



सह वीर्य करवावहे

# IETE NEWSLETTER

Vol 2, No 3

May-June 2000

## FROM PRESIDENT'S DESK

As the new millenium moves ahead in its first year, mobile systems and internet are also gaining new grounds. World is fast taking to e-commerce and mobile internet. WAP, GPRS, Bluetooth are making even domestic appliances internet enabled. With m-commerce becoming a reality, the demand for 3G networks and spectrum is becoming critical. It is indeed laudable that World Radio Communication Conference (WRC) under ITU, has cleared IMT-2000 based network standards.



With the advances in technology soon we would also be using 3G systems. These present a new opportunity and challenge to all. Our top priority should be to educate the masses using all formal or informal means of imparting education in IT, Electronics and Telecommunication. IETE has already announced registration in computer science, Electronics & Telecommunication programmes. IT programme are likely to be started July 2000 onwards. In our endeavour to take education to every nook and corner of the country, we have planned to use internet for *distance education programme*. For this while we are seeking help from possible sources we need experts to develop quality course material and help in making e-education a reality. I invite all IETEians to come forward and join us in this movement.

I also invite all to participate in Annual Technical Convention scheduled to be held on 30 Sept- 1 Oct 2000. The theme for ATC is *E-Commerce*. Let all IETEians contribute in building India a leader in e-world.

Cdr (Dr) H S SHARMA, IN (Retd)

## NEWS FROM HEAD QUARTERS

### REPORT OF WORLD TELECOM DAY CELEBRATIONS

The 32nd World Telecommunication Day was celebrated by IETE on 17th May 2000 to commemorate the founding of the International Telecommunication Union. The theme of this year was " Mobile Communication".

Hon'ble Minister of Communications, Shri Ram Vilas Paswan was the Chief Guest. Other distinguished invitees included Shri P S Saran, Secretary, DoT (Services), Shri S Rajagopalan, CMD, MTNL, Shri N K Sinha, Member (Technology), DoT, Shri Sunil Mittal, Chairman, FICCI, Telecom Committee, Shri Vijai Kapur, Chairman CII, National Committee on Communications, Shri P K Sandell, Chairman ASSOCHAM Telecom Committee.

Shri P N Chopra, Chairman IETE Technical Programme Committee welcomed the Hon'ble Minister of Communications and all present. He then introduced the persons on the dais to the large august gathering. Dr H S Sharma, President IETE, in his presidential address highlighted the services provided by IETE and the role played by it in the advancement of telecommunication and IT in the country through its educational programmes, quality publications, seminars, symposiums, workshops, brain storming sessions amongst professionals, academia and industry.





Dr H S Sharma, President IETE delivering his Presidential address. Seen are L→R: Shri P N Chopra, Shri Vijai Kapur, Shri S Rajagopalan, Shri N K Sinha, Hon'ble Minister of Communications Shri Ram Vilas Paswan and Shri P S Saran

Shri T V Ramachandran, DG, COAI, New Delhi in his presentation, informed the audience that the growth of cellular subscribers was more than fixed line. He said that even with the current rate, atleast half of the population of all countries would have mobile telephones by the end of 2000. He said that mobile communication encompasses all business activities and is the main requirement for commercial success of any country. Shri Amit Sharma, President Motorola India Ltd., Gurgaon (Haryana) focused on wireless and internet equipment. He said that these would be the primary communication medium in near future and would be the most cost-effective techniques of communication.

Highlighting the importance of mobile communication Shri P S Saran, Secretary, DoT(Services), provided some vital statistics regarding its growth in India. He expected communication to reach every household by 2010. Talking about the development activity in mobile communication, Shri S Rajagopalan, CMD, MTNL, said that standardization in mobile networks is happening worldwide. He said the inside building coverage of mobile communication in India requires improvement. He talked about comparatively high tariff in India and made suggestions for improving the quality and capacity of communications.

Shri N K Sinha Member (Technology) DoT, said that in present scenario more and more people irrespective of location, want mobile communication access to information without bothering where the information resides. Voice services are no longer enough to satisfy the business and personal needs of society, people need mobile access to data. Demand is not only coming from high-end market but mass market customers who want economical access to information services. All

technological advances that are being made in the field of mobile communication are being done keeping in mind that they are simple to use, economical, user friendly with higher speed and all value added services.

Shri Sunil Mittal, Chairman, FICCI, Telecom Committee said the in-building coverage can be improved by installation of antennae towers around parliament house and cantonment areas. He spoke about foreign ownership, basic telecom services and quality of mobile communication compared to foreign countries.

Shri Vijai Kapur, Chairman CII, National Committee on Communications also focused on cheaper and quicker installations. According to him cost of mobile communication can be brought down. He said our effort should be to convert thoughts into action. World is changing to do things on the move. He advised to pay attention to the changes that are required.

Shri P K Sandell, Chairman, ASSOCHAM Telecom Committee stressed upon digitalization of the technology and globalization of telecommunication that broke all the barriers and brought the globe together. He emphasized on the technology of convergence.



Hon'ble Minister of Communications Shri Ram Vilas Paswan with Dr H S Sharma, President IETE

Hon'ble Minister of Communications, Shri Ram Vilas Paswan, in his address on the occasion of 32nd World Telecom Day said that the political will is for making India a high tech country in telecommunication and information technology. He said efforts also need to be channelized towards making telecommunication available to the common man at the same time. He emphasized that the speed of providing telephone communication should be such that all villages of



the country get connected by the year 2002 and by the year 2015 every household should be connected with telephone and internet facilities. He further stated that the scientific pool of the country should be tapped and encouraged to ensure that new ideas and techniques are continuously generated and developed so as to make country self-reliant in the field of telecommunication. For this we need to create the right environment in the country so that our scientific talent can be retained and made to flourish. He congratulated the private telecom operators for their contribution in telecom services and added that they need to invest in R&D so that our engineers and scientists can design and develop high technology equipment in our country itself.

Shri Paswan said that the technology of wireless in local loop or WLL should be utilized for reaching inaccessible places in rural, mountainous and riverine areas. According to him there is a vast rural market that needs to be exploited by telecom operators. This is not being done for the fear of making losses. He said national interest should be paramount and companies should not shy away from investing in rural areas just because these are deemed to be loss making. In the same breath he said the Deptt of Telecommunication should be treated more of a public utility service rather than a source of business.

The Telecom Minister said that in today's era, where there is high general awareness and cut throat competition, telecom operator be it Govt or private should bear in mind three things:

- (a) priority should be given to the common man at the village level;
- (b) world class service should be provided;
- (c) customer care should be given due importance.



Chief Guest Hon'ble Minister of Communications, Shri Ram Vilas Paswan delivering the talk



Dr H S Sharma, President IETE presenting memento to the Chief Guest

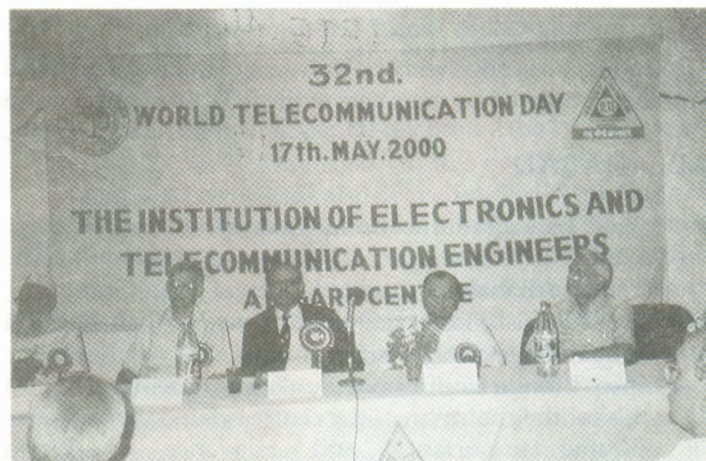
### NEWS FROM CENTRES

#### AHMEDABAD

32nd World Telecommunication Day was observed by the centre on 20 May 2000 on the theme "Mobile Communication". A technical lecture with audio-visual presentation on mobile communication was delivered by Shri A Mukhopadhyay, CTO Celforce, Ahmedabad to mark the day. The function was chaired by Shri N Mohanty, Chairman, IETE Ahmedabad Centre. The message from Mr Yoshio Utsumi, Secretary General, ITU, was read out by Shri D S Kushwah. The function ended with thanks to all by Shri J P Shivhare, Hony Secretary, IETE Ahmedabad Centre.

#### ALIGARH

The 32nd World Telecommunication Day was celebrated



A view of the dias during World Telecommunication day celebrations: L→R: Prof Mahfoozur Rehman, Prof Fareed Ghani, Dr Mahmoodur Rahman, Shri Deepak Sinha and Prof V P Mittal



jointly by IETE Aligarh Centre and IE (I), Aligarh Centre on 17th May 2000. Dr Mahmoodur Rahman, IAS, Vice-chancellor, AMU, Aligarh was the Chief Guest and Er Deepak Sinha, General Manager, Telecom Deptt, Aligarh was the Guest of Honour.

Prof. Mahfoozur Rehman, Head of Dept. of Electronics Engg and Hony Secretary, IETE Aligarh Centre welcomed the Chief Guest and other dignitaries. Prof Fareed Ghani, Chairman, IETE Aligarh Centre emphasized the importance of cellular telephones in the Indian context and stressed the need of bringing down their prices so as to make them real competitors of the conventional telephony.



A view of the audience at 32nd World Telecommunication Day celebrations at IETE Aligarh Centre

The dignitaries who spoke on mobile communication were Er Deepak Sinha, Vice Chancellor Dr Mahmoodur Rahman, Prof V P Mittal, Chairman IE(I), Aligarh Local Centre. Among others, Miss Sameena Naaz, a post graduate student, Dr Waseem Ahmed, Prof, Deptt of Electronics Engg, AMU and Er S L Sharma, Chief Engineer (Retd) , UPSEB delivered lectures on the theme of 32nd World Telecommunication Day.

The function ended with the University Tarana and National Anthem presented by members of the IETE Students' Forum

## ALLAHABAD

- World Telecommunication Day celebrations took place at IETE Local Centre at J K Institute of Applied Physics, Univ. of Allahabad. Prof N K Sanyal, Vice-Chancellor, U.P. Dr Rajrishi Tandon Open University, Allahabad and a noted Physicist gave the invited talk on the theme topic "Mobile Communication". Introducing the guest speaker the chairman of the centre briefed the audience on the importance and relevance of World Telecommunication Day. The talk was well attended by about 75 persons which included IETE members, members from Mobile Communication Industry, Indian Air Force,

Doordarshan, All India Radio, Eastern U P Chamber of Commerce and Industry, Allahabad Management Association, Staff and members of the science faculty of University of Allahabad.



L→R: Dr K K Bhutani, Prof N K Sanyal, Vice-Chancellor and Dr G S Darbari, Chairman IETE Allahabad Centre

- The valedictory function of IETE Entry level course run under the NORAD scheme was also held at IETE Centre on the World Telecom Day. All students who passed the NORAD examination in the year 1998-99 and 1999-2000 were given certificates. It was well attended. The Chairman, IETE Allahabad Centre, Dr G S Darbari introduced the audience with the theme and objectives of the NORAD scheme. Speaking on the occasion Chief Guest, Prof N K Sanyal, said that the computer awareness programme run by the centre for girls belonging to economically weaker section of the society is a laudable effort in fulfillment of the aspiration of the society. He said that the proper use of computers could improve the quality of life in the area of education, medicine and practically all spheres of life. He wished all the candidates a bright and successful career.

Prof K D Dikshit, Ex-Chairman IETE, Allahabad Centre proposed the vote of thanks.

## BANGALORE

Technical lectures held at the Centre during the month of Apr 2000 are as follows:

02.04.2000

- ATM by Mr Sunil.
- Application of DSP in Telecommunication by Sri D V Poornaiah.
- Micro Controller 8051 Hardware by Sri G R Joshi.



- 09.04.2000
  - ERILOG by Ms Usha & Ms Radha D'GI Pro.
  - ISDN by Dr Rithu Raj, LRDE.
  - Speech Coding by Sri Keshory, LRDE.
  - MICRO Controller Programming by Sri G R Joshi, ADA.
- 16.04.2000
  - VLSI Design Concept by Sri D V Poornaiah, ITI.
  - DSP Processor by Sri Radha Krishna, LRDE
- 19.04.2000
  - Visit of Summer School (SUSIE-SUSIC) STUDENTS to Bharat Electronics - Smt Rajeshwari.
- 22.04.2000
  - Introduction to Digital Signal Processing (DSP) & Review of Signal & Systems by Capt Pranesha, BEL.
  - Discrete-Time Signals by Sri J Paramashivam.
- 23.04.2000
  - Network Security and Privacy by Dr Rithu Raj Kumar, LRDE.

- Summer School in Electronics (SUSIE-2000) & Summer School in Computers (SUSIC-2000) were inaugurated by Shri Vijay Bhaskar, Commissioner for public Instruction, Govt. of Karnataka. In his inaugural address he appreciated the activities of IETE Bangalore Centre and wished that the services should be extended to the rural sector for the benefit of the under privileged especially the computer literacy. Dr M H Kori, Chairman IETE Bangalore gave the Presidential remarks. The vote of thanks was given by Shri A M Bhagwat, Hony Treasurer. An exhibition was organised on Electronics projects by disabled students from Association of people with disability.



L→R: Brig. K Balasubramaniam (Ex VP), Dr M H Kori Chairman, IETE Bangalore Centre, Chief Guest, Shri Vijaya Bhaskar, Commissioner for Public Instruction, Prof C S Subramanian (Ex VP) and Shri A M Bhagwat Hony Treasurer

- The inauguration of Digital Signal Processing (DSP) for BEL Engineers was held on 22.4.2000 by Dr M H Kori, Chairman, IETE Bangalore Centre.
- During the valedictory function of SUSIE-2000 & SUSIC-2000 & short-term courses, Prof L M Patnaik of Indian Institute of Science, Bangalore was the Chief Guest. He distributed the certificates and prizes among the participants. Brig K Balasubramaniam, presided over the function. Sri G R Joshi proposed the vote of thanks. Handicapped and students from the Spastic society also participated in the Summer courses.



Electronic Projects Exhibition by disabled students from Association of People with Disability, at IETE Bangalore Centre on 2/4/2000

- Intensive 2 day workshop on "Internet-The com Era" was conducted on 15 and 16 May 2000. There were 5 sessions covering all aspects of TCP/IP and Internet Security. The speakers were Dr C R Chakravarthy, Dr Gopi Krishna Garg from IISc, Dr Rithuraj Kumar from LRDE, Shri R Prakash and Shri Mahendra Babu from C-DoT.
- The IETE Bangalore Centre celebrated the World Telecom Day-2000 on 17 May 2000. On this day Prof S V C Aiya Memorial Lecture was also delivered. Shri Vivek Kulkarni, Secretary to Govt. of Karnataka, inaugurated the function. Shri G S Raju, DDG, Telecom Centre, Southern Region, was the Guest Speaker. Shri S Gopalakrishnan, Principal General Manager, Bangalore Telecom District presided over the function. The theme lecture was followed by live demo of the mobile internet. There were 102 participants from Industries, R&D Labs and students. Besides senior members, to name a few, like Past President IETE Shri B K Rai, Air Vice Marshal Govinda Rajan, Brig M R Narayanan, Prof R P Shenoy, Distinguished Fellow of IETE etc were present in the audience.





At IETE Bangalore Centre, World Telecommunication day being inaugurated by Shri Vivek Kulkarni, IAS, Secretary to Govt. of Karnataka

- The following technical lectures were also arranged:

*Demonstration of DSP Trainer/Starter Kit for TMS 320 C3X-*  
Shri Naveen, Ms Rajeswari.

*Lecture on "Modern Warfare" during "National Technology Day" at CRPF centre –* Shri D Rajagopal, Hony Secretary.

*Nyquist's Theorem –* Shri Satya Sudhakar.

*Spectral Analysis & Estimation –* Prof P S Naidu.

*DSP for Telecommunication System –* Shri D V Poornaiah.

*Adaptive Signal Processing –* Shri Ananda Babu.

*FIR Filters –* Shri S Gupta.

*IIR Filters –* Shri S Gupta.

*Array Signal Processing –* Prof P S Naidu.

*DSP Processor-Architectures –* Shri P Radhakrishna.

## BHOPAL

IETE Bhopal Centre celebrated World Telecommunication Day at Maulana Azad College of Technology, Bhopal. The Chief Guest of the function was Shri S K Prasad, PGM (D) DTS, MP Telecom.

Commencing the programme, Chairman IETE Centre, Dr A K Tiwari welcomed the dignitaries. Dr S D Sapre, Hony. Secretary while briefing informed the members regarding the upgradation of Bhopal sub-centre to local centre. The distinguished speaker of the function Shri S R Chouhan, SE Doordarshan Bhopal, in his address on "Mobile Communication" enlightened the audience with the developments and importance of the same for the society. Shri A K Bhatnagar read the message from the Secretary

General; ITU Mr Yoshio Utsumi on Mobile Communication the theme of this year's World Telecom Day. Dr K S Sayann, Principal, MACT, in his presidential address pointed out the uses of mobile communication to the mankind and the development of the country.

Prof M K Gupta conducted the programme and proposed the vote of thanks.

## CHANDIGARH

As a part of World Telecommunication Day the Chandigarh Centre arranged lectures and discussions on the theme- 'Mobile Communication'. The function was co-sponsored by ECL Telecommunication Ltd. Shri R N Sharma, Circle General manager, Punjab Telecom Circle was the Chief Guest. He explained the various aspects of fixed telephony, mobile telephony, genesis and the economics involved in the telecom project. It was attended by senior executives from electronics industries, senior scientists of CSIO, Members of IETE Chandigarh and students from the field of electronics & computers. Shri Prithipal Singh, Principle General Manager of Chandigarh Telecom was also present.

Shri Sachi Chakraborty, Senior Manager Spice Telecom gave his presentation quoting facts and figure on mobile telecommunication. Shri K B Lal, Sr Vice President of ECL Telecom Ltd said that key to the success of a private basic telephone service operator is the flexibility with which it can work. ECL is committed to set up a state-of-the-art basic telephony network in Punjab & the Union Territory of Chandigarh. He stressed on value added services, telephony and convergence which would lay the foundation for more



World Telecommunication Day Celebrations at IETE Chandigarh Centre. Wg Cdr D N Misra(Retd), Hony Secretary making a point. Others in picture are Dr R P Bajpai, Director, CSIO, Dr S K Mangal, Chairman, IETE Chandigarh Centre, Shri R N Sharma, Circle Chief Manager Punjab Telecom Circle and Shri K B Lal, Sr Vice-President, ECL Telecommunication Ltd



sophisticated services in future. Others who spoke on this occasion included Wg Cdr D N Misra, Hony Secy IETE, Dr S K Mangal, Chairman IETE and Dr R P Bajpai Director CSIO. The event was televised on local TV Channel and published in the local news papers.

## DEHRADUN

The World Telcom Day was celebrated in IETE local centre at DEAL Dehradun on 17/5/2000. The Chairman Shri R S Misra welcomed the guest speakers, Shri M D Prasad and Shri K S Gupta both from M/s ESCOTEL. Shri M D Prasad in his lecture presented the commercial aspects of mobile communication. He elaborated on customer demand of Wireless Telephony and gave a brief overview of Global Wireless Standards and Systems.

Shri K S Gupta spoke on the technical aspects of mobile communications. He gave a brief overview of evolution of cellular telephony and discussed GPRS (General Packet Radio Service) and HSCSD (High Speed Circuit Switched Data).

The function was attended by more than 100 Corporate members.

## GUWAHATI

The IETE Guwahati Centre celebrated the World Telecommunication Day by organising a seminar on the theme—Mobile Communications. An electronic hobby kit exhibition was also arranged to attract the visitors.

In his presidential address, Shri Dastidar stated that combined with the power of new satellites and other wireless technologies in the present IT era, mobile communications is having a profound effect on our way of life.

Dr K M Pathak, ex-VC Tezpur University graced the occasion as the Chief Guest and gave an illuminating speech on the theme and stated that mobile communication systems will finally provide access to telecommunication users around the world access to the information and services they need, anywhere, any time.

Other key note addresses were by Prof Dilip Barua, Principal, Cotton College, Dr A K Goswami, ex-Principal Cotton College, Prof Utpal Miri, ex-Director Technical Education, Assam, Shri R P Singhal, Area Manager (West), Kamrup Telecom District, Shri R D Choudhury, Network Head, Reliance Telecom Pvt Ltd, Shri Amitabh Nath, SDE (Tech) DoT and Col T B B Lahkar (Retd) Vice Chairman, IETE Guwahati Centre.

On this auspicious occasion, Commendation Certificates of the DGP Assam were awarded to the outstanding professionals. It was presented by Shri P M Dastidar, IGP (Commns) and DP (C) Assam & Chairman, IETE Guwahati



A view of the dias during World Telecommunication Day Celebrations

Centre to 6 recipients of the Assam Police Radio Organization (ARPO).

Shri Prasanta Saikia, Hony Secretary, IETE Guwahati Centre, earlier delivered the welcome address. The message from Mr Yoshio Utsumi, Secy General ITU on the theme: "Mobile Communications" was read out by Shri Ashwini Narzari, Hony Treasurer, IETE Guwahati Centre. He also offered the vote of thanks to the distinguished guests, invitees, IETE Corporate members and students for their active participation.

## GWALIOR

The IETE Gwalior Sub-centre celebrated the 32nd World Telecommunication Day on 17 May 2000.

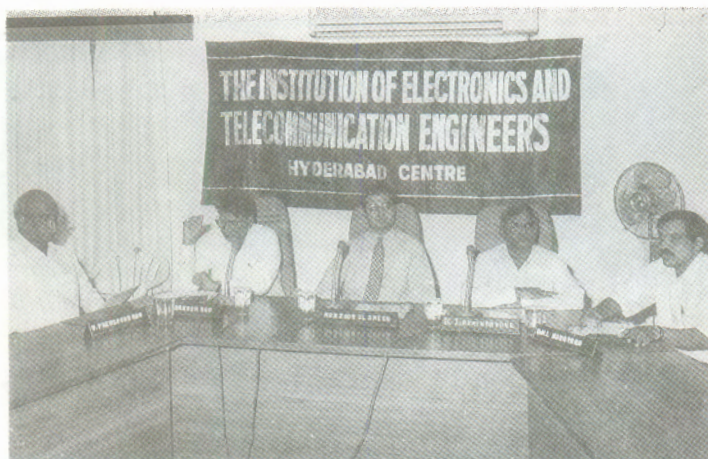
Er. Ajay Madan (Director, Transmission, C-DOT) delivered a lecture on Mobile Communications. Mr Nitin Gupta from RPG gave account of mobile telecommunication services in MP particularly at Gwalior. The program was conducted by Dr N C Goyal, Council Member and Chairman, Jabalpur local centre, who also highlighted the importance of World Telecommunication Day.

Dr D K Agrawal, GM Telecom delivered the vote of thanks. About 50 members of the IETE Gwalior Sub-Centre attended the function.

## HYDERABAD

- A Lecture on "Silicon Prairie - Providing World Leadership Engineering Education and Research" by Dr Narayana Rao Nannapaneni, Professor, Electrical & Comp Engg Deptt & Asso Head for Instructional and Graduate Affairs, University of Illinois, Urbana Champaign was organised by the IETE, Hyderabad Centre on 10 Apr 2000.





A view of the dias during World Telecommunication Day Celebrations. Seen are L→R: Shri V Premasagar Rao, Shri Prakash Rao, Shri Manzoor-Ul-Ameen, Shri K Laxminarayana and Shri M L Narayana

- Another lecture on "Wireless Application Protocol on the Cellular Mobile Telephones" by Shri Manzoor-Ul-Ameen, Marketing Manager, Tata Cellular Ltd., was organised on 17th May, 2000 in connection with 32nd World Telecom Day.
- The valedictory function of Summer School in Electronics was held on 31st May 2000. Shri U V Warlu, Council Member, IETE, was the Chief Guest who distributed the certificates to the trainees and gave away prizes to the winners. Sri K Laxminarayana, Chairman, IETE Hyderabad Centre presided over the function.

## JAIPUR

- The IETE Rajasthan Local Centre organized a zonal seminar on Information Technology and E-Commerce on 22 April 2000 at Electronic Test & Development Centre (ETDC), Jaipur, which received an over-whelming response from all sides. The Chief Guest, Shri N Narasimhan, Chief General Manager, Rajasthan Telecommunication Circle, Jaipur inaugurated the seminar. He enumerated the uses and applications of wireless techniques. He emphasized the role of telecom services especially in rural areas and villages that needs considerable acceleration for the overall development of the country.

Mr Navaid Khan, Chief Executive Officer, Oasis Cellular, was the Guest of Honour and Prof S C Agarwal, Principal, Malaviya Regional Engineering College, Jaipur was the Special Guest. Mr Rohit Singh, Director, IT, Govt. of Rajasthan was also present on the occasion and delivered an invited talk on E-Governance. Mr Anurag Agarwal, Chairman, IETE Rajasthan Local Centre, Jaipur welcomed



A view of the dias during Zonal seminar on "Information Technology & E-Commerce" on 22nd April 2000. L→R: Shri Anurag Agarwal, Chief Guest Shri N Narasimhan, CGM, Rajasthan Telecommunication Circle, Jaipur, Prof S C Agarwal and Shri Navaid Khan, CEO, Oasis Cellular

all and briefed the delegates about the various technical activities and targets of the institution and its role in achieving these. Prof S Sancheti, Secretary, Rajasthan Local Centre delivered a vote of thanks

The seminar included three invited talks and eighteen papers in the general category. The highlight of the seminar was the presentation of nine student papers. Two best student papers were given prizes while others were given certificates of participation.

- The World Telecom Day celebrations were held under the auspices of Institution of Electronics and Telecommunication Engineers (IETE), Rajasthan Local Centre, Jaipur and Department of Telecommunication (DoT), Jaipur. Speeches were delivered by the distinguished guests. They included Shri Anurag Agarwal, GM (Operations)



IETE, Jaipur Centre celebrating the 32nd World Telecommunication Day



Deptt of Telecommunication and Chairman, IETE Local Centre, Shri K C Gupta, Chief Operating Officer, Hexacom India, Shri Pradeep Mehra, Chief Operating Officer, Aircel Digilink, Shri Sunil Chopra, Vice Chairman, Shyam Telelink, Col B S Jaggi, Vice Chairman, IETE Local Centre and General Manager Hexacom India Ltd, Shri R C Malhotra, Principal General Manager, Deptt of Telecommunication and the Chief Guest of the occasion, showed his concern over the increasing migration of population from rural to urban areas and said that the telecom infrastructure is undoubtedly an asset which can curb this migration and can help in increased economic development. He was confident and hopeful of a big hike in the number of mobile users in India in coming future. The programme was conducted by Dr Sandeep Sancheti, Hony Secretary, IETE Local Centre, Jaipur. The event was sponsored by Oasis Cellular, Essar Cellphone and Shyam Telelinks, Jaipur.

## KANPUR

A brief description of activities held in last couple of months at the Centre.

- ❑ **Quest-2000:** A function based on Science & Facts-Quest-2000, was organised on 23 April 2000 at IIT, Kanpur. Out of 800 entries, around 40 questions were selected and explained by the panelists who were experts from the field of medical, biology, Astrophysics, Physics & Chemistry.
- ❑ **World Telecom Day:** Celebrations of World Telecom Day took place on 17 May 2000 at Hotel Landmark. Prof V Sinha, Council Member, IETE deliver the Presidential address while Prof K A Padmanabhan, Director, IIT, Kanpur was the Chief Guest. The programme underlined the need for Mobile Communication in India to integrate



Inauguration of Kanpur Office Complex by Dr H S Sharma, President, IETE

the country with the global economy. An exhibition on communication was arranged which was attended by technical fraternity, businessman, academia and general public.

- ❑ **Inauguration of IETE Kanpur Office Complex:** Dr H S Sharma, President IETE inaugurated the IETE Kanpur Local Centre Office Complex at 111/457, Brahm Nagar, 80ft Road, Kanpur on 21 May 2000. The building houses a Library, Conference room, two Lecture rooms, one Computer room, and is equipped with all amenities required for the smooth functioning of the Institution.

## MUMBAI

- ❑ The Centre conducted following technical lectures during Mar-Apr 2000:

**24.03.2000** 'Communication Technologies behind the Internet Revolution' by Prof R Lagu (Visiting Faculty, IIT Bombay) at IIT Bombay.

**19.04.2000** Quantum Measurement: Paradoxes and Potential Applications by Mr Avsalom C Elitzur, Bar Ilan University, Israel, Visiting Prof Bhaktivedanta Institute, Juhu, at EE Seminar Hall, IIT Bombay, Mumbai.

- ❑ A Poster competition on the theme 'Communications in the New Millennium' was organized on 25 Mar 2000 at Department of Electrical Engineering, IIT Bombay and was co-sponsored by ISFs at VES and FCR Institutes of Technology and the Electrical Engineering Students' Association of IIT Bombay. Topics chosen for the competition included Quantum Communication Systems, Digital Television, Iridium, Home Networking, and Securing Electronic Commerce. Prof Lagu, a Visiting Faculty Member at IIT Bombay, was the Principal Judge for the event. The best categories of the student presentations were awarded Merit Certificates. It was a lively and informative experience for the students.

## NASHIK

- 22 Feb 2000** The Nashik Sub-centre organized a lecture on Aims & Objectives of IETE Students Forum at Sir M Vishveshvaraiyya College, Sinnar. Mr D Padegaonkar Vice Chairman, Nashik Sub-centre emphasized the need of such forums for keeping the students abreast of modern trends and developments in technology. This was further elaborated by Shri J C Menaria, Hony Secretary, IETE Nashik sub-centre. He explained about the constitution and benefits which a college gets after becoming a part of IETE fraternity.



**23 Feb 2000:** A visit was arranged to the National Thermal Power Station at Eklahare for technical exposure of the members of IETE, which was very interesting and informative.

**04 Mar 2000:** A seminar on Internet and E-Commerce was conducted by the Centre. Shri B Prasad, Chairman IETE Nashik Centre delivered the Welcome address. Shri Nitin Mahajan, Treasurer IETE Nashik Centre, presented an overview on "Internet - The information super highway". Shri Manoj Akshan of "Dire Straits" explained the salient points of E-Commerce and business through live demonstration. Vote of thanks was given by Shri J C Menaria, Hony. Secretary, Nashik Centre.

## NAVI MUMBAI

A two day seminar on "Emerging Trends in Electronics, Telecommunication and Information Technology" (ETI-2000) was organised by IETE Navi Mumbai Sub-Centre on 18-19 March 2000, under the guidance of Dr M K Sinha, Chairman Sub-Centre and the Principal of AC Patil College of Engineering. Inaugural session was followed by three sessions of technical paper presentations. Mr Sridharan, HRD, Dy Gen Manager, Fisher Rosemount delivered the keynote address. The theme was introduced by Mr K J Chacko, GM, Marketing MTNL, Mumbai. The Speakers from IIT, Mumbai, BARC, Global Telecom and industries like Interfab, Control Solutions, Godrej etc contributed in making the symposium grand success. On the second day Dr T S Rathore inaugurated an IETE Student Forum from AC Patil College of Engineering, Navi Mumbai. The vote of thanks was given by Mr V N Pawar.

## PILANI

IETE Pilani Centre celebrated World Telecom day by organising a function in the CEERI auditorium on the theme 'Mobile Communication'. Chairman of the Centre, Dr P Kapur welcomed the guests. Director, CEERI spoke on the relevance of the theme and introduced the Chief Guest Shri Viswajit Mitra, President, R&D Himachal Futuristic Communications Ltd., Gurgaon. The Honorary Secretary, Dr R K Nahar read the message of Secretary General ITU on the World Telecom Day. Shri R Ragunath, Group Leader, Digital Systems Group, CEERI gave the invited lecture on the mobile communications: basic issues. He discussed about different generation mobile systems with emphasis on CDMA. He also talked about the concept of a futuristic global mobile network based on satellite. Shri V Mitra delivered his key note address on the mobile communications for the next decade. Technical issues were dealt in detail. He stressed on the single standard for mobile

communication so that the same piece of hardware can work anywhere in the world.

The lectures were highly appreciated for the exposure given to the audience on the developments, challenges and the opportunities in mobile communication.



A view of the dias during the celebrations of 32nd World Telecommunication Day at IETE Pilani Centre

## VADODARA

The IETE Vadodara Sub-Centre celebrated the World Telecom Day on 17 May 2000 by organising a symposium on "Mobile Communication". It was the joint effort of IETE, Vadodara Sub Centre, the Institution of Engineers (India) and Vadodara Telecom District.

Chief Guest Shri Rakesh Babu, General Manager, Vadodara Telecom District presided over the function attended by over 150 dignitaries including members and invitees.

Dr R C Desai Chairman, IETE, Vadodara Sub-centre delivered the Welcome Speech. Wg Cdr S R Vasavada, Hony. Secretary, IETE Vadodara Sub-centre introduced the Chief Guest and speakers and briefly narrated the historical evolution of Mobile Communication and its technical aspects.

Shri P P Nath, DGM, Birla AT&T Communications Ltd presented audio-visual account of technology, equipments and operations of Mobile Communication Highway Systems. Shri R Kumar of FASCEL Ltd explained the routing of mobile communication from point to point between two subscribers and the technology and equipments used along the way.

Shri Rakesh Babu stressed the need for integrating Personal Computer and Mobile Communication through internet and portrayed the significance of Integrated Service Digital Network (ISDN) for providing services of Telephone, Internet, Cable TV and Electronic Commerce and banking through only one



cable. He also stressed the technical and commercial aspects of Satellite Communication with MEO and LEO satellites and their modes of operation.

Prof G S Parthasarthy, Hony. Secretary, IE (I), Vadodara Local Centre proposed the Vote of Thanks.

## VISAKHAPATNAM

**04 Apr 2000:** A guest lecture on 'Electronic Packaging Technologies' by Prof N J Rao was arranged by IETE Visakhapatnam Centre.

**05 Apr 2000:** A memorandum of understanding (MoU) was signed by Andhra University (AU), Visakhapatnam and IETE Visakhapatnam centre in which Andhra University spared 500 sq yds land for IETE building. The MoU was signed by RADM S. Mohapatra VSM on behalf of President IETE, Visakhapatnam Centre and Prof J M Naidu, Registrar of AU in the presence of Prof R Radhakrishna Vice Chancellor Andhra University.

**17 May 2000:** The World Telecom Day celebration took place at Hotel Daspalla. Shri S V Rangarajan, Addl, Director, NSTL, Visakhapatnam delivered a talk on Mobile Communication. He gave a lucid presentation on the global scenario on mobile communication and emerging trends in satellite based communication. He also elaborated on cell phone services being provided by various service providers like Tata, JTM, Bharati Tel and Modis in various cities. Prof GSN Raju, Vice-Chairman IETE Visakhapatnam Centre presided over the function. Large gathering attended the lecture programme.

## IETE STUDENTS'S FORUM

*Punjab Engineering College, Chandigarh:* Annual function of IETE Student Forum, Punjab Engineering College for the year 1999-2000 was held. On this occasion a technical quiz competition was organised. All students participated enthusiastically.

Student's Forum also arranged a lecture on "Telecom Technologies for Next Decade". Shri M P Singh delivered the lecture covering developments in optical networks, mobile communications, wearable devices, mass market of e-commerce and internet. He also stressed on hardware

technologies in micro electronics, opto-electronics, assembly technologies, signal processing. Few software topics in reuseable modules, object oriented methods, data storage methods were also discussed.

## ABUNDANT AND INEXPENSIVE BANDWIDTH

Mobile Telephone is the most significant development that will profoundly affect communications in the next few years. Mobile telephones are overtaking the fixed telephones in growth. In the fiscal 2000, more than 280 million mobile phones were sold compared to over 200 million PCs and about 80 million wired, i.e. fixed telephones. The mobile tele density (number of mobile phones per 100 people) has already exceeded the fixed telephone density in the Scandenavian countries and Italy. It is going past 65%. In China, as many mobile telephones are given per year as fixed telephones. In the developed countries, the fixed telephone density will plateau at about 60% when every household would have at least one residential phone. Excepting those under 10 years and above, say, 85 years, every human being could be using a mobile phone. That means, mobile tele density could be as high as 80%.

The third generation mobile phones will give not only the traditional voice but also a great variety of information services in the form of packetised data. The General Packet Radio Service (GPRS) known as a 2.5 G, halfway between the current second generation and the third generation in the process of being born is already being rolled out. This is giving about 270 kbps of packet data from mobile phones and it directly connects to the Internet. The third generation will be giving 384 kbps to 2 mbps.

What is likely to emerge is unlimited (about 10 mbps) bandwidth between the Internet devices, which the third generation mobile phones will morph into. In parallel with these developments is local multi-point distribution services in the 28 to 40 giga hertz bands which are capable of giving 10 mbps to the user. So, the emerging scene is wireless with ample bandwidth between hand-held devices and the Internet in the local area. Transport between cities and towns, that is long distance will be having optical fiber cables using Ultra Deep Wave Division Multiplexing (UWDM), each fiber giving upwards of 400 gbps. Wireless in the local area and optical fiber between cities, countries and continents is going to be the information infrastructure.

The cost for long distance bandwidth has been coming down precipitately. Here are the figures:



**A. Capacities of Telecom Xsion Systems**

Earliest transcontinental telephone call 1919

|                                    |       |              |
|------------------------------------|-------|--------------|
| Coaxial cable                      | 1946  | 1,800 ccts   |
|                                    | 1978  | 132,000 ccts |
| Microwave Radio                    | 1950  | 2,400 ccts   |
|                                    | 1981  | 61,800 ccts  |
| Com Satellite                      | 1965- | 240 ccts     |
|                                    | 1989- | 120,000 ccts |
| Xtantic Coax                       | 1956- | 36 ccts      |
|                                    | 1983- | 10,500 ccts  |
| Trans Atlantic OF cables<br>Recent | 1988- | 280 mbps     |
|                                    | 1999- | 80 gbps      |

- Note that capacity is no longer in terms of voice grade circuits but in terms bits per second reflecting the digital nature of information.

Legend: CCTs – Circuits  
Mbps – Magabits (10<sup>6</sup>) bits per second  
Gbps – gigabits (10<sup>9</sup>) bits per second  
OF – Optical Fiber

Source: www.teledotcom.com

**B. Cable Costs Come Down**

| Year | CABLE               | ARE/CCT   | COST/MNT |
|------|---------------------|-----------|----------|
| 1956 | TAT#1               | \$213,996 | \$2.443  |
| 1988 | TAT#8               | \$10,285  | \$0.117  |
| 1996 | TAT#13<br>SDH/SONET | \$1,080   | \$0.012  |

ARE – Annual Recurring Expenses;  
MNT – Minute

Dr T H Chowdary  
Information Technology Adviser  
Govt of Andhra Pradesh

**CALENDAR OF EVENTS**

| Subject  | Date                      | Venue     | Contact   |
|--|---------------------------|-----------|---|
| E-Commerce   | 30 Sept-<br>1 Oct<br>2000 | New Delhi | Secretary General, IETE, 2 Institutional Area,<br>Lodi Road, New Delhi-110 003<br>Tel: Off.: 011-4631810/20/30/40/50<br>Fax: 011-4649429/4631810<br>E-mail: ietend@giasd101.vsnl.net.in   |
| Maharashtra 2000<br>An Intl Exhibition & Coference   | 12-15 Oct<br>2000         | Mumbai    | Mrs Kumkum Manaktala<br>Director (Corporate & International)<br>113, Jogani Indl. Complex, Bldg. No. 5<br>Nr. ATI, Sion<br>Mumbai-400 022<br>Ph.: +91-22-5224554/5225832<br>Fax: +91-22-5221339<br>Email: wisitex@giasd101.vsnl.net.in  |
| 8th International Conference on<br>Advanced Computing and<br>Communication   | 14-16 Dec<br>2000         | Coching   | Dr K Rajan, Department of Physics<br>Indian Institute of Science, Bangalore 560 012.<br>Email: rajan@physics.iisc.ernet.in  |
| International Conference on<br>Communications, Computer<br>Devices   | 14-16 Dec<br>2000         | Kharagpur | Prof C K Maiti<br>Publicity Chair, Electronics & Electrical Communication<br>Engineering Department, IIT, Kharagpur 721302, India.<br>Tel. : +91-3222-55221 to 55224 & 77390 to 77393<br>Fax: + 91-3222-55303, 82700<br>E-mail:ccd2000@ece.iitkgp.ernet.in<br>Website: http://www.iitkgp.ernet.in/ccd2000 |
| Note: The Institution of Electronics and Telecommunication Engineers assumes no responsibility for the statements and opinion expressed by individual author and speakers. |                           |           |   |

Printed and Published by Maj Gen K B Jhaldiyal, AVSM (Retd) for the Institution of Electronics and Telecommunication Engineers,  
2 Institutional Area, Lodi Road, New Delhi 110 003 (India) and printed at the Cambridge Press, Kashmere Gate, Delhi 110 006  
Managing Editor: Air Cmde (Retd) P D Badoni, VSM