



# Newsletter

Vol.4, No.1

Jan-Feb 1995

## FROM THE DESK OF THE PRESIDENT

In January 1995 I visited Calcutta to participate in the 82nd Convention of the **Indian Science Congress**. I was invited to chair a session in the Engineering Sciences Section of the Science Congress which was held at the Jadavpur University. I also participated in the discussions in the Computer Sciences Section. This visit also provided me with an opportunity to meet the Executive Committee members of the Calcutta IETE Local Centre.



The new telecom policy has opened the door for the entry of the private sector for the provision of the basic telecom services. In this context, a tutorial on **Interconnect Issues in the Telecom Sector** was organised by the IETE HQ on 17 Feb 95. During this tutorial, which was highly appreciated by the participants, all interconnection issues were discussed at length in a comprehensive manner.

We have planned several other technical activities for this year. Some of the important activities to be organised by the Institution in the near future are : (i) A pilot programme for polytechnic teachers to be conducted from 20 -25 March 95 under the Satellite-based Television Experiment for Polytechnics (STEP). This pilot programme would deal with the subject of microprocessors with the participants distributed at six locations, namely, Delhi, Ahmedabad, Chandigarh, Bhopal, Madras and Calcutta. (ii) 26th Mid-Term Symposium on **Microwaves and Millimeter Waves- Recent trends** to be held at Dehradun on 8-9 Apr 95. (iii) The World Telecom Day function to be organised by the IETE HQ and the various Centres of the Institution on 17 May 95. The theme of the World Telecom Day this year is **Telecommunications and Environment**.

I hope that the IETE members would participate actively in these important forthcoming events of the Institution.

*S.V.S. Chowdhry*

Brig S V S Chowdhry (Retd)  
President

## NEWS FROM HEADQUARTERS

### Tutorial on Interconnect Issues in Telecom Sector

There has been tremendous response to the opening up of basic telecom services to the private sector, both from the Indian entrepreneur and the multinational telecom services providers. Coupled with the enthusiasm is also the apprehension of entering an arena so far monopolised by DOT. A tutorial on **Interconnect Issues in Telecom Sector** was organised by the IETE on 17 Feb 1995 at Delton Hall, to provide a forum for discussing the complex issue of interconnection in a multi-operator environment. It aimed to resolve to the extend possible, the grey areas concerning the technical, financial and legal aspects of the problem in hand.

What is the scope for competition, (long distance, local) points of interconnection, mode of interconnection, charging philosophy, transferring of billing information, mechanism of settling disputes, the role of Regulatory Authority, network solutions etc were some of the subjects discussed during the tutorial. The tender documents allows freedom of network architecture and technology options but not the charging plans. Efforts were made to understand the mechanism of growth of revenue and demand for services based on several factors. Perhaps the most vexing issue to the private operator is the billing philosophy laid down by DOT. Experts from DOT explained their rationale for working out the present strategy of charging for local and long distance



P S Saran delivering the keynote address at the tutorial

calls on their network. The need for setting up of a totally independent Regulatory Authority at an early date was highlighted. The right choice of technology, (not necessary the hi-tech) and methods adopted for expanding the subscriber base while bringing down operational costs, good management techniques and the judicious choice of personnel will go a long way in ensuing success for the private operator in this new game. The need for an interconnect contract with DOT based on a platform of equal partnership is a must for maintaining a good operating environment. The contract would clearly specify agreements on both billing and technological problems. It would be healthy for the private operators to develop a strong information network among themselves to discuss technical, legal and financial tangles.

The tutorial evoked a good response from the participants numbering around 75 and the question and answer sessions were ably steered by the convenor of the tutorial, Shri Y P Singh, GM (Telecom), Siemens. Shri P S Saran, Member (Services), Telecom Commission, inaugurated the tutorial and delivered the key note address. The various subjects covered during the tutorial were :

Model of demand and revenue growth - NP Sen, MD, S M Electronics & Services

Telecom Structure of Maharashtra state - BK Basak, CGM (Projects), MTNL, Bombay

National Networks - C Ramesh, Chief GM, ALTTC

End to End Grade of Services, Interface Approval, Attenuation Plan, Numbering Plan - R N Sharma, DDG, Telecom Engg Centre

Local loop optical fibre cable - M K Garg, DDG (T), TEC

Management Architecture for Service Industries - Prof Vinaysheel Gautam, IIT Delhi

Network Architecture: Technical Solution - Mr Samland, Siemens Ltd.

Network Architecture : Technical Solution - Mr Tom Lee, Motorola

Network Architecture : Technical Solution - Dr Arthur Ross, Qualcomm International

Service Provider point of view - Ms Wolf, Detecon

Principles of Revenue Sharing, Tariff for New Services eg: ISDN, IN - S P Purwar, Sr DDG, Telecom Commission

National Frequency Plan - AM Joshi, Wireless Advisor, DOT.

### **IETE CASET Programmes**

The IETE CASET has been conducting programmes successfully at Hyderabad since Oct 1994. A brief information on the programmes conducted so far and those in the offing is given below:

#### ***Programmes Conducted***

*October 10-12, 1994.*

"Expert Systems & Artificial Intelligence" Course Director - Jairam K Hebbar, NRSA, Hyderabad.



A view of the audience at the tutorial

*November 7-9, 1994.*

"Agri-Electronics - A Tool for Agricultural Systems Management".

Course Director - Dr J H Agarwal, JNKVV, Jabalpur.

*January 17-19, 1995.*

"Knowledge based, Geographic Information System".

Course Director - Jairam K Hebbar, NRSA, Hyderabad.

### **Programmes Planned**

*February/March - 1995.*

"Expert Systems in Medical Practice"  
Course Director - Jairam K Hebbar, NRSA, Hyderabad.

Co-Course Director - Dr Krishna Bharath B and Dr Kumaresan K.

*April, 1995.*

"Cellular Radio - GSM Standards"

Course Director - Y P Singh, Siemens, New Delhi.

*May 1995.*

"Access to Internet through NICNET"  
Course Director - Dr N V Koteswar Rao NIC, Hyderabad.

*June, 1995.*

"Energy Management Systems"  
Course Director - Dilip Kumar, ECIL, Hyderabad.

*July, 1995.*

"Recent Trends & Techniques in Radar Systems"  
Course Director - Dr R P Shenoy, IISc, Bangalore.

programme as its pilot project. IETE-CDETS will soon have its own uplinking facilities, studio and other infrastructure for conducting its programmes. Institutions desiring to hold such programmes may contact Shri OPN Calla, Project Director (Tel 079-429180, Fax 079-641563).

### **IETE-STEP Program**

IETE-CDETS in close collaboration with TTTIs, NPIU, IGNOU and ISRO, is conducting an experimental interactive programme through satellite from 21 Mar to 25 Mar '95 for the development of Polytechnic staff under the World Bank assisted project of Technician Education for Staff Development. The subject of the programme is Microprocessors.

In the present programme, the lectures will be delivered from the studio of Indira Gandhi National Open University and will be uplinked by the Transportable Communication Terminal (TRACT) of ISRO. The programme will be received simultaneously at Ahmedabad, Bhopal, Calcutta, Chandigarh, Delhi and Madras. The talk back (interaction) will be done by the participants with the help of STD telephone/telefax. It will be a one way video. two way audio programme.

Each lecture of 30 minutes duration will be followed by an interaction of 30 minutes during which participants at the various locations will be allowed to clarify their doubts from the experts. An anchor person at the Teaching End will compere the experimental programme and will also regulate the interaction by the participant.

The lectures will be delivered in two modes : video-taped and live. The interaction will be totally live. The complete hardware has been provided by IETE, Software by TTTIs, uplinking facilities by ISRO and studio facilities by IGNOU.

### **Manufacturing Excellence for Competitive Advantage**

IETE will be holding a seminar on "Manufacturing Excellence For Competitive Advantage" on 21 July '94 in collaboration with all the important Associations of Electronic Industry viz. CETMA, ELCINA, IEEMA, ITQM, MAIT, NASCOM and TEMA, under the sponsorship of DoE and DoT. The first preparatory meeting of the steering committee was held on 28 Feb '95 at IETE.

### **NORAD**

A six -month social welfare programme of training poor needy urban women as Data Entry Operators has been completed at six IETE Centres, viz, Ahmedabad, Calcutta, Delhi, Jabalpur, Madras and Trivandrum. A computer literate force of 300 women prepared under the above programme has found almost 100% employment at various private and public organisations. The trainees were paid scholarship of Rs.250 p m during the training.

IETE is now conducting a one year Entry Level junior programmers course at the above six centres and four additional centres viz, Bombay, Bangalore, Madras and Pune.

## **IETE PROJECTS**

### **IETE-CDETS**

After the successful completion of satellite based distance education programme for its students, the IETE has decided to establish its own Centre for Distance Education Through Space (C-DETS) at Ahmedabad which is conducting the STEP(Satellite based Television Experiment for Polytechnics)

## **IETE AWARDS**

The last date for receiving nominations for the IETE Awards for the year 1993-94 has been extended to 31 March 1995.

The Awards under consideration are : Ram Lal Wadhwa Gold Medal, Hari Ramji Toshniwal Gold Medal, Bimal Bose Award, Lal C Verma Award, IETE-IRSI-83 Award, Flt Lt Tanmaya Singh Dandass Memorial Award, Prof K Sreenivasan Memorial Award, Prof SVC Aiyar Memorial Award, Prof S N Mitra Memorial Award, Bapuseetharam Memorial Award

## Recognition for IETE as Scientific and Industrial Research Organisation

The Dept of Scientific and Industrial Research, Govt of India, has renewed the recognition of IETE as a Scientific and Industrial Research Organisation (SIRO) for a period of 3 years ie 1.4.1995 to 31.3.1998.

### NEWS FROM LOCAL CENTRE

#### Aligarh

The following activities are reported by the centre :

- Prof S A Abbasi delivered a lecture on **Application Specific Integrated Circuit (ASIC) Design** at the IETE Aligarh centre on 30.1.95.
- The IETE Aligarh centre organised a technical quiz contest (Techno-Quiz 95) for undergraduate students of Electrical, Electronics & Computer Engg branches on 1.2.95 at Zakir Husain College of Engg & Tech, AMU, Aligarh. About 96 students participated in the context.

#### Bombay

- The centre organised a two day seminar on **Communication in the Next Decade** on 12-13 Jan 95 at Air India Auditorium Bombay.

#### Calcutta

Dr C J Gibbins of Rutherford Appleton Laboratory, UK delivered the Acharya J C Bose Memorial Lecture on **Millimeter Waves-Future Communication Systems** on Feb 22 1995 at Calcutta.

#### Delhi

A one day workshop on **Cable TV : Trends & Challenges** was organised on Feb 25 '95 at Delton Hall IETE HQ. The workshop covered various aspects of cable operation the technology, integration of services, social; legal and commercial issues. The workshop was inaugurated by Dr J K Jain, MP and

President Jain TV. Shri Bhaskar Gosh, Secy I&B delivered the keynote address and Shri Jawahar Goel of Zee TV the valedictory address.

#### Madras

The centre co-sponsored a one day seminar on **Electronic Media-Privatisation** on Jan 24, 1995 at Kanchi Hotel, Madras along with the Broadcast Engg Society & IEEE. Shri Bhaskar Ghosh, Secy, Information & Broadcasting inaugurated the seminar and delivered the keynote address. The seminar was well attended and wide coverage was given in leading newspapers and TV and AIR broadcasts of the Madras station.

#### Pune

The pune centre organised a seminar on **You & Value Added Services** on 7-8 Jan 1995 at Firodia Hall, Institution of Engineers, Pune. The activity was supported by DOT, MTNL, VSNL, ISRO, DOE, Railways, Defence Services etc. A Proceedings of the papers presented at the seminar was also released.

#### Vijayawada

Under the professional development programme, a study tour was organised to INCAP Capacitors, Nidamanur on 11th Jan 95. The programme began with a brief orientation lecture on manufacturing method followed by a tour to the production & testing area, quality control section etc.

Under the same programme, a technical lecture on **Computers and Parallel Processing** was delivered by Dr LSS Reddy, Asst Prof, VRS Engg College, Vijayawada on Jan 24, at KES Polytechnic for Women Auditorium, Vijayawada.

### DISTINCTIONS



**Prof SC Dutta Roy**, Dept of Elect. Engg., IIT, New Delhi and Vice President, IETE has been elected as an IEEE Fellow w.e.f. Jan

1, 1995 in recognition of his outstanding contributions to the field of electro-technology.



**Lt Gen MK Ghosh**, Signal Officer in Chief, Indian Army was awarded the Param Vishisht Seva Medal by the President of India on the Republic Day, 26th Jan 1995. Lt Gen Ghosh is a Council Member of the IETE.

**Prof Yash Pal** has been conferred the Honorary Fellowship of the Computer Society of India in recognition of his outstanding contributions to the promotion of Science, Space Communications and Information Technology at a function held at Calcutta during the 29th Annual convention of CSI.

### TECHNICAL NEWS

#### NIC Linkup to INTERNET

The NIC has set up a centre for World Wide Web (C-WEB) service over the NICNET in collaboration with Information Dimensions Inc (IDI) of USA for linking to Internet. The C-WEB users will be linked to 200 other networks in over 160 countries on the Ku band based information highway of NIC. Till the time the Govt commercialise NICNET, the excess capacity on the highway and C-WEB are available free of cost to NICNET users.

#### New Telecom Service on Internet

International Telecom Centre (ITC) is a new point of access on the Internet dedicated to providing the latest breakthrough information on telecommunications from around the world. The following features are available online 24 hrs a day with no charge for accessing, browsing or downloading any of its materials. ITC is fully interactive facility that offers full graphics, sound and video for those using the World Wide Web.

- A worldwide calendar of telecom events

● **A Demo Board** offering free downloads of newest & best telecom demos.

● **A Product Board** with continually updated information on telecom products over 1900 international telecom vendors.

● **The Printed Word**, providing information on a wide variety of telecom journals, books, magazines & newsletters. At present 800 journals and magazines from around the world are listed which can be previewed and ordered online.

● **Telecom Tips on Tricks & Techniques** to help users reduce their current communication costs.

● **The Education Alliance**, an assist program on education and training resources available in the field of telecom.

● **Telecom & Government**, supplying latest information on existing Telecom treaties, Govt regulations and legal rulings.

● **Help**, delivering a catalog of consultants, association and organisation, technical help sources, worldwide standards and databases in telecom.

To access ITC on Internet use the following addresses :

1) Via World Wide Web - <http://www.telematrix.com>

2) Via Gopher - <gopher:telematrix.com>

3) Telnet to - [telematrix.com](telnet:telematrix.com)

For more information, contact Mr Gregory Johnson, MD, Ph(i) 914.353.0331, Fax (1) 914.353.0335 or email : [gregj@telematrix.com](mailto:gregj@telematrix.com)

### **100th Anniversary of Radio-Communication**

1995 has been chosen to celebrate the centenary of Radio communications. It marks the 100 years of Marconi's first experiments in Russia.

Wireless communication was the culmination of a long evolution in the understanding of electromagnetic waves, with seminal contributions by Maxwell (Scotland), Hertz (Germany), Lodge (England) and others. A key contributor was Branly (France) who conceived the "coherer", the detector used both by Marconi and Popov. After his first experiments in 1895, Marconi demonstrated message transmission publicly in England in 1896, Popov is also said to have made a demonstration about the same time and his first experiment to detect thunderstorms by radio is widely acknowledged.

Under the guidance of Richard C Kirby, who retired as Director of the Radio communication Bureau at the end of 1994, a calendar of events has been prepared to celebrate the 100 years of radio-communications through out 1995. It includes a special programme to take place on World Telecommunication Day (17 May). By virtue of this programme, two lectures will be given by eminent personalities of the radiocommunication world : one on the origins of the radiocommunication and the other on radiocommunication in the 21st century followed by a discussion panel with invited guests. The panel will preview wireless communication in the 21st century.

Furthermore, on 7 October, a special joint session of telecom 95 Strategy and Technology Forums will be devoted to radiocommunication.

*(Extracted from ITU Newsletter 1/95)*

### **WORLDTEL**

WorldTel is a recently created organization of ITU dedicated to narrowing the global communications gap through business ventures in developing countries. WorldTel was officially launched in January by the ITU, a United Nations specialized agency for telecommunications. The WorldTel mission is to develop and support, privately-funded telecommunications projects in developing nations. Client nations would obtain badly needed credit on reasonable commercial conditions so as to establish access to basic telecommunications at a time when nearly four out of every five people

in the world lack primary services. Operators would benefit from increased traffic. The industry would gain more market opportunities. Industrialized nations would benefit from improved and increased global communications. Private investors would also benefit from large, newly created markets and diversified portfolios.

These joint ventures will permit the private sector to have full control of its investment, allow clear accountability of management, and timely responsiveness to market conditions, said Pekka Johannes Tarjanne, Secretary-General of the ITU. It is a win-win situation for investors, developing countries, industrialized nations operators and the telecommunications industry.

The members of the Board are: Pekka Johannes Tarjanne, Secy-General of ITU, Abdul Rahman Khalid Al-Ghunaim, Chairman of the Bank of Lebanon and Kuwait; Andres Bande, President of Ameritech International; Sam Pitorda, adviser to the Prime Minister of India, and Melvin Ward, Chairman of Logica Pty Ltd of Australia. An additional board member will be nominated from the investment banking sector. The interim Board of Directors' first meeting is scheduled for march.

Through its efforts, WorldTel hopes to break the vicious cycle that exists in developing countries whereby economic growth is needed to generate funds to improve telecommunications capacity and capability, but the poor availability and quality of telecommunications deters investors from providing the required capital.

WorldTel can deliver value in ways that powerfully differentiate it from existing institutions. It will focus exclusively on the telecommunications and information technology sector to provide specific expertise to client countries. These countries will be selected and served by a regionally decentralized organization, so WorldTel can deliver tailored solutions that provide unique capabilities. It will make equity investments and can undertake a direct operating role if required. No existing entity combines these attributes.

*(Extracted from an ITU Press Release ITU/95-3, 23 Feb, 1995.)*

## 38th Annual Technical Convention of IETE

The 38th ATC of the IETE will be held during 30th Sept - 1st Oct '95 at Pune. The theme of the convention is "Wireless Technologies & Information Highways".

The theme was chosen keeping in mind the 100th anniversary celebration of Radiocommunication. The call for papers for the convention will be issued in the next issue of newsletter.

### FORUM

Year 1995 has begun. This is anticipated to be a landmark year in the history of Indian Telecom. The Govt of India has already opened the operation of basic telecom services, which means Public Switched Telephone Network (PSTN), to private operations. Govt has also announced induction of Integrated Services Digital Network (ISDN) by middle of 1995. Even I-Net Phase-II, expansion of existing Packet Switched Data Network (PSDN) to cover 89 cities, is in full swing. This will even have frame relay system to provide improved speed and quality. Even the induction of Asynchronous Transfer Mode (ATM), Synchronous Digital Hierarchy (SDH) and Cell Relay technologies may not be far.

This improvement in switching and distribution of voice and data coupled with ISDN has paved the way for world class telecom and network services. Suppliers and operators of Value Added Services, private software development centres, database organisations and individuals depending on PSTN, PSDN and other networks can now plan to open their own multi-media based home centres. Housewives, intellectuals, professionals, students and all others can open their own offices and development centres at their bedside or study table and undertake any task or access any other source and become self-employed professionals.

This once again highlights the need for obtaining charter for professional bodies like IETE. Once chartered all IETEians and other professionals, within the terms of charter, can undertake consultancy and professional work in their own time. This also raises the issue of Quality and rules relating to Private Employment. With opening of the telecom, one of the most important but protected sectors of economy, the need for Quality has assumed greater importance. Technocrats & professionals with accreditation as Lead Assessors, Quality Auditors etc will have better roles to play.

In the past, Forum had highlighted the need for Charter, Quality & Values, Non-Consultancy Allowance and impact of disparities in Pay & Allowance of Government, Private Indian and Non-Resident Indians in multi-national organisations. In 1995, Forum would like to highlight the need to allow professionals in Government and Private organisations in India to undertake consultancy and development activities in their own time.

Every individual needs to do his/her job with full sincerity and dedication. But, a week has seven days and a day has twenty four hours. Even if a person works for 12 hours in a day, spending about 42 to 45 hours in office per week, he/she has good 42 to 45 hours still available (one still has 12 hrs everyday for rest and fun) for doing any useful and creative work. This need will be felt more once an individual is able to set up a personal development centre and access any database and organisation through improved telecom. A Pentium (P6 or P7 soon) or 486 or 386 based multi-media station will become the carrier of new age youth and professionals. Indians have proved themselves by going abroad. They can now prove themselves by being in India.

Forum, therefore, exhorts all IETEians and other Professionals in the society to ponder over the new Information Age revolution and use their initiative and abilities in harnessing the new possibilities and requirements. Let us ride the wave of liberalisation in Information Age and bring laurels to the nation and IETE. Let 1995 be the year of the Information Age Professional.

Cdr (Dr) H S Sharma (Retd)  
Hony Editor

**ANNOUNCEMENT AND CALL  
FOR REGISTRATION**

**26TH MID TERM SYMPOSIUM  
on  
MICROWAVES AND MILLIMETER WAVES- RECENT TRENDS**

Dates : 8-9 April, 1995

Venue : Defence Electronics Applications Laboratory  
Raipur Road, Dehradun - 248 001

**Technical Sessions**

- Applications
- Demand Patterns - Present and Future
- Technology and Manufacturing Aspects
- Training and Manpower

**Other Events**

- 22nd Vikram Sarabhai Memorial Lecture
- 10th Lal C Verman Award Lecture
- Panel Discussion
- Valedictory Function

**Coverage**

Eminent experts in the fields of microwave and millimeter wave from defence, industry and government departments will chair the technical sessions and deliver talks on the following topics.

- Communication Systems
- Sensors-Imaging and non Imaging
- Devices, Components and Sub-Systems
- Antenna and Propagation
- Computer Aided Design and Modelling

- Radar Systems
- Aircraft and Spacecraft Systems
- Hybrid and Monolithic Integrated Circuits
- Measurement Techniques

A pre-symposium course on Microwave and Millimeter wave Systems and Applications will be conducted for the benefit of scientists and engineers. An Exhibition of products manufactured by reputed companies in related areas will also be held during the symposium. A souvenir will be released on this occasion which will contain a report on major activities of IETE, messages from dignitaries, technical papers, and advertisements from various organisations. Advertisements for inclusion in the Souvenir of the Symposium may be submitted by Jan 31, 1995. Advertisement tariff is given in the registration form.

**Registration Fee**

IETE Corporate Members	Rs.300/-
IETE Student Members	Rs.150/-
Nominees of IETE's SDMs	Rs.1000/-
Others	Rs.1200/-

**Advertisement Rates**

Back Cover	Rs.5000/-
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Full page	Rs.3000/-
Half page	Rs.2000/-

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Advts in full page only)

**All correspondence to :**

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Raipur Road, Dehradun - 248 001**

**New Telephone Numbers of Dehradun Centre : Tele : 0135-687227, 0135-687258 Extn. 4033 , Fax : 0135-687265, Telex : 0585-233, 0585-284**

## CALENDAR OF EVENTS

Subjects	Dates	Venue	Contact
International Wireless Communications Expo IWCE Spring	25-27, April 1995	Las Vegas Nevada, USA	Counselor for Commerical Affairs, US & Foriegn Commercial Service, American Embassy, Shantipath, Chanakyapuri, N Delhi-110 021
Communications Technology Indonesia '95 & Broadcast Technology Indonesia	26-29 April 1995	Jakarta Indonesia	Mr P P Shastri, Orbit International Trade Fairs, 1127, Midway Premises A S Marathe Marg, Prabhadevi Bombay 400 025
Design Reliability Training Course	2-5, May 1995	Madras	Shri A K Sinha, Director, Centre for Reliability STQC Dte, DOE, VSI Estate, Thiruvanniyur, Madras 600041
Workshop on Telematics'95	1-15, June 1995	Nirjuli	Shri C T Bhunia, Head, ECE Dept, NERIST, Nirjuli - 791 109, (AP)
19th International Television Symposium and Technical Exhibition	8-13, June 1995	Montreux	Montreux International Television Symposium and Technical Exhibition PO Box 1451, Rue du Theatre 5, 1820 Montreux/Switzerland
ISRAMT '95 - The 5th Intl Symposium on Recent Advances in Microwave Technology	11-16, Sep 1995	Kiev & Black Sea Ukraine	B Rawat, Technical Program, Co-Chair Dept of Elect Engg, Univ of Nevada Reno, Nevada 89557-0153, USA
ITU's Telecom 95 Forum Technology Summit & Strategic Summit	3-11, Oct 1995	Geneva	Prof B S Sonde, Dean, Faculty of Engg, IISc, Bangalore - 560 012
Broadcast, Cable & Satellite India '95 Exhibition and Conference	25-28, Oct 1995	New Delhi	P S Sundaram, Broadcast Engg Society, Room No.410, Research Dept, AIR & Doordarshan, 14-B Ring Road, IP Estate, New Delhi - 110 002
Sinapore Computer Society (SCS) Conference	23-24, Nov 1995	Singapore	The Secretariat, Singapore Computer Society, 71 Science Park Drive, NCB Building, Singapore 0511
Interkama '95 Trade Fair for Measurement & Automation	30 Oct - 4 Nov 1995	Dusseldorff Germany	Orbit, 1127 Midway Apts, A S Marathe Marg, Prabhadevi, Bombay - 400 025
International Workshop on Physics of Semiconductor Devices	11-16, Dec 1995	New Delhi	Dr Krishan Lal, Chairman (IWPSD-95) NPL, Dr K S Krishnan Road, New Delhi - 110 012
National Symposium on Ocean Electronics (SYMPOL '95)	18-20, Dec 1995	Cochin	Dr PRS Pillai, Coordinator SYMPOL '95, Dept of Electronics, Cochin Univ of Science & Techy, Cochin-682 022
International Conference on High Performance Computing	27-30, Dec 1995	Goa	Sartaj Sahni, CIS Dept, CSE301 PO Box 116120, Univ of Florida, Gainesville, FL 32611, USA
International Conference on Trends in Industrial Measurement & Automation (TIMA -96)	3-7, Jan 1996	Madras	Dr P E Sankaranarayanan, CDES (AAPC/DOE), CEERI Madras Centre, Taramani, Madras - 600 113
Intl Conf on Power Electronics, Drives and Energy Systems for Industrial Growth (PEDES '96)	8-11, Jan 1996	New Delhi	Prof S S Murthy, EE Dept, IIT New Delhi - 110 016

Edited and Published by Ms T V Sreelatha, Assistant Managing Editor, for The Institution of Electronics and Telecommunication Engineers,  
2 Institutional Area Lodi Road, New Delhi 110 003 and printed at the Central Electric Press, A-12/1, Naraina Industrial Area, Phase-I, New Delhi 110 028