

IEEE India Bulletin Vol. 11 No. 6 June 2001**INDEX****Features**

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CHAIRMAN'S MESSAGE**Dear Fellow Members**

In the previous issue of the Bulletin, you would have noticed that IEEE membership in India has reached a figure of 23,543 as on 31.3.2001. Ending December 2000 this figure was 19,454. The growth of almost 20% is not only very impressive but has broken all records. This shows that IEEE is gaining popularity among the Indian engineers and more and more engineers are finding the IEEE membership rewarding and beneficial to their professional career. All the sections and particularly the volunteers involved in the membership development deserve all appreciation.

With this tremendous growth in membership, the responsibility of the sections and India Council has also increased as they will have to see that the IEEE activities cater to maximum number of members. Therefore, now the necessity of setting up new Sub Sections in India has risen so that the technical & professional activities are decentralised. Normally all the activities under a section are confined only to the Section Headquarter and there is hardly any participation of members who are living away from the headquarter. There are many cities like Pune, Chandigarh, Bhubaneshwar, Cochin which are quite large and have a number of our members residing there. If a Sub Section starts functioning at these places, it will be convenient for the members there to participate in the activities. So if some members take initiative to form Sub Sections at these places, they can organise Seminars, Conferences, Lectures etc. there which will not only involve the local members and engineers but will also motivate some of the engineers to become IEEE Members. This will benefit the members professionally at and around the Sub Section as well as increase the membership growth. Hence I will urge all the Sections to identify places where there is a concentration of members and then initiate proposal to open Sub Sections there. It needs only 12 members to open a sub section and this is certainly not a big number. Let all sections in India send proposal to open at least one Sub Section each in this year. India Council will extend all help in this matter.

As mentioned in my message in the May 2001 issue, I hope members are sparing sometime in helping the Delhi Section and India Council in successfully organising the ACE 2001, the major event of the Council which is scheduled to be held at New Delhi on 1 to 3 November 2001. This is the Silver Jubilee Year for the India Council and we plan to celebrate it appropriately by organising special programs on the occasion of ACE 2001. The details of ACE 2001 were published in the May 2001 issue of the Bulletin and I seek co-operation of each & every member in making this event a success.

With best wishes,

Sincerely yours,

New Delhi
01 June, 2001.

P. K. Srivastava
Chairman
E-mail :
pk Sri@satyam.net.in



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LEARNER'S COLUMN

MP3 - The Internet Audio Standard

MP3, a digital music technology, has changed the way people listen to music on the Internet by allowing them to download thousands of songs from the net. It wasn't so long ago that the average pop song converted into a file took hours to download on a 28.8 Kbps modem connection and ate up, around 50 megabytes of disc space. With the same song converted into an MP3 file, download time gets reduced dramatically to around one-tenth the original size while sounding just as good as before.

MP3 is an acronym which stands for 'MPEG 1 Audio Layer 3'. MPEG refers to the Moving Pictures Experts Group, an organization that sets international standards for digital formats for audio and video. MP3s are widely recognized as the most popular format for storing and listening to music on the World Wide

Web. No doubt, it was one of the most exciting developments in the history of recorded music. Mr. Karlheinz Brandenburg of Fraunhofer Institute of Integrated Circuits, Munich is credited with the development of this format.

As a form of compression, MP3 is based on a psycho-acoustic model which recognizes that the human ear cannot hear all the audio frequencies on a recording. The human hearing range is between 20Hz to 20KHz and it is most sensitive between 2 to 4KHz. When sound is compressed into an MP3 file, an attempt is made to get rid of the frequencies that can't be heard. As such, this is known as 'destructive' compression. After a file is compressed, the data that is eliminated in the creation of the MP3 cannot be replaced.

Any song can be "encoded" in MP3 format. When encoding a file into MP3, a variety of compression levels can be set. For instance, an MP3 created with 128 Kbit compression will be of a greater quality and larger file size than that of a 56 Kbit compression. The more the compression level decreases, the lesser the sound quality. Ultimately, the benefits of MP3 compression mean that people can back up their music collection onto hard disc or burn their own music selections onto CDs which hold over 100 songs.

MP3 is simply a file format, but it can be used legally or illegally. It is legal if the song's copyright holder has granted permission to download and play the song. It is illegal to encode MP3s from CD and trade them without permission from the copyright holder.

The web site, MP3.com has 250,000 visitors daily who download free songs from more than 4000 artists. The users can also download the software to play these songs for free.

T.S. Ajayghosh, ER&DCI, Trivandrum

"Every job is a self-portrait of the person who did it. Autograph your work with excellence"

Paperless Office - A Myth ?

Here are some interesting insights from a Price Water House Coopers technology forecast:

- o Rate by which printing volume increases when e-mail is introduced: 40 %
- o No of sheets used by office copiers in 1996: 809.3 billion
- o No of sheets to be used by office copiers in 2001: 1.1 trillion
- o No of sheets used by laser printers in 1996: 787.6 billion
- o No of sheets to be used by laser printers in 2001: 1.2 trillion
- o No of sheets of paper used by a company per \$100 million increase in sales: 8.8 million. And they say the future belongs to a paperless office!!

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Technology in brief

Electronic spectacles

The hassle of changing spectacles whenever one experiences difficulty with vision is going to be a thing of the past. Electronic spectacles developed by E-Vision of Virginia allow prescriptions to be changed, doing away with the need to invest in new lenses. The lenses are coated with a thin, transparent film of indium tin oxide and filled with liquid crystals. Apply a small voltage to the film and the refractive index of the liquid crystals changes, altering the prescription. Power for this comes from a thin film battery stuck to the arms of the frames, alongside a tiny micro-processor and a memory which stores the wearer's prescription settings. If you want to order specs on line, you can e-mail your prescription to an Internet optician.

Breakthrough in disk-storage technology

IBM claims to have made a breakthrough in disk-storage technology using a new type of magnetic coating it calls 'pixie dust' that could allow even the smallest computers to store large amounts of data. The technique using a three atom thick layer of the element ruthenium, a precious metal similar to platinum, sandwiched between two magnetic layers, is expected to help create new hard-disk drives by 2003, capable of storing 100 billion bits or 100 gigabits, of data per square inch of disk area. The highest density in current disks is about 25 gigabits.

Biodegradable car bodies

Disposal of old cars is a growing problem. It is only a matter of time before the expense of disposal becomes the owner's responsibility who will be forced to pay the full life-cycle cost of the car.

Australian researchers, working on using environmentally friendly material for car bodies, expect that within a decade cars could be made of 'hemp' - the cannabis plant - a biodegradable material. Research is going on to find ways of making sure that 'hemp' does not become brittle and could protect the passengers of a vehicle during an accident.

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Quality Mission Statement

- A Sample

Achieve renowned world-class quality in products and services, which results in:

- o Delighted Customers
- o Happy Investors
- o Proud Employees
- o Improved Brand-recognition and Value

(Courtesy: Sun Microsystems)

'The person who knows "how" will always have a job. But the person who knows "why" will always be his boss'

- Diane Ravitch

'Every exit is an entry somewhere else'

-Tom Stoppard

'Never do anything against conscience even if the State demands it'

- Albert Einstein

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Membership Matters

HK writes....

There are 158 IEEE Student Branches in India as of 30th April '01 and petitions for 13 more Branches are pending approval. These are distributed as under:

Section	Branches	Petitions Pending
Bangalore	18	-
Bombay	32	5
Calcutta	2	1
Delhi	10	-
Gujarat	3	-
Hyderabad	18	1
Kerala	11	-
Kharagpur	1	-
Madras	57	6
Uttar Pradesh	6	-
Total	158	13

Madras leads all other Sections in the world with the largest number of Student Branches in its area. Bombay Section is in the threshold of getting into the No. 2 position as it will overtake Mexico Section who now have 35 Branches.

H.Kalayanasundaram

An appeal to student councillors

Kindly furnish your postal addresses to the Editor to enable him to send extra copies of Bulletin for circulation among your student members.

Editor

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News - Scan

FORTUNE 500 Largest US Corporations

April 16, '01 issue of FORTUNE magazine has come out with the details of the Largest American Corporations of the year 2000. Some highlights:

Rank	Corporation	Revenue (Billion U.S. \$)	Profits (Billion U.S. \$)
1	Exxon Mobil	210	17
2	WAL-MART	193	6
3	General Motors	184	4.5
4	Ford Motor	180	3.5
7	ENRON	101	1
8	IBM	88	8
41	Intel	34	10.5
79	Microsoft	23	9.4
93	Coca-cola	20	2.1
94	Pepsico	20	2.2

Note: FORTUNE's Global 500 list incorporating non-US corporations also, will be published later.

Patents - Some eye openers

Patents are documents, issued by a government office, that describe an invention and create a legal situation in which the patented invention can normally be exploited (made, used, sold, imported) only by or with the authorization of the patentee. The protection of inventions is generally limited to 20 years from the date of filing of an application for grant of a patent.

The World Intellectual Property Organization has estimated that at the end of 1997, about 4.4 million patents were in force in the world. The high income countries filed 2.8 million patents. The middle income countries had applied for less than one million with low income accounting for around 0.67 million.

Japan filed the maximum patents - 4 lakhs. US - 2 lakhs , Germany - 1.75 and UK - 1.5. South Korea - 1.3 lakhs, twice that of China. India filed 10,000 patents in 1997.

Courtesy :World Development Indicators 2000

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Membership Matters

HK writes.... " IEEE Membership in India at its peak as of 31.03-2001"

Section	Higher Grade	Students	Total
Banglore	1418	605	2023
Calcutta	1207	464	1671
Delhi	1585	503	2088
Gujarat	336	338	674
Hyderabad	1545	1110	2655
Kerela	460	682	1142
Kharagpur	102	53	155
Madras	2180	4175	6355
Uttar Pradesh	573	303	876
All India Total	11720	11823	23453

-H. Kalyanasundaram

An appeal to student councillors

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Editor



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IEEE DELHI SECTION



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EDITOR'S DESK

I feel, we have been passing through a period of Information Technology (IT) overdrive during the past few years. All eyes and ears were on IT cake and in that process, the much wanted infrastructure sector of a developing country like ours was ignored, to a major extent, by the young engineers. Most graduates from engineering institutions were heading towards IT sector, irrespective of their branches being Civil, Mechanical, Chemical or Electrical Engineering. As a consequence, the infrastructure sector failed to attract the cream from these institutions, to get involved in the nation building process. According to N R Narayana Murthy of Infosys, this is not a good trend because these professionals were needed for the building of roads, harnessing of energy and in other vital areas in infrastructure that were essential if the IT industry were to thrive.

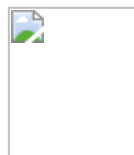
With the recent change in IT scenario, the other sectors may perhaps be able to regain the old status and attract the engineering talent again, as they used to do a decade back. Let us hope that this would lead to an overall re-surgence in all engineering fields, including IT.

"The use of computers is not antithetical to Gandhian ideals. In fact, computers can be used to further Mahatma Gandhi's dream of localised production and decentralization of the decision-making process"

***K.R. Narayanan,
President of India.***

Trivandrum
02 June 2001

N. T. Nair
Trivandrum Editor
[email: del@vsnl.com](mailto:del@vsnl.com)



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e mail: haresh@ipdpg.gov.in

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Write to:

Haresh S. Bhatt
CNF/SIIPA,
Space Applications Centre,
Ahmedabad - 380 053.
INDIA
Ph. 91-79-6774770

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This electronic version of the IEEE India Bulletin is an adaptation of the official, printed newsletter. This adaptation has required some minor modifications and restructuring of the original text, to suit its viewing as a webpage.

Thank you for visiting this webpage.

Administrivia:

This page last modified on: July 9, 2001

Send your comments about this page, to: s.gopakumar@ieee.org

This page, developed and maintained by : S.Gopakumar
