards and definitions committee. Whether or not the 60 or so people working on the six existing standards committees should be counted as defs and stds members was the question. Sam Keene's new reliability prediction committee was announced.

Item # 5: A motion was made that Joe Caroli determine the number of working group members falling under defs and stds. A suggestion followed to put the names under technical committees, i.e., prediction std wg members under Sam K's new committee; test std wg members under the test and screening committee.

The speakers bureau was discussed.

Item # 6: Ken LaSala took the action to contact M. Roush and work with him to update the speakers list. Ken will then provide the list to AdCom members. It was suggested to add speakers from different societies and RAMS tutorial personnel to list.

Ken then overviewed a number of tech ops significant events and issues. The Reliability Program Std was released for balloting during the past quarter.

Item #7: Art Rawers made a motion to establish a "Physics Of Failure" committee. There were 4 seconds to motion. Loretta Arellano made a friendly amendment to the motion to have Art work with Dave Franklin and his emerging technology committee in order to avoid duplication. Possibilities include either changing Emerging Technology committee name or form a new one while assuring there is no duplication.

Item # 8: A motion was made to create a Reliability Prediction committee with Sam Keene as the chair. A comment was made that this was an appointment and did not require a vote.

Dick Doyle / Jr Past President's Report - Provided a report on the mechanical reliability committee. He mentioned his ongoing association with the SAE. He also discussed the new member from China on the mechanical reliability committee. Bud Trapp expressed concern relative to the potential lack of experience that the new member might have since he is a PhD student. Dick Doyle then reported on his association with COMAR.

Dennis Hoffman provided a report on CAE in CE. Plans are to continue holding the workshop at RAMS

Joe Caroli / Defs and Stds provided a presentation introducing himself as the new chair of the Defs and Stds committee. He also discussed his thoughts on the future of IEEE Reliability Stds.

Sam Keene provided a Video Program status report. He gave the 1997 RS video schedule and current status including sales . The idea of an Accelerated Life Testing video was raised. Dick Doyle mentioned that CPMT wants to do a joint video with the IEEE. Dick also suggested that the AdCom revisit and update the SW Rel video since it was a best seller. Dick also suggested that the AdCom

consider language translation of videos for overseas sales. Video promotion and advertisement were then discussed. One thought which was discussed was that of publishing an overview of tutorials in the transactions and/or spectrum. The group decided to explore this possibility while taking care to assure that we are not out of line with other IEEE transactions.

Dick Doyle provided the Nominations and Awards Committee report. A listing of potential candidates was distributed. An e-mail roster of the AdCom was also distributed. Dick passed around a letter to B. Bream, subject: Request for AdCom Nominations. He requested that the AdCom vote on the method used for voting on new members (See back side of Dick's letter.).

Item # 9: Art Rawers motioned that voting method proposal # 2 be accepted, i.e., IEEE HQ mails ballot w/ candidate resumes as opposed to voting through newsletter. A vote was held and the motion was accepted.

Item # 10: John Adams took the action of checking on the status of AdCom members terms of service.

LUNCH

Thomas Weir / Sr Past Presidents Report - Tom reported on his recent long range planning committee meeting. Tom queried other societies to benchmark their 5 year plans. New plans include strengthening or eliminating weak chapters and potential e-mail, telecon or overseas AdCom meetings. Approval was granted for a large number of chapter awards. Tom recommended that AdCom start thinking and planning from now on who should receive the awards.

Chapter reports were provided. Kurt Gray - Denver report. D. Hoffman - Cleveland report for V. Lalli. K. LaSala - mentioned joint Washington / Baltimore meetings. D. Hoffman - Dallas Chapter. Congratulations on his Service Award!

A lengthy discussion relative to the RS AdCom and IRPS relationship took place. The discussion centered around the desire to have more IRPS reps on AdCom, and relieving ongoing tensions between IRPS and ADCOM. Dick Doyle recommended a 3 parallel paths approach: 1. AdCom work with IRPS BoD and EDS, 2. Continue to draw IRPS members to AdCom, and 3. Do something at HQ level to go on record relative to trying to resolve problem.

Item # 10: Motion (Dick Doyle): Loretta send in a motion to IEEE HQ suggesting that TAB re-address IRPS ownership after 2 Yr probation period. Friendly Amendment (T. Weir): State that the Reliability Society does not agree but will accept their ruling provided that within 2 years IEEE re-address their ruling. Dick Doyle then suggested the following wording via a handwritten viewgraph: "SUBJECT: IRPS Sponsorship - Reliability Society does not agree with the arbitration meeting results (and feels that it hurts the Reliability Society). Request TAB re-address sponsorship of IRPS after a 2 year period (or sooner). Tom Weir second the motion.

Item # 10A: It was moved to table the motion pending an e-mail vote. Action: A subcommittee (Art Rawers, Dick Doyle, Loretta Arellano, and Dennis Hoffman) will draft final wording. The subcommittee will draft a letter to TAB and distribute via e-mail to AdCom for vote. Silence will be treated as consensus on this vote.

Dick Doyle presented his issues and concerns relative to standards (see his handout). Dick's concerns centered around the potential problem of loosing the past efforts of the six std working groups under the leadership of M. Cushing. The following points were made by various AdCom members: D. Hoffman - We have to make sure that past working group efforts are appreciated and continued. Documents should not go to ballot before AdCom review. K. LaSala - Working group chairs were queried to provide status to new defs and stds chair and to coordinate with committees, no response received. Future plans do call for continuing ongoing efforts. Sam Keene - Stds

groups and DSC chair went out of their way to hold meetings disassociated with IEEE. John Adams - Tried to communicate with M. Cushing and saw no response. Dick Doyle then agreed with other AdCom members.

Item # 11: Motion (Dick Doyle): Move that Joe Caroli replace Mike Cushing as the rep to IEEE stds board and as the DSC chair. The motion was failed to receive a second. Various members of the group stated that this is an appointment and did not require a vote.

Bud Trapp - provided a report on chapter activities.

Loretta Arellano read B. Gauger's report relative to PACE activities. No display for IRPS 97, will have one at next RAMS. PACE workshop will be held in St. Petersburg on Labor Day weekend.

Art Rawers presented his Educational Activities report. His plans include life long learning programs, fostering more educational activities, more videos, informational www, technical publications, etc.

Marty Wortman / Editor Transactions - Marty's report discussed the type of papers going into transactions, criteria for acceptance, potential "editors office hours" at RAMS, publication of special sections, etc. The idea of a new magazine which would fall somewhere between a newsletter and the transactions was again discussed.

Loretta Arellano presented B. Bang's report on a Process for Developing Standards. Bernie feels that the process should be derived by those who will use it. He recommended using power engineering standards as a model for the stds process.

Loretta Arellano presented B. Bang's report on dues structure change. New RS members currently are offered limited flexibility in the publications they receive, i.e., proceedings. They default into RAMS. Recommend periodic new welcome letter/package with more options/choices relative to what they desire to receive.

Item # 12: Loretta Arellano - Ask Bernie to look at other options as possibilities for new members to receive when joining RS. John Adams accepted this action as Membership chair and will ask Bernie for assistance.

Loretta Arellano presented Bob Loomis' report on RS WWW page. The main issue was what to do to move the RS WWW page from the U of Maryland to its own independent location.

Item # 13: Motion to have Bob Loomis and Bruce Bream take necessary actions to migrate the RS web site to the IEEE server. The motion was passed by vote.

Loretta Arellano presented information relative to the 50th anniversary of the RS. Volunteer and suggestions were solicited for the committee that Henry Hart is chairing.

Loretta Arellano presented New RS Appointments.

Loretta Arellano presented results of the RS logo contest. No suitable candidate was found and the contest will be reopened. New search committee is Bud Trapp, Kirk Gray, Marsha Abramo, Art Rawers, Mauro Ciappa and Loretta Arellano

Sam Keene presented a brief overview of the Process Based Reliability model currently under development.

Dennis Hoffman presented thoughts on what the RS roadmap should address.

Summary of Action Items:

1. Richard Kowalski - Submit 1998 Budget inputs to IEEE HQ by mid May.
2. Dennis Hoffman - Obtain more detail on Australian Maintenance / Maintainability conference and on the 3 levels

- of IEEE support.
3. Sam Keene - Determine the proper address for sending a complaint letter to IEEE HQ. Letter will address problems with IEEE service and the impact of poor service on member retention.
 4. All - Submit ideas to John Adams ideas for improving IEEE member retention.
 5. Joe Caroli - Determine number of standards working group members.
 6. Ken LaSala - Contact M. Roush and work with him to update the speakers list. Ken will then provide the list to AdCom members.
 7. Art Rawers - Contact Dave Franklin and either form a new "Physics Of Failure" committee or discuss changing the name of Dave's emerging technology committee.
 8. John Adams - Check on the status of AdCom members terms of service.
 9. Subcommittee (Art Rawers, Dick Doyle, Loretta Arellano, and Dennis Hoffman) - draft final wording for a memo to HQ IEEE , Subject: Sponsorship of IRPS. Content: Reliability Society does not agree with the arbitration meeting results and feels that it hurts the Reliability Society. Request TAB re-address after a 2 year period (or sooner). Distribute draft memo via e-mail to AdCom for vote.
 10. John Adams/Bernie Bang - Look at options / publication packages for new members to receive when joining RS.
 11. Bob Loomis and Bruce Bream - Initiate actions to migrate the RS web site to the IEEE server.

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Advanced Reliability Techniques and R&D Technical Operations Committee

The Advanced Reliability Techniques and R&D technical operations committee has been appointed a new chair, Dr. Christian K. Hansen, assistant professor of statistics at Eastern Washington University. The committee also welcomes new member Mr. Kevin C. Krych, Reliability Engineer at Rockwell Collins Inc. The committee's outgoing chair IEEE fellow Anthony Coppola has been known for his many significant contributions, not only on this committee, but in various other IEEE activities as well. Tony's experienced leadership on this committee will be greatly missed, although he has promised to help the new committee getting established. One specific charge of the committee is to gather information about current developments and trends in reliability technology, using input from the other technical operations committees, from relevant literature, and from other reliability professionals. Based on this information a comprehensive annual technology status report is compiled, presented to the AdCom in January, and published in the April issue of this newsletter. The committee is actively seeking to expand its network of contributors to the annual report, and is strongly encouraging input from all members of the Reliability Society. The goal is to maintain a high degree of objectivity in the report, which can be achieved only through broad participation. Please send items of interest to the chair using the following address:

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STUDENT MEMBER SURVEY

Here are some highlights from the 1996 IEEE Student Member Survey initiated by the Student Activities Committee and coordinated

by Institutional Research and Strategic Planning.

- A total of 1,000 surveys were mailed to randomly sampled IEEE student members in Regions 1-10. An impressive 594 graduates and undergraduates responded. The average age of respondents is 26.5 years.
- The level of satisfaction with IEEE student membership and with IEEE products and services is 75 percent, but many students apparently are not aware of several products and services.
- The top two reasons given by respondents for joining the IEEE were access to technical publications and the suggestion of a professor. Secondary reasons for joining included professional aspects such as the opportunity to network, resume enhancement and reduced conference registration fees. However, students in Regions 1-7 tend to value the professional aspects more, whereas in Regions 8-10, students valued the technical publications most. Of those responding and planning to renew their IEEE membership after graduating, the top reason is IEEE technical publications.
- For those trying to define new services, the study concludes that graduate students want technical resources and undergraduate students want technical and professional resources. Undergraduates value professional resources more highly than graduates, since they are primarily concerned with launching their careers. However, undergraduate students overwhelmingly still join for, and value, technical information.
- The Student Activities Committee will be evaluating the survey results to help identify ways to better meet student member needs, in particular the different needs of graduate and undergraduate students and Student Branch-Section interaction programs that should help provide greater professional value for undergraduate students.

The HTML version of the survey results is on the Web at <http://sandbox.ieee.org:9100/survey.html> and the MS Word version is at <http://sandbox.ieee.org:9100/survey.bin>. Printed copies are available from Laura Durrett - Student Services, IEEE Regional Activities - telephone 908-562-5523; fax 908-463-3657; e-mail l.durrett@ieee.org.

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Innovative R&M CAE Applications

HELP. I request your assistance. If you know of innovative R&M CAE tools that you would like to see featured at RAMS within the Innovative R&M CAE Solutions session, please contact me. The R&M tools of interest are those that are developed by industry or research institutions, are ready for or are in use, but are not commercially available. If you would like to share your tool's capabilities or are just aware of a tool that you would like to know more about, please provide me contact info and I will try to include within this RAMS session. Please contact Dennis Hoffman at 972-997-2270, e-mail to dhoffman@ti.com, or FAX to 972-997-3674. Thank you for your assistance. See you at the 1998 RAMS.

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NATO R&M Standards

1. NATO AC/250 Subgroup IX, R&M has been dissolved by NATO as a cost-saving measure.
2. Status of NATO R&M standards as of January 1997
 - o ARMP-1 "NATO Requirements for Reliability and Maintainability," Oct 1993.
 - o ARMP-2 "General Application Guidance on the Use of ARMP-1," Oct 1993

- ARMP-3 "Source of National R&M Documents," May 1988, new format in draft "List and Source of National and International R&M Documents."
- ARMP-4 "Guidance for Writing NATO R&M Requirements Documents," Apr 1991, Edition 2 in preparation.
- ARMP-5 "Guidance on Reliability and Maintainability Training," May 1988.
- ARMP-6 "In-Service R&M," May 1988
- ARMP-7 "NATO R&M Terminology Applicable to ARMPS," Edition 1 in draft.
- ARMP-8 "Reliability & Maintainability in the Procurement of Off-the -Shelf Equipment," Oct 1991.

For the United Kingdom, the corresponding documents are Parts 1-8 respectively of Defence Standard 00-40.

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IEEE Reliability Society Newsletter

Editor: [Bruce Bream](#)

Associate Editor: [Dave Franklin](#)

Last Update: 28 August 1997

Send questions or comments to [Webmaster](#), IEEE Reliability Society.
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