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Features

CHAIRMAN'S MESSAGE

Dear fellow members,

"Sections Congress" is an once in three years activity that reviews the IEEE in Toto at the grass root level and makes recommendations for its functioning. The recent Sections Congress was held in October 2002 and it's interesting to note what Region 10 had to recommend.

R10 RECOMMENDED ACTIONS:

1. IEEE should review the student membership dues structure taking into account regional economic differences to reverse the adverse effects in student membership growth and retention resulting from the recent steep dues increase. (SC 2002 #2)

2. IEEE should modify and extend the existing Financial Advantage, Professional Development & Lifelong Learning Programs for use globally in order to increase the value of membership to all members. (SC2002 #17)

3. Chapters should be jointly accountable to Sections and Societies in order to enhance section-chapter relationship. (SC2002 #36)

4. IEEE should develop industry-focused programs and incentives to attract wider participation and support from industry (SC2002 #3)

For a full coverage of SC 2002 recommendations please visit the SC web page at **http://www.ieee.org/organizations/rab/sc/2002/**

One of the major issues facing us in India and the rest of Region 10 is the steep hike in Student membership annual dues. This is a very important issue for us since Students form a major part of IEEE membership in India. We all should be glad to note that the Region 10 recommendation has been given the ranking # 2 to review the student membership dues. I earnestly request all IEEE members to bring this to the attention of all concerned, especially students to encourage them to continue as members as well as enroll new members.

Industry participation and support for IEEE is another major point. We need to change the myth that IEEE is only for academicians. IEEE is for all Engineers and hence the need to develop industry focused programs in IEEE. Once again Region 10 has taken the lead in this and got their recommendation as the third ranking in the Sections Congress 2002.

My thanks to all those from region 10 who took up the two most important issues facing IEEE in this part of the world - student membership dues and Industry participation. These have received the due attention of rest of IEEE and we hope they get resolved soon.

Region 10 meeting is scheduled for April 4 to 5. All Section chairs in the Region will be meeting with the R10 execom members to deliberate on IEEE activities for the Region. I request all members to put on their thinking hats and come up with suggestions that can help IEEE prosper and achieve its goals effectively.

with best regards,

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Chairman,IEEE India Council

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"The day will come when, after harnessing space, the winds, the tides and gravitation, we shall harness for god the energies of love. And on that day, for the second time in the history of the world, we shall have discovered fire"

– Pierre Tielhard de Chardin

EDITOR'S DESK

'You are given a rope; you can climb with it or hang with it'

Non-engineering subjects are generally regarded as less important and students used to make noise in such classes, in most engineering institutions. It was not different when I was in first year engineering and that was the first class by the chemistry professor, a tough person, we realized later. As soon as he entered the class, cat calls and various other forms of noises usual in such non-core subject classes greeted him, but he appeared unconcerned and went ahead with his teaching. The students however did not want to accept defeat and intensified the thumping on the floor. He held on for some more time and finally banged heavily on the table, asking them to stop the non-sense. There was an uneasy calm suddenly- students smelling something different in this teacher. He smiled at them and said ` Congrats young men, for securing admission to this most sought-after-course in this prestigious institution. That doesn't mean you have all become engineers now. There is a long way to go. You are given a rope- admission to engineering. You can climb with it or hang with it.' Thereafter nobody dared to disturb his or other classes.

One day a friend walked into my office with his son, a high school drop-out. A job for this son was his need. Luckily, I could get him a job as a salesman in a show room. Scene 2 – after about 15 months, father and son again, this time with a different request that I should speak to the owner of the shop and get him a pay rise. All his colleagues have been given hikes and he was left alone. He also narrated the hardships at the work place like the need to stay late beyond working hours on some days, difficulty to get leave when ever needed, no time to take rest etc etc. I did not entertain the team much and sent them off by saying just this. 'You were given a chance and if you were really good in your job, the management would have given you an increase in salary, as was done in other cases. Not doing that is indicative of the fact that they don't mind even your leaving the job. Go back, work hard and prove your worth'

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IEEE TENCON 2003

IEEE TENCON 2003
OCTOBER 14 – 17, 2003
HOTEL TAJ RESIDENCY, BANGALORE, INDIA
www.ieee.org/bangalore/tencon2003

CALL FOR PAPERS
IEEE Region 10 Technical Conference on Convergent Technologies For The Asia-Pacific

Sponsored by	*Organized by*	*Co-sponsored by*
IEEE Region 10 Science	**IEEE Bangalore Section**	**Indian Institute of**

ABOUT BANGALORE

Bangalore is a bustling cosmopolitan city and the State Capital of Karnataka State. With a population of about 6 million, Bangalore is a major industrial, commercial center and the science city of India. It forms the nucleus of many scientific, technological and research activities.

It is also the Garden City of India and probably one of the loveliest cities in India with well laid out parks, gardens and long avenues of blossoming trees. Bangalore enjoys a strategic geographical location and is connected by air, rail and road to all the major cities in India.

ABOUT TENCON 2003
In the past decade, there has been a synergy between developments in information technology and communication. The Internet and World Wide Web has made a significant impact on the society in particular all over the world, while influencing other fields including mobile and distributed computing, intelligent systems, collaborative work environments, cellular communication, multimedia applications and home entertainment. It has changed the way we work, think, spend our spare time our collaborative environment and the personal entertainment. The society has been benefited by way of faster, reliable and secure electronic communication, new technologies for imparting education and health care services for masses, disaster management, rural markets, distributed power generation with non-conventional and renewable energy sources and reliable power delivery and transportation. These technological changes have given rise to numerous challenges.

The TENCON 2003 at Bangalore will focus on different aspects of recent technological breakthroughs in related fields to evolve convergence in technologies with emphasis on the development of a knowledge society in Asia Pacific.

INVITATION TO ATTEND

The Institute of Electrical and Electronics Engineers (IEEE) Region 10 is pleased to invite you to attend TENCON 2003. IEEE TENCON 2003 is the premier IEEE event of Region 10 with previous conferences being held in many cities of Asia-Pacific. It is not restricted to Region 10 IEEE members, but aimed to all those involved with electro technologies. Attendees are welcome from all parts of the world.

SCOPE
Relevant topics of interest include, but are not limited to, the following:

¨ Signal, Speech and Image processing
¨ Natural language processing
¨ Data mining
¨ Mobile computing
¨ Embedded systems
¨ Multi-media systems
¨ Collaborative computing
¨ Computational science
¨ E-Commerce and E-Governance
¨ Bio-Informatics
¨ Internet technology & Computer networks
¨ Wireless networks
¨ Digital communication
¨ Radar & Satellite technology
¨ Microelectronics and VLSI
¨ Electrical power and Energy
¨ Robotics and CAD/CAM
¨ Bio-medical and Health-care applications
¨ Case Studies relevant to Asia-Pacific countries

SUBMISSION GUIDELINES

· Working language is English.

· Paper submission will be exclusively through electronic means. The authors are required to submit their papers in either PDF or POSTSCRIPT format only. Papers should consist of an abstract, extended summary, references and figures, and the length not exceeding single-spaced FOUR A4 size pages.

· MSWORD and LaTeX templates will be supplied to the authors of accepted papers for the preparation of camera-ready manuscripts.

: Papers may be sent as attachments through electronic mail to: tencon-03@csa.iisc.ernet.in (preferably compressed).

· The author's name, correspondence address, telephone, Fax number and Email should be included in a separate page.

· Tutorial proposals may be sent to tencon-03@csa.iisc.ernet.in

IMPORTANT DATES

Submission of papers   March 15, 2003

Notification of acceptance   June 15, 2003

Camera-Ready paper due   August 1, 2003

Tutorial proposals due   May 1, 2003

Tutorial proposal acceptance   June 1, 2003

Tutorial Date   October 14, 2003

Conference Date   October 15-17, 2003

THE CONFERENCE CHAIRS

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> **News - Scan**

2003'S TOP ENGINEERING HONORS GO TO INVENTORS OF GPS AND ARTIFICIAL ORGANS

The engineering profession's highest honors for 2003, presented by the National Academy of Engineering (NAE), recognize two technological achievements that have affected millions of people's lives throughout the world – the Global Positioning System (GPS) and artificial organs.

Ivan A. Getting and Bradford W. Parkinson will share the distinguished Charles Stark Draper Prize – a $500,000 annual award that honors engineers whose accomplishments have significantly impacted society – for their individual efforts toward the development of GPS.

Willem J. Kolff will receive the Fritz J. and Dolores H. Russ Prize – also a $500,000 award recognizing outstanding achievement in engineering, this year in bioengineering – for his pioneering work on artificial organs.

The Charles Stark Draper Prize

GPS was initially developed for the guidance, navigation, and control of military aircraft, missiles, and satellites in space, as well as to aid people on the ground. Now it has become commonplace in many everyday applications and has fundamentally changed navigation for various modes of transportation through its capability to give precise positioning coordinates and very accurate real time. GPS is currently part of such technologies as weapons and air traffic control systems, and is used in ships, trucks, and automobiles. It is increasingly being employed in areas of health and welfare, as well as in emergency situations.

"Many of engineering's great achievements become so much a part of our lives that they are taken for granted. I think that, without question, the Global Positioning System is destined for this distinction," said Wm. A. Wulf, president, National Academy of Engineering. "It is an achievement that deservedly joins the ranks of previous Draper Prize honors, such as the semiconductor microchip, the jet engine, satellite technology, fiber optics, and the Internet."

Ivan A. Getting is president emeritus of The Aerospace Corp. In the 1950s he envisioned a system that would use satellite transmitters to pinpoint with extreme accuracy locations anywhere on Earth. After it was shown that GPS could work, Getting became a tireless advocate for making sure the complex system was actually built.

Bradford W. Parkinson was Department of Defense program director for the original definition of the GPS system architecture, as well as for its engineering, development, demonstration, and implementation. He continues to work on GPS at Stanford University, further honing its accuracy and using it to control such things as helicopters, farm tractors, and spacecraft.

The Fritz J. and Dolores H. Russ Prize

At least 1.2 million people are alive today thanks to the invention of kidney dialysis. This first demonstration that a man-made device could routinely replace the function of a natural organ was one of the great contributions of engineering to clinical medicine. The paradigm was quickly applied to other organs and led the modern era of "substitutive medicine."

"The lives of over 20 million people are sustained, or significantly improved, by organ replacement technology," said Leo J. Thomas, retired executive vice president of Eastman Kodak Co. and chair of the Russ Prize selection committee. "A key component is artificial organs, and Dr. Kolff has had a role in practically all of them. He is truly the father of this field."

Willem J. Kolff engineered the first dialysis machine – or, as he prefers to call it, the artificial kidney – out of sausage casings and part of a Ford automobile water pump during World War II while in Nazi-occupied Holland. He was driven by the experience of seeing a young man suffer through the agony of kidney failure as his body gradually lost the ability to filter out waste. Even Kolff's early device was able to reverse such symptoms in patients. Since then, he has added much to his resume, including: the heart-lung machine, the intra-aortic balloon pump heart assist device, the artificial eye, and the artificial heart made famous by its first human recipient, Barney Clark. At 91, Kolff lives in a retirement home where he is fine-tuning his next invention – the wearable artificial lung.

The Draper Prize was established in 1988 at the request of The Charles Stark Draper Laboratory Inc., Cambridge, Mass., to honor the memory of "Doc" Draper, the "father of inertial navigation," and to increase public understanding of the contributions of engineering and technology. The prize is awarded annually. The Russ Prize was established in 1999 through a multimillion-dollar endowment to Ohio University from Fritz Russ, a 1942 engineering graduate, and his wife Dolores. It recognizes outstanding achievement in an engineering field, currently bioengineering, that is of critical importance and that contributes to the advancement of science and engineering. The achievement must improve a person's quality of life and have widespread application or use. The prize is presented biennially.

The National Academy of Engineering is an independent, nonprofit institution. Its members consist of the nation's premier engineers, who are elected by their peers for their seminal contributions to engineering. As such, the academy provides leadership

and guidance to government on the application of engineering resources to social, economic, and security problems. Established in 1964, NAE operates under the congressional charter granted to the National Academy of Sciences in 1863.

FINLAND- NO.1 IT-SAVVY NATION

The Geneva-based World Economic Forum (WEF) has brought out its "The Global Information Technology Report(GITR) 2002-'03" surveying 82 economies for the "Readiness for the Networked World", in association with INSEAD

Highlights of GITR 2002-'03:

·   Finland, better known for its world leadership in mobile phones, ranks first in the 'Networked Readiness Index (NRI)', boosted by the best performance in terms of technology usage by its citizens, businesses and the Government.

·   US has slipped from the first to second place due to less competitive performance in terms of connectivity and diffusion of information and communication technologies(ICT)

·   Singapore which jumped from eighth to third position, is most notable in terms of political and regulatory environment but also in terms of the readiness of its Government to employ ICT in its internal processes and delivery of services.

·   Germany ranks tenth in terms of networked readiness but is the strongest of the 82 economies in terms of ICT usage by businesses.

·   France holds the 19th position in networked readiness rankings buoyed by availability of scientists and engineers and capacity for innovation.

·   Britain rose from tenth to seventh place..

Technology *in brief*

Bright idea lights way for LEDs

Light-emitting diodes are rapidly replacing conventional incandescent and fluorescent bulbs in everything from traffic lights to flashlights, but there's one thing they haven't been able to do: Produce an even spread of illumination.

Now, Omron of Kyoto, Japan, has announced that its research labs have prototypes of what they dub a "flat light source," an LED-powered lamp that produces an even glow over a wide surface.

Such a device could potentially have applications in general room lighting, said a spokesman. What's more, because the new light source produces white light by mixing blue, green and red, the source can emit any color in the spectrum by varying the mix.

LEDs are a hot area of research because they last much longer than incandescent or fluorescent bulbs and consume far less energy. However, LEDs are several times more expensive than standard bulbs. In countries such as Singapore, authorities are replacing conventional streetlights and traffic lights with LED-powered lamps—some of them powered by batteries charged from solar cells atop the light poles.

However, each LED bulb is small, and so needs to be placed in a bunch in order to spread the illumination over the same area as a standard bulb. Grouping increases the bulkiness and price of each lamp, as well as decreasing the uniformity of the light spread, says Omron, a maker of consumer and industrial electronics.

The company's prototype incorporates red, green and blue LEDs in an optical capsule. This mirrored and lensed shell flattens the point beams out into a square 3 centimeters by 3 centimeters, with a thickness of just 6 millimeters.

With this, Omron's scientists have achieved 50 times the illuminated surface area of a single LED of the same thickness as the capsule, the company said.

Omron predicts that when the lamps go to market months down the road, it could be used in much the same way that standard bulbs are.

Only as high as I reach can I grow,
Only as far as I seek can I go,
Only as deep as I look can I see,
Only as much as I dream can I be.

-Karen Ravn

Library Scan

"Geeks & Geezers- How Era, Values, and Defining Moments Shape Leaders"

Book by: Warren G.Bennis and Robert J.Thomas

The book looks at two categories of people: Geeks, who, as the authors define them, came of age between 1991 and 2000, grew up "virtual, visual, and digital." Geezers, whose formative period was 1945 to 1954, were shaped by World War II.

The authors conducted extensive interviews with 43 leaders - both Geeks and Geezers. They discovered that there were more   similarities among these leaders than differences. The study yielded an unexpected result: a theory that describes how leaders come to be, in whatever era, and that predicts who is likely become and remain a leader.

The authors' research led to a new and telling discovery also: that every leader, regardless of age, had undergone at least one intense transformational experience - what the authors call a "crucible." These events can make you or break you. For emerging leaders, they do more making than breaking, providing key lessons to help a person move ahead confidently.

If a crucible helps a person to become a leader, there are four essential qualities that allow someone to remain one, according to the authors. They are: an "adaptive capacity" that lets people not only survive inevitable setbacks, heartbreaks, and difficulties but also learn from them; an ability to engage others through shared meaning or a common vision; a distinctive and compelling voice that communicates one's conviction and desire to do the right thing; and a sense of integrity that allows a leader to distinguish between good and evil.