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# IEEE Region 8 newsletter



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THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS  
INCORPORATED

THE FIRST IN A SERIES OF FOUR CENTENNIAL ISSUES

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## AFRICON '83 – A GREAT SUCCESS

AFRICON '83 the first IEEE Conference on Applications of Electrical Technology for Africa, was a great success, and will be followed in the future by additional IEEE AFRICON '83 Regional Conferences.

About 200 participants from 25 countries filled the Conference hall at the Kenyatta International Conference Centre in Nairobi, Kenya, as the Honourable Henry K. Kasgey, Minister of Transport and Communications of Kenya declared the Conference open. The plenary opening session included addresses by Mr. Philip O. Okundi, Conference General Chairman, and by Mr. K. E. Drangeid, Director of Region 8. At the end of this session, IEEE president James B. Owens presented a plaque of appreciation to the Minister and gave him samples of the 65 volumes of IEEE Press Books presented by the IEEE to the Central Training School of Post and Telecommunications Corporation.

The Opening Session was followed by keynote lectures by IEEE President Owens, on World Energy Sources; by Mr. Okundi of Kenya P.& T. Corporation, on Two Decades of Telecommunications Development in Kenya; by Mr. Jabbal of Kenya Power & Lighting Co. on Power Development in Kenya over the next 20 years and by Mr. Tedros, Panaftel Co-ordinator of ITU, on the development of the PANAFTEL network.

One of the interesting topics of the Conference was the use of modern communication technologies, including Satellites and Optical fibres, in Africa. A Paper by A. D. Taylor from Nigeria, presented the results of a feasibility study on a digital domestic satellite for Africa, concluding that an African satellite system is a necessity and can be implemented within six years after project go-ahead.

Similarly, the keynote lecture by H. S. Jabbal of Kenya discussed the needs of Kenya in Electricity and concluded by showing that enough natural resources are available in Kenya to meet the increasing demand for electricity over the next 20 years.

The 60 participants from outside Kenya, including participants from eight African countries as well as from Europe, U.S., India and Japan made AFRICON '83 a truly international conference and a forum for free discussion of new ideas in research, development and applications of electrical, electronic, and computer technologies.

The coincidence of the celebrations of 20 years of Independence of Kenya and the Centennial of the IEEE made AFRICON '83 even more meaningful. A special Centennial Plenary session was held on the last morning of the Conference and hosted lecturers from different nations to discuss future trends in technology and in technological education. The first lecturer at this session, IEEE President Owens, who described the history of the Institute was followed by lecturers from Italy, Japan and the U.S. who discussed developments in technologies and services. The two last lecturers at this session were Prof Abou-Taleb from Egypt and Prof Raz from Israel, both dealing with the problem of bridging the technology gap in developing countries. Prof Abou-Taleb, a former



(from left to right) Dr. Jacob Baal-Schem, Conference Co-ordinator-Region 8; Mr. Philip O. Okundi, Chairman-Africon '83; Mr. Dipak D. Patel, Chairman-East Africa Section.

minister of Communications of Egypt, proposed to adopt a policy of stressing technical education much more than is usual nowadays in higher education while Prof Raz of Tel-Aviv university brought a concept for the ranking of development priorities and discussed two policy alternatives for the accumulation of human capital in developing countries. During the conference there were many opportunities for the delegates to socialise and meet their colleagues from Kenya including a cocktail reception at the Nairobi Serena Hotel which was attended by many Kenyan Government Officials. Technical tours were also arranged and participants had the chance to visit the Kenya Power and Lighting Co. and the 'Voice of Kenya' broadcasting station.

Due to generous donations by IBM, Kenyan Industries and consultants and by the IEEE Centennial Committee, Africon '83 was also a financial success as, despite the low fees, all expenses were covered by its income.

In the beautiful setting of Nairobi AFRICON '83 (organised by IEEE Region 8 and the IEEE Kenya Section and co-sponsored by seven professional societies of the Institute) has become the cornerstone for the implementation of new developments in Electrical and Electronics technology in developing countries and for future activities of the Institute of Electrical and Electronic Engineers in Africa.

J. BAAL-SCHEM  
Region 8 Conference Co-ordinator

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## FROM THE DIRECTOR OF REGION 8



Karsten E. Drangeid  
Director Region 8 1983-84

The Centennial year of the IEEE is finally here. The preparations and planning for the celebrations have taken a long time and one of our own special contributions from Region 8 is "The Centennial Review" which accompanies this newsletter. It is a look back over the last hundred years charting the growth of the IEEE and this Region.

The IEEE has matured from what in effect was a conference committee for the Philadelphia Exhibition in 1884 to one of the largest technical and scientific institutes in the world with almost 250,000 members.

The growth of the IEEE has been largely due to the services it gives to members in providing a high standard of publications and in sponsoring technical conferences – which between them provide a transnational network for the exchange of ideas and information. Its success can also be attributed to the stress it lays on education by the encouragement of students and the opportunities it presents for continuing education at all levels.

This has been achieved through the enthusiasm of thousands of volunteers who have given their time and energy – often with little recogni-

tion or reward. I would like to take this opportunity to thank you all for what you have done in the past and to hope that you will continue to give your support to the IEEE at the start of its next 100 years.

I would also like to thank the IEEE staff on behalf of all members for their hard work and devotion in the past but especially in preparing for this Centennial year.

The IEEE spirit that has been typical since the formation of the AIEE in 1884 could not have been demonstrated better than at AFRICON '83 where the boldness, initiative and dedication of all the volunteers involved made it a great success. It was the first in what we plan to be a series of conferences in Africa which I believe will increase our membership substantially and I was happy that Region 8 commenced its Centennial celebrations thereby breaking new ground in a developing area.

The celebrations will go on during 1984 and we should use this opportunity to direct the attention of the world to the many remarkable achievements made by electrical and electronics engineers. We must point out how these have improved the lives of us all and how future developments can be expected to be of great service to mankind. This is an opportunity to increase confidence in science and technology and to emphasise the importance of our profession.

In closing I would like to express how honoured I feel to have the privilege of serving you during this Centennial year.

KARSTEN E. DRANGEID  
Director, Region 8.

## 26th SEPTEMBER 1984 — EUROCON '84 — 28th SEPTEMBER 1984 BRIGHTON CONFERENCE CENTRE, BRIGHTON, ENGLAND

6th European Conference on Electrotechnics

### "Computers in Communication and Control"

Plans are well advanced for EUROCON '84 to be held on 26-28 September at the Brighton Centre, Brighton on the south coast of England. Brighton is an easy distance from London, Heathrow and Gatwick airports and the major ferry ports.

The conference is sponsored by the Convention of National Societies of Electrical Engineers of Western Europe (EUREL) and Region 8 of the Institute of Electrical and Electronics Engineers (IEEE).

The aim of the Conference is to demonstrate the impact of computer-based technology, including the use of microprocessors, on the

disciplines of communication and control. Attention will therefore be focussed on contributions which cross disciplinary boundaries.

There will be an associated **exhibition** which will allow manufacturers the opportunity to display their latest equipment. This will be situated in the Rainbow Suite on the ground floor. Intending exhibitors are requested to submit their application (with deposit) by 9 March 1984. The exhibition area is restricted and allocation will be strictly on the basis of the date of receipt of deposit. All enquiries concerning the exhibition or the conference should be made to: EUROCON 84 Secretariat, Conference Services, Institution of Electrical Engineers, Savoy Place, London WC2R 0BL, UK.

## ICC '84 TO BE HELD IN MAY IN AMSTERDAM

The International Communications Conference of IEEE Communication Society will be held for the first time this year in Europe. The RAI Conference Centre of Amsterdam will host ICC '84 on May 14-17, 1984.

The combination of a good theme – Science, Systems, Service – and an exciting European Venue for the conference has stimulated authors from many countries to submit papers for ICC '84.

Attendees at Amsterdam are assured of an excellent overview of current and future technology – and of how it can best be harnessed to meet the communications needs of today and tomorrow.

The conference will start with a plenary session that will most definitely

serve to raise the scope of ICC '84 well above the level of a mere technical meeting and during four days Technical sessions will deal with the subjects of the conference. A tutorial session on "DIGITAL SATELLITES AND TERRESTRIAL RADIO SYSTEMS" will be presented by Prof. Feher of the University of Ottawa, Canada.

ICC '84 is sponsored by IEEE Communications Society, IEEE Benelux Section and IEEE Region 8 with participation of other professional societies in Europe.

For further information please contact: Dr. T. A. CLAASEN, PHILIPS RESEARCH LAB. WY-2, 5600 MD EINDHOVEN, The Netherlands.

### EEC Advanced Summer Course on:

#### DESIGN OF MOS-VLSI CIRCUITS FOR TELECOMMUNICATIONS

June 18-29, 1984

SSGRR, L'Aquila (Italy)

This course will provide a detailed exposure of the design of MOS-VLSI Circuits for data acquisition, conversion, processing, and transmission. The lectures coming from universities (BERKELEY, COLUMBIA, DORTMUND, TORONTO, etc.) and from industries (SGS, CNET, PHILIPS, CEM, SIEMENS, AMD, TI, ATT, ITT, etc.) will concentrate on state-of-the-art design methods. All attendees will have the opportunity to obtain "hands-on" design experience using software design aids.

For information contact the Course Director:

Prof. P. Antognetti – Istituto di Elettrotecnica  
Viale Causa, 13 16145 GENOVA (Italy)  
Tel. +3910 303651; Telex 211148

### NATO Advanced Study Institute on:

#### MICROARCHITECTURE OF VLSI COMPUTERS

July 9-20, 1984

SOGESTA, Urbino (Italy)

This course will focus on the internal microarchitecture of present and future VLSI computers. The academic lecturers (from IMAG, CMU, BRUNEL, INRIA, etc.) will describe more general, research-oriented topics, while industrial lecturers (from XEROX, DEC, INTEL, SIEMENS, NEC, IBM, etc.) will describe in detail the architecture of their latest product.

For information contact the Institute Director:

Prof. P. Antognetti – Istituto di Elettrotecnica  
Viale Causa, 13 16145 GENOVA (Italy)  
Tel. +3910 303651; Telex 211148





1884 • 1984

## SPECIAL CENTENNIAL ARTICLE

## A CENTURY OF ELECTRICAL PROGRESS



1884 • 1984

It was Lord Kelvin who said that we can understand nothing of a matter unless we can measure it. How can we measure progress during the last century, a century in which engineering and scientific progress has been by far greater than in any other of the billion centuries since the earth was created?

Let us consider two methods: the first is to gain an impression of the level of electrical engineering towards the end of the last century, from which we can measure how much we have progressed to the level as we know it today. For instance, during the 1880s Warren de la Rue was investigating electrical discharges through gases, and the equipment to be found in his laboratory is no doubt typical of the period. Amongst the equipment in his laboratory we should have seen:

Daniell and other types of cells; Discharge cathode ray tubes; An electrostatic machine; An electromagnet; An electroscope; Galvanometers; A Geissler tube; Induction coils; Leyden jars; A resistance box; A rheostat; A heavy galvanometer bench to reduce vibration.

We can also obtain an idea of the position towards the end of the last century from publications of the period. So I have made some extracts from a book published in 1890 with the title "Discoveries and inventions of the Nineteenth Century". The first extract appears below, and other extracts will appear in the other three issues to be published in this, our Centennial Year.

The second method of measuring progress is to look at the dates of some of the events which have pushed forward the boundaries of knowledge in electrical, electronic, and computer engineering and science since 1882. It is not possible to compile a definitive list of all such events because a small and seemingly insignificant discovery or application can lead to something of far greater impact. However, below are printed a few of the great stepping stones that bridged the gap between the knowledge that existed in 1882 and the present day state of the art.

- 1882 Edison discovered his effect
- 1888 Herz produced electromagnetic waves
- 1891 Tesla produced the first one million volt induction coil
- 1895 Röntgen discovered X-rays
- 1897 Thomson discovered the electron
- 1900 Planck described the quantum theory
- 1911 Rutherford described the theory of atomic structure
- Wilson invented the cloud chamber
- Onnes discovered superconductivity
- 1915 Einstein described his general theory of relativity
- 1919 Discovery of the proton
- 1926 Busch demonstrated the lens properties of magnetic coils
- 1927 Wideroe constructed the first resonance accelerator
- 1928 Appleton discovered his layer

### Daniell's Cell – Standard Equipment in the Laboratory of Warren de la Rue in the 1880s

Daniell's constant cell is represented in Fig. 259, where D is a battery of ten such cells, A is a cylindrical vessel of copper, C is a tube of porous earthenware, closed at the bottom, and within it is suspended the solid rod of amalgamated zinc, B. The copper vessel and the zinc rod

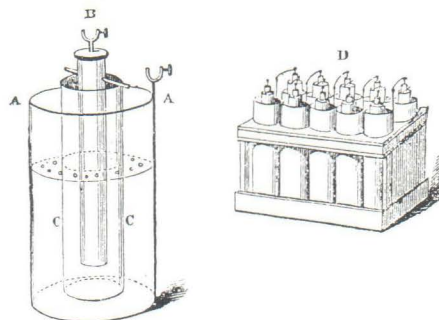


FIG. 259.—Daniell's Cell and Battery.

are provided with screws by which wires may be attached. In the copper vessel is placed a saturated solution of sulphate of copper, and some crystals of the same substance are placed on the perforated shelf within the vessel. The porous tube is filled with diluted sulphuric acid. When the battery is in action the zinc is dissolved by the sulphuric acid, and metallic copper is continually deposited upon the internal surface of the copper vessel. Daniell's battery, in some form or other, is much used for telegraphs and for electrotyping.

(Reproduced from 'Discoveries and Inventions of the Nineteenth Century' published in 1890)

- 1930 Lawrence and Livingstone invented the cyclotron
- 1931 Jansky discovered radio waves from the Milky Way
- 1932 Anderson discovered the positron
- Chadwick discovered the neutron
- 1934 Dreyer discovered liquid crystals
- 1939 Hahn and Strassman, and Fritsch and Meitner, discovered nuclear fission
- 1946 Fry constructed the first linear accelerator
- 1948 Gabor forecast holography
- 1956 Müller developed an ion microscope
- 1958 Van Allen discovered his belt
- 1962 Vogel and Cie in Switzerland patented the first electronic watch
- 1972 Axial tomography introduced

ROBERT C. WINTON  
Secretary, Region 8

## MEETINGS IN REGION 8

### International Conference on Polymer Insulated Power Cables (Jicable 84)

The technical, economic and operational qualities of polymer insulated cables (LV, MV, HV and EHV) have led to an increasingly wider use of this equipment in electrical power transmission and distribution systems as well as in power plants and substations.

Furthermore, the use of new materials, the implementation of new manufacturing techniques, the improved understanding of dielectric, thermal and thermo-mechanical behaviours, the new operating requirements are factors generating a rapid technological evolution of these types of cables.

Jicable 84 will be held in Versailles, France, 5-9 March 1984, and will provide a forum for the exchange of research information on polymer insulated cables and on industrial development for all operating levels ranging from low voltage to the highest voltages (400 kV and more).

This conference will deal with the following topics:

- materials and components of polymer insulated power cables
- influence of water on the dielectric strength
- low-voltage and medium-voltage (1 to 30 kV) insulated cables and accessories for power distribution systems
- high-voltage insulated cables and accessories for power transmission systems
- submarine cables
- cables with improved fire behaviour for power plants, substations.

Jicable 84 is organised by seven French groups with the participation of CIGRE, CIREP, the IEEE French Section and the IEEE Electrical Insulation Society.

Further information from: Secrétariat général JICABLE 84, 11 rue

Hamelin, F-75783 Paris Cedex 16, France. Tel: 33 (1) 505.14.27; Tx: SYCELEC Paris 611045 F.

### Electronic Engineering in Degree Courses – The Way Ahead

'The Way Ahead' is the title of the fourth in the series of Conferences on 'The Teaching of Electronics in Degree Courses' to be held at the University of Hull, UK from 27th to 29th March 1984. The conference is organised by the Department of Electronic Engineering, University of Hull with the support of the Institution of Electrical Engineers and in association with the Institute of Electrical and Electronics Engineers. The previous conferences in the series, held in 1973, 1976 and 1980 were highly successful and attracted large numbers of delegates from Universities, Polytechnics, Industry and Government Institutions.

Since the last conference was held, the content of many Electronic Engineering degree courses has changed considerably reflecting the continuing expansion of microelectronic technology. The theme of the forthcoming conference is The Way Ahead and more than forty papers will be presented in sessions ranging through VLSI and microelectronics design; Information technology; Microcomputers and software engineering; Teaching methodology; Special purpose courses; Enhanced courses; Continuing education and industrial collaboration; Design and project management, to International exchanges and comparisons.

The registration fee, including the Conference Proceedings is £80, and the cost of accommodation is £35 fully inclusive.

Further information and registration details are available from the Conference Secretariat, Department of Electronic Engineering, University of Hull, HU6 7RX, UK (Telephone (0482) 497113).



#### Fourth International Conference on Energy Options

The Fourth International Conference on Energy Options – The Role of Alternatives in the World Energy Scene, will be held at the Institution of Electrical Engineers, Savoy Place, London WC2, UK, from 3-6 April 1984.

This major international conference will consider world and UK energy requirements and the extent to which these can be met by established energy sources. Keynote papers examining the current role of fossil fuels, nuclear energy and conservation technologies will be given on the first morning of the conference.

The role and state of development of conservation, alternative and renewable sources will then be considered in separate sessions. The subjects covered will include: Solar electric generation; Thermal conversion; Biofuels; Wind; Tidal and Hydro; Wave and OTEC; Geothermal; 'Advanced' fossil fuel systems; Combined heat and power; Heat pumps and bivalent systems; Fusion; Policy and economics.

A wide range of detailed, refereed technical papers on each technology will be given in poster-display sessions. Invited evening lectures, including a paper on energy in the developing world, will also be given.

Further information from: Institution of Electrical Engineers, Savoy Place, London WC2R 0BL, UK.

#### International Magnetism Conference (INTERMAG '84)

This conference will be held from 10-13 April 1984, in Hamburg, West Germany.

The aim of INTERMAG '84 is to offer the participants an extensive range of lectures covering new developments in all fields of magnetism, and information on interesting applications and techniques. Some of the subjects to be discussed are: amorphous metals, ferrites, superconductors, magnetic recording media and techniques, magnetic sensors etc.

It is also intended to hold a tutorial seminar on the day before the conference begins, i.e. on 9 April 1984. Visitors who are interested (students, teachers, institute employees) will be able to hear an introduction to and explanation of the more important subjects covered by INTERMAG '84.

The organisers of INTERMAG '84, the Magnetism Society of the Institution of Electrical and Electronics Engineers (which celebrates 100 years in existence in 1984), Verband Deutscher Elektrotechniker (German Electrical Engineers Association) and Arbeitsgemeinschaft Magnetismus (Study Group on Magnetism), expect around six hundred to eight hundred participants from all over the world.

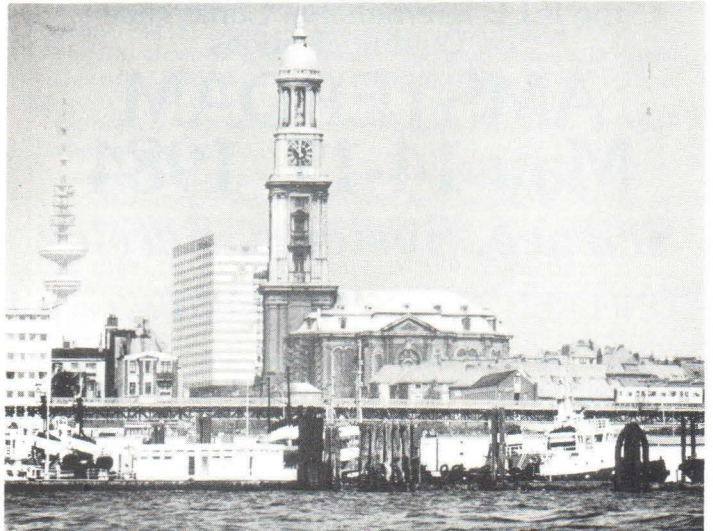
During the conference, there will be a technical exhibition which offers the chance to introduce new developments, products and equipment to the participants attending, and to provide them with relevant technical and trade literature.

On Monday, 9 April 1984, a press conference will be held and the organisers expect that journalists from all over the world will attend.

As well as the technical presentations and commercial exhibition, there will be a variety of social events such as a reception by the local government in Hamburg, a conference dinner and cultural events. Industrial visits will be arranged and the participants will have the opportunity to get acquainted with Hamburg and its surroundings by means of a series of sightseeing tours.

Further details, including hotel information and registration fees, are available from the conference chairman: Walter E. Proebster, IBM Deutschland GmbH, Research and Development, D-7030 Boeblingen, Germany.

A complete programme booklet will be available from January 1984.



Hamburg – the venue for Intermag '84



## Radar Technology



### DAY AFTER INTERNATIONAL CONFERENCE ON RADAR IN PARIS

**Lecturer:** DR. ELI BROOKNER, Consulting Scientist  
Raytheon Company, Equipment Division,  
Wayland, Massachusetts 01778  
(617) 358-2721 X2366; Telex: 92-3475

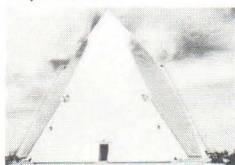
**Date:** Friday, May 25, 1984; day after INT.  
CONF. ON RADAR IN PARIS

**Time:** 8-12 AM, 1-5:00 PM

**Place:** Paris Hilton, Next to Eiffel Tower

The course is framed around parts of the new book **Radar Technology** edited by **E. Brookner**. This book (which sells for \$59) will be given out free to attendees. Also given out free are paper reprints (which sell for \$30) and supplementary notes (copies of over 800 vugraphs updated to 1984 state-of-the-art technology).

This lecture is geared to those unfamiliar with as well as those experienced with radar design.



#### COURSE CONTENT

Fundamentals of radar: phased arrays, COBRA DANE, PAVE PAWS, Foreign radars; Signal processing: What is pulse compression, SAW, SAW convolvers, CCD, BBD, FFT, all explained in simple terms, impact of VHSIC/VLSI. Survey of 28 digital signal processors; components: solid-state (UHF through X-band, discrete and monolithic), tubes, gyrotron, MM Waves; tracking:  $\alpha$ - $\beta$  and Kalman filters, the mystery taken out of them; synthetic aperture radar (SAR); How to look like a Genius in Detection without really trying.

FEE: \$130 IEEE Members, \$145 Nonmembers; add \$15 for registration after May 7. Make checks payable to Boston IEEE/AESS in U.S. dollars.

LUNCH AND COFFEE BREAKS INCLUDED. but not lodging.

For further information call Dr. Eli Brookner Boston IEEE Aerospace and Electronic Systems (AES) Society Chairman, (617) 358-2721 X2366 (Raytheon); Telex: 92-3475

#### RADAR TECHNOLOGY

Friday, May 25, 1984

#### REGISTRATION FORM:

Name \_\_\_\_\_

Title \_\_\_\_\_

Organization \_\_\_\_\_

Bus. Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Country \_\_\_\_\_

Phone: Home \_\_\_\_\_ Bus: \_\_\_\_\_

IEEE Member:

Yes ☐ No ☐

Payment enclosed:

☐ ☐

Purchase Order enclosed:

☐ ☐

DETACH AND MAIL TO:

**Boston IEEE AESS**  
**282 Marrett Rd.**  
**Lexington, MA 02173**  
**USA**







# International Conference on Communications



## PRELIMINARY PROGRAM

for  
the IEEE International Conference  
on Communications

**AMSTERDAM**  
**May 14-17, 1984**

***Science, Systems, Service***

### CONFERENCE ARRANGEMENTS

AMSTERDAM will host the first ICC ever held outside the North American continent. This marvelous city, offering the fascinating contrast between old (the largest historical city in Europe) and new (a cosmopolitan centre of world reputation) is going to be an excellent environment for this experiment to internationalize the scope of these conferences.

The conference will be held in the RAI conference centre which is located in the southern part of the centre of the city. It is easily reachable by public transportation and has a direct train connection to Schiphol Airport.

At the time of the conference Holland is a favorite spot for tourists because of the flowering tulips in the fields. Therefore **EARLY RESERVATION** is mandatory. Ask for the full preliminary program which includes a form for advance registration and hotel reservation.

### TOPICS OF TECHNICAL SESSIONS

Commun. Switching	Transmission Systems
Commun. Terminals	Other Commun.
Commun. Networks	Signal Processing
Commun. Software	Standards
Commun. Syst. Disciplines	Social Implications
Commun. Theory	Educational Services
Radio Communications	Scientific basis for
Data Commun. Systems	future commun.
Computer Commun.	Field trials and their outcomes.
Satellite/Space Commun.	Reliability and Availability

### PLENARY SESSION

The conference will start with a plenary session. Guest speakers of high reputation will highlight each of the topics of our conference theme **SCIENCE-SYSTEMS-SERVICE**.

### TUTORIAL SESSION

A tutorial session is scheduled for Monday afternoon and Tuesday morning. The topic will be **DIGITAL SATELLITES AND TERRESTRIAL RADIO SYSTEMS**. The course will be presented by Prof. K. Feher of the University of Ottawa, Canada.

### EXHIBITION

During ICC-84 a state of the art technical exhibition will be held in the area surrounding the main lecture hall and registration area.

### SOCIAL PROGRAM

The Social Program includes:

- ★ a **RECEPTION IN THE RIJKSMUSEUM** by the Dutch Government and the Mayor of Amsterdam on Tuesday evening.
- ★ the **DUTCH PARTY AT THE KRASNAPOLSKY**, on Wednesday evening: a 'Hollandse Avond' with typical Dutch food and drink in a scenic environment and brightened by famous Dutch bands and traditional song- and dance groups.
- ★ The **AWARDS LUNCHEON** on Monday in the RAI.

### TECHNICAL VISITS

A number of technical visits has been arranged:

- Dr. Neher Laboratories of the Dutch PTT
- ESTEC (European Space Agency Laboratories)
- Philips Telecommunication Industries, Hilversum
- Philips Research Laboratories, Eindhoven

### TOURS

A comprehensive sight seeing program is available. Advance registration for these tours is strongly advised. In addition a number of pre- and post conference tours have been selected by Holland International:

### TRANSPORTATION



KLM Royal Dutch Airlines have been appointed 'Official Carrier' for ICC-84. KLM staff and appointed travel agents will be happy to assist you preparing your trip to Amsterdam.

Package deals, containing air transportation to Amsterdam from major destinations in Europe, The United States and Japan and a five or six nights stay in hotels are available at very attractive fares.

If you want to receive a copy of the preliminary program and registration form, please write to  
Dr. T.A.C.M. Claasen Secretary ICC-84  
Philips Research Laboratories WY-2  
5600 MD Eindhoven The Netherlands

Name: .....

Address: .....

Country: .....



## CONTINUING EDUCATION

### Short Courses

The short courses offered by the IEEE are very effective. The basic package contains: 1 set visual aids, 1 instructors manual, for about 15 contact-hours, 15 student workbooks with examinations and evaluation forms. The following courses may be interesting to you:

#### Power Systems Relaying (Nr. 1022P, \$675):

For consulting and systems planning engineers who are aware of their need to understand the present day power systems relay problems and their solutions. It starts from the fundamental principles of protective relaying to step-by-step analysis from the simplest to today's most sophisticated relay systems, including solid state.

#### Basic Project Management (Nr. 1039P, \$425):

Explains fundamentals of successful project management – from organizing the project, defining objectives, formulating schedules, to managing work in progress and forecasting manpower and material needs. Designed for all project management personnel, the course also covers how and when to use a computer and computer graphics.

#### Programming in Basic (Nr. 1156P, \$600):

For engineers, scientists, educators, and others interested in the serious application of the microcomputer in the business, education, scientific or engineering environment. Course provides a working knowledge of the higher order languages used in the majority of microcomputer systems, including extensions incorporated to make BASIC more applicable to use in editing, word processing, data management and control application.

#### Microprocessor Seminar (Nr. 1006P, \$900):

Introduces engineers, engineering management and senior technicians involved in logic and digital design to the intricate field of microprocessors. The course includes a review of computer architecture, detailed description of a few typical microprocessor families, and some hands-on experience in simple control applications.

Delivery charges will be added to cost on invoice. Please specify method of delivery and any information we would need for customs. Mail to the Continuing Education Office of IEEE Region 8: Prof. Dr. K. Goser, FernUniversitaet, P.O. Box 940, D-5800 Hagen 1, West-Germany.



## THE CITY UNIVERSITY LONDON ENGLAND

### Master of Science and Diploma Programme in Information Engineering

A one-year course with major specialisations in Control Engineering; Measurement and Instrumentation; Electronic Digital Systems; Robotics: sensing and control; Measurement and Instrumentation in Medicine.

Students sponsored by industry may attend part-time over 2 years.

Entry to the course is in October, and applicants should possess a Second Class Honours B.Sc. degree in an engineering or appropriate science subject, or any equivalent overseas qualification.

Further details and application forms are available from:

**The Senior Tutor (Postgraduate Course)**

**School of Electrical Engineering & Applied Physics**

**The City University, Northampton Square, London EC1V 0HB**

(Tel: 01-253 4399 ext. 3823 Telex: 263896)

### Computing and Microprocessor Summer School 18th June to 20th July 1984

A course designed primarily for science or engineering undergraduates consisting of some lectures and tutorials but with emphasis on practical hands-on experience using microcomputers and mainframe computers. The Summer School is intended principally for students from the USA, and is being run in collaboration with the Computer Chapter of the UK and Republic of Ireland Section of IEEE.

Registration fee: \$1700 (reduced to \$1500 for IEEE members).

Low cost accommodation can be provided in a nearby student hall of residence (\$300 for 5 weeks).

Firm reservations must be accompanied by a \$100 advance deposit, and must be made before 26th March 1984.

Further details are available from:

**Miss P. E. Baker, Centre for Information Engineering**

**The City University, Northampton Square, London EC1V 0HB**

## ADVERTISING AND INSERTS IN THE IEEE REGION 8 NEWSLETTER

The Institute of Electrical and Electronics Engineers (IEEE) Region 8 NEWSLETTER provides an inexpensive medium for direct-mailing inserts and for placing advertisements about your conferences, courses, exhibitions, books and publications.

You can reach a select mailing list of nearly 15,000 English-speaking electronics, computer, and electrical engineers in 73 countries at a rate of US \$0.13 each for a full-page advertisement or insert – less than one-half of the cost of the postage stamps for a direct-mail shot.

### ADVERTISING RATES

Display – \$1,740 per full page, \$940 per half page, \$500 per quarter page, \$300 per one-eighth page. SIZE: 1/1 page 270mm x 190mm; 1/2 270 x 92 or 135 x 190; 1/4 135 x 92; 1/8 65 x 92. These rates are for 'camera ready' copy – a charge at cost will be made for any setting required.

### INSERT RATES

For full Regional distribution to 15,000 members in 73 countries in Europe, Middle East and Africa, size A5 or folded to A5 (148mm x 210mm), weight 10gms \$1,740, 20gms \$2,030, 30gms \$2,330. Lower rates for distribution to one country only or to a group of countries. Additional charge if collation or folding required. Recommended method of delivery is by direct air mail parcel post (check local postal regulations for maximum weight per parcel) or by air freight addressed to County Secretarial Services with prior notification of airway bill number, flight number and date. Before shipment of inserts check that the deadline date will be met including allowance for customs clearance and delivery to Guildford.

N.B. Membership figures are subject to fluctuation. Please check with County Secretarial Services on the number of inserts required.

All the above rates are net and include no allowance for discount. Cheques payable to County Secretarial Services.

### SPECIAL CENTENNIAL DISCOUNTS

Special advertising discounts will be available for clients wishing to advertise or insert in the May, August and September Centennial issues: any 2 issues 5% discount; any 3 issues 7½% discount.

**ENQUIRIES TO** County Secretarial Services,  
P.O. Box 7, Guildford, Surrey, England, GU2 5HH

Telephone National Guildford 577777 (STD Code 0483)

International +44 483 577777

Telex 264045 ERLHD G

Registered telegraphic address COSEC GUILDFORD

Deliveries 8 The Flower Walk, Guildford, Surrey GU2 5HH

DEADLINES	PUBLISHED QUARTERLY	FEB	MAY	AUG	NOV
	News to Editor	Jan 7	April 7	July 7	Oct 7
	Advertisements to County Secretarial Services	Jan 15	April 15	July 15	Oct 15
	Delivery inserts to County Secretarial Services	Jan 22	April 22	July 22	Oct 22