

# IEEE

## Region 8 News

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Europe, Middle East and Africa



Editor

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### Germany

By Prof.Dr.-Ing. E. Handschin

The German Section executive committee held its third meeting on October 26 1992 in Dresden. Following the unification of Germany, the Section is very interested in making contact with electrical and electronics engineers in the region of the former German Democratic Republic. Interest in joining the IEEE is very strong and a reception for interested engineers was held after the Dresden meeting. All IEEE members are kindly invited to enlist new IEEE members.

With regard to the financial aspects it should be mentioned that as from 1993, Section rebates will depend on the number of members in a Section. The Section now has 2,733 members; including 47 fellows, 10 life members and 187 senior members. In order to improve the structure within the Section all members are invited to participate actively in the nomination process. The nomination officer for the German Section, Prof.Dr.-Ing. W. Kaiser, University of Stuttgart, should be contacted if there are any questions.

In 1993 the German Section will take part in a number of important meetings. The IEEE conference officer, Mr. H.Ney, Philips Research Centre, Aachen should be informed about any meeting not listed below. He will also provide help in setting up an agreement between the IEEE and the organisers of meetings and conferences under the IEEE heading. The following meetings are scheduled for 1993: (i) CAE Modelling & Measurement Verification (Workshop) in

Sindelfingen, May 24 1993 (ii) 3 Fuzzy Meeting in Dortmund: 8-0th June 1993. (iii) 15 DAGM-symposium on pattern recognition in Lübeck, September 27-29th 1993 The activities of the chapters within the German section reflect the active interest of the members. The executive committee of the chapter on Microwave Theory has changed, it is now headed by Prof.Dr.-Ing. D.A. Mlynski. Chairman of the computer chapter is Mr. M.M.Köhl; At the suggestion of the chairman of the executive committee, it was decided to form a Power Engineering chapter; Prof.Dr.-Ing E.Handschin was asked to prepare a petition for its formation. This has been completed and forwarded to Headquarters. Interested Members should contact Prof.Dr. Handschin, The Student Activities

the first time in Europe. The Germany Section welcomes this meeting because it offers an excellent opportunity for demonstrating to American engineers, the high standard of German power engineering. In discussions between the German electrical engineering association and the IEEE, the chapter will play an important role. The chapter executive committee takes note of the activities of the Regional forward planning committee, Mr. R.C.Winton presents the main activities carried out so far.

The 7th conference on "Sensors - Technology and Applications" will take place in Bad Nauheim on 14-16th March 1994. It will include survey and contributed papers, and poster presentations. The conference languages will be English and German. Contributions are invited from scientists working in academic, governmental or industrial laboratories; the meeting will be organised by the Informationstechnische Gesellschaft im VDE in cooperation with the IEEE German Section.

The main topics of the conference are: Technology, New Sensing Principles, and Sensor Applications. Extended abstracts of proposed contributions should be sent before 1st September to Prof.Dr. B.M. Sessler, Institut für Übertragungstechnik und Elektroakustik,

Technische Hochschule Darmstadt, Merckstr. 25 D-64283 Germany: The deadline for submission of abstracts is 01.09.93. Deadline for submission of full papers 31.12.93

Section Chairman: Prof.Dr.-Ing. Adolf J. Schwab, Kaiserstrasse 12, 7500 Karlsruhe 1, Germany. Tel: +49 721 69 608 2520. Fax: +49 721 69 5224



Members of the Region 8 Committee and Guests from the U.S.A.

coordinator, Prof.Dr. W.Hahn, reports that there are ten student branches in Germany; the number of students is 470. Student grade is given to all undergraduates and postgraduates. All members, especially at universities, are invited to increase their efforts to enlist young engineers as student members.

In 1997 the Power Engineering Society will hold its traditional summer meeting for

## FINLAND

By Mr. Aarno Lehtola and  
Mr. Jari Jokiniemi

The year has begun successfully. Finnish IEEE volunteers have already organized two international meetings and as this article goes to print, at Mikorkemia Oy the Section will be holding a meeting on new energy technologies - see the previous Region 8 Newsletter for details. Let us briefly summarize the past activities.

**CAS Society** Technical Committee on Digital Signal Processing in cooperation with ESPRIT III BRA/NAT.

**SP/CAS Chapter**, EURASIP, and Tampere University of Technology have sponsored the first IEEE Winter Workshop on Nonlinear Digital Signal Processing. The meeting was held in Tampere, Finland, on January 17-20; it consisted of both invited and contributed papers concerning the theory and applications of nonlinear signal processing algorithms. The workshop was attended by over 100 participants from 24 countries.

**MTT/AP Chapter** organized a workshop on novel microwave materials - 1-4 February 1993. This meeting, "Bi-isotropics '93", attracted 17 participants from six countries; the focus in the discussions and presentations was on electromagnetics and applications of new microwave materials, such as chiral and nonreciprocal media. The proceedings of the workshop have been published - copies may be obtained from:

Ari Sihvola, HUT Electromagnetics Lab, FIN-02150 Espoo, Finland. Tel. 358-0-4512261, fax 358-0-4512267, E-mail ari.sihvola@hut.fi.

Chairman: Mr. Arno Lentola, Nuottakunnantie 3B9, SF-02230 Espoo, Finland. Tel: +358 0456 6032 Fax: +3580804 3475

## Denmark

by Professor J. Bach Andersen

### New Chapter

Denmark has formed a new joint chapter between Control Systems Society and Robots and Automation Society. The chairman is professor Peer Martin Larsen of the Technical University, Lyngby and the vice-chairman is professor Jan Helbo of Aalborg University. The kick-off meeting was at 23 March 1993 with

Professor Björn Wittenmark from Lund in Sweden as the distinguished lecturer on 'Practical Issues in Adaptive Control'.

### Events in May

An afternoon seminar in Copenhagen on May 4th on Wireless Local Area Networks with chairman of IEEE 801.11, Vic Hayes, NCR Netherlands BV, as the keynote speaker.

Radiosystems in the Tunnel under the English Channel by Richard Ridlington, Motorola, in Aalborg on May 11.

In Copenhagen on May 13. Can High Speed Digital Networks be Exploited by Computers? by Lothar Mackert, IBM European Net-working Center, Heidelberg.

Section Chairman: Professor Jørgen Bach Andersen, Center for Personal Communications, Aalborg University, Fr. Bajers Vej 7, 9220 Aalborg, Denmark. Phone: + 45 98 15 85 22, Fax: +45 98 15 67 40, email: jba@kom.auc.dk.

## St. Petersburg

(Section in Development)

By Dr. Sergei Zagriadski

At the beginning of this year a Section-in-development was formed in St. Petersburg, the second largest city in Russia. The formation process was started last year by Dr. Sergei Tretyakov and supported by Region 8, which covered membership fees for twentyfour new IEEE members; the Section now has thirtytwo members. This support was indeed vital and is gratefully appreciated. Section Chairman is Prof. Georgi Alexandrov (Fellow, IEEE), Electrotechnical Faculty, St. Petersburg State Technical University. We now expect approval of the Section.

St. Petersburg, with its five million population, is an important centre for industry, science and culture. There is a concentration of many recognised universities and research institutes, large companies and industrial enterprises active in the IEEE field. Many national conferences are traditionally held in St. Petersburg, some of which are now planned as international events. The new Section plans to help in organising several international conferences and workshops in 1993.

Understanding the importance of technical societies in the exchange of ideas and in the development of international scientific co-operation, many engineers and researchers here would like to

join the IEEE, but they face an insuperable problem of paying fees in \$US. In the present situation of reforms and hyperinflation in the country, an average engineer's salary, \$US 20-30, does not enable him to pay even reduced fees. Another problem in most institutions is the lack of telecommunication, copying and other facilities.

Section Secretary-Treasurer: Dr. Sergei Zagriadski, Radiophysics Department, St. Petersburg State Technical University, 195251 St. Petersburg, Polytekhnikeskaya 29, Russia. Fax: +7-812 552 6086. Telex 121187 LSUT SU.

## Learning from Region 8

By Dr. Luis T. Gandia  
(Vice-president for Regional Activities)



During the last two years I have attended Region 8 Committee meetings in Switzerland and in Greece. In addition to discussions with key volunteers I have been able to learn much about the work of both the Regional Committee and of the Sections.

The assistance which Region 8 gives to members in the developing countries must be commended; to my knowledge this is the only region that provides this excellent service. However, much still remains to be done, particularly in considering ways in which other resources might be placed at the disposal of those charged with encouraging the formation of Sections and Chapters in countries now facing financial, political or technical difficulties.

As Vice-president for Regional Activities, I am interested in seeing that engineers, educators and scientists in developing countries are provided with the IEEE resources which will enable them to improve their professional contributions to society.

Based on the initiatives of Region 8 I shall present a motion to the Executive Committee and to the Board of Directors, stressing the need for the IEEE to adopt, for other Regions too, plans similar to those now being employed by Region 8.



ÉCOLE POLYTECHNIQUE  
FÉDÉRALE DE LAUSANNE

Five-Day Intensive Course Organized by the

**Telecommunications Laboratory**  
of the Swiss Federal Institute of Technology (EPFL)  
Lausanne, Switzerland

# Broadband Communication Networks and Related Modelling Techniques

September 27- October 1, 1993  
Lausanne, Switzerland

## *PART I* (September 27- 29, 1993)

Evolution to Broadband Communication Network  
and Services, Multimedia Services  
Asynchronous Transfert Mode (ATM)  
Frame Relay  
Fiber Distributed Data Interface (FDDI)  
Synchronous Digital Hierarchy (SDH)  
Distributed Queue - Dual Bus (DQDB)

Prof. J.-P. Hubaux, EPFL  
Dr. J.-Y. Le Boudec, IBM  
Prof. C. Petitpierre, EPFL  
Prof. B. Plattner, ETHZ  
Dr. S. Rao, Ascom Ericsson  
Dr. H. Weibel, Siemens

## *PART II* (September 30- October 1, 1993)

Traffic Characterization and Simulation Techniques  
Practical Exercices: Simulations of Broadband Networks

Dr. R. Grünenfelder, Alcatel STR  
EPFL Staff

Deadline for registration: **August 15, 1993**

Registration fee in Swiss Francs:

*only part I:*  
Member IEEE: 1400 SFr  
Non-Member: 1500 SFr  
Universities, Colleges: 700 SFr

*parts I and II:*  
Member IEEE: 1900 SFr  
Non-Member: 2100 SFr  
Universities, Colleges: 1000 SFr

Course director: Jean-Pierre Hubaux  
Course coordinator: Stephan Robert

E-mail: jean-pierre.hubaux@deqm.epfl.ch  
E-mail: robert@tcomhp20.epfl.ch

Mailing address: Mrs D. Alvarez, EPFL-DE-TCOM, CH-1015 Lausanne, Switzerland  
Phone: +41 21 693 46 58 Fax: +41 21 693 46 60

## U.K.R.I MTT/ED/AP Joint Chapter

By Mr. Terry H. Oxley

The Chapter Administrative Committee would like to draw attention to the following events of international interest:

● 24th May 1993 - Workshop on "CAE, Modelling and Measurement Verification". Organised jointly with the German MTT/AP chapter and sponsored by the UKRI/Germany/France/Italy chapters. At Sindelfingen, Germany. UKRI Contact: Prof. J.A.C. Stewart, Dept of Electronic Engineering, Queens University Belfast, Ashby Building, Stranmillis Road, Belfast BT95AH. Tel: 0232 245133. Fax: 0232 667023.

● 6-7th July 1993 - Joint European MTT Chapter Meeting (supported by MTT-S transnational committee) on selected European papers from the 1993 MTT-S International Microwave Symposium, Atlanta USA: at the University of Leeds, Leeds, England LS2 9JT. Tel: 0532 33 2002. Fax: 0532 33 2032

### CALL FOR PAPERS

● 18th October 1993 - Workshop on "High Performance Electron Devices for Microwave and Optoelectronic Applications". Organised by King's College and UKRI Chapter. At King's College, Strand, London, England. Contact: Dr. Ali A Rezazadeh, Dept of Electronic & Electrical Engineering, Tel: 071 836 2879. Fax: 071 836 4781.

*Chapter Chairman: Mr. Terry Oxley, "Tremont", Back Lane, Halam, Southwell, Newark, Notts NG22 8AG England.  
Tel: +44-836-015510.  
Fax: +44 636 815865*

## Poland

In January 1993 the Section membership exceeded two hundred, and is now two hundred and forty five; a growth of almost 30% in one year. This was made possible by the stabilisation of the currency rate and by improved relations with the West. This optimistic trend however, did bring financial difficulties. The cost of mail, the newsletter and our Section office, are all now larger, but the 1992 rebate, our only income, was calculated according to the number of members in 1991. For the first time our balance is as low as several hundred dollars.

E-mail has made communication with

have frequent technical meetings, often with lecturers from abroad. The 13th Symposium on Electromagnetic Phenomena in Nonlinear Circuits will be organised in 1994 by the CAS chapter. Thirteen technical meetings were organised, 10 in Paznan, 2 in Warsaw and 1 in Cracow. Amont chapter guests invited as lecturers for these meetings were specialists as distinguished as Prof. Martin Hasler, Prof. Peter Noll, Prof. Arnulf Kost. and Prof R. Jansen.

The PE/IA chapter had several interesting meetings. The Communications chapter had an election meeting in December (Prof. A. Sowinski was elected Chairman) and started successfully with its first technical meeting. The Computer chapter is still in the process of being organised. A second communications chapter is to be established in Cracow. Discussion is taking place on whether two chapters of the same society should be established in our Section. Twenty meetings have been organised since October 1992.

In June 1993 the Poland Section executive committee term will end. Being chairman during the last four years I would like to thank all members of Region 8 and IEEE Headquarters for their very effective cooperation; this has given me a great deal of pleasure.

*Professor A. Filipkowski, Retiring Section Chairman*

*Professor A. Filipkowski, Retiring Section Chairman*

## Benelux

By Professor Ramjee Prasad

The newly formed Vehicular Technology/Communications joint chapter held an inaugural Signatories Meeting on 27th January; it was followed by a Mini-colloquium on "Mobile Radio Communications"; the following subjects were discussed:

i) Performance of a coded OFDM based transmission scheme on a frequency selective channel. - O.L.Linden

ii) Evaluation of a cellular structure in an indoor environment using models extracted from measurements at the Faculty of Electrical Engineering, TU Delft - F. van der Wijk

The meeting was well attended by members from universities, local industries (Philips, Ericsson, NCR) and research laboratories. An executive committee will be elected at a one-day workshop in May/June 1993. There will be a two-day annual symposium each year, with a half-day tutorial in October/November.

*Interim Chairman: Prof. Dr. Ramjee Prasad, Dept of Electrical Eng. PO Box 5031 2600 GA Delft, The Netherlands. Tel: +31 15 78 1347/6193. Fax: +31 15 78 1774*

## VTC 1994 Call for Papers

"Creating Tomorrow's Mobile Systems"

IEEE Vehicular Technology Society  
44th Vehicular Technology Conference  
Stockholm, Sweden, June 7-11, 1994

This conference is for the first time held outside of North America.

Papers are invited over the full range of wireless communications, automotive electronics and rail transport, i.a. in the areas.

Automotive Electronics	Mobile Multimedia Technology
Antenna Systems	Mobile Radio Channel
Digital Radio Technology	Mobile Satellite Systems
Digital Cellular Technology	Rail Transport Electronics
Indoor Wireless Technology	Receiver and Transmitter Technology
Intelligent Vehicle Highway Systems	Wireless Data Systems

Submit a Summary of your paper (approximately 150 words) before **September 15, 1993** to

IEEE VTC 1994 Congress Office  
Prof. Sven-Olof Öhrvik  
Ericsson Radio Systems AB  
S-164 80 STOCKHOLM, Sweden

Further information can be obtained from the same address or by

Telephone +46 8 757 04 05 or Fax +46 8 752 66 18

## Industry Applications Society

The Society is in process of developing new chapters in IEEE Sections in all parts of the world. Members of IAS in Region 8, in countries where we do not have a chapter, who are willing to take part in establishing a new chapter, are requested to contact the IAS Region 8 Area chairman:

*Moshe Harpaz, Kibbutz Ein-Carmel, D.N.Hof Carmel 30860, Israel. Tel: +972 4 844410 or +972 3 7525180. Fax: +972 4 844 222.*

We have Region 8 IAS chapters in Israel, Poland, Portugal and South Africa.

Headquarters easy and reliable; nevertheless some problems, such as lost cheques or dues, are still difficult to clear up.

The Section-sponsored conferences were a success - this year the following conferences will be held:

● 4th European Symposium & Exhibition on Semiconductor Engineering and Materials Technology. SET '93. Warsaw 25-28th October 1993.

● 16th National Conference on Network Theory and Electronic Circuits. Kolobrzeg, 26-28th October 1993.

The four chapters are very active. The joint AP/AES/MTT and the CAS chapters

## Letter to the Editor

From Mr. Ray Alderman, Technical Director VITA

### Standards

Sir,

I read with interest Professor Charles Turner's recent article in the February Region 8 News. VITA has a European office in Zaltbommell, The Netherlands, and we share some of his concerns.

VITA is the trade association which developed the VMEbus specification (IEEE 1014-1987), the Futurebus+ specifications (IEEE 896.X) and other IEEE standards documents in the U.S. Many of the European VITA members are also IEEE members; they too share some of the same frustrations and pitfalls of the IEEE process that we endure here in the U.S.

Professor Turner's statement about "...value for money..." is the reason why VITA has taken action on behalf of our members, both here in the U.S. and in Europe. The price of standards documents is out of control, the time it takes to produce a standard is atrocious, the political infighting for control over activities is ridiculous and the service provided to our European members trying to obtain documents from the IEEE is abysmal. The value we receive in relation to the high dues we pay is unacceptable.

It is for these reasons that the VITA organisation has applied to ANSI to become an accredited standards organisation. We can no longer afford to subsidise the shortfall in IEEE revenues by paying exorbitant document prices and escalating dues. As our own standards body, we can control the costs of the services we provide for our members and keep future costs within bounds.

Over fifty letters from European companies and individuals were sent to ANSI in the U.S., in support of our application for accreditation. The IEEE has a severe service problem in Europe concerning our members.

The situation you have inherited is much worse than you might have expected and in my view you should certainly look into the question of "value for money"; I suggest that the first thing to do is to examine the service provided. I have discussed these issues with the VP of Standards for the IEEE (Dr. Wallace Read) and he is aware of our problems, and our actions.

Yours faithfully

Ray Alderman

Technical Director  
VFEA International Trade Association  
U.S.A.

## Bi-isotropics '93

By Dr. Ari Sihvola

### Meeting Report

During the first week of February, Helsinki University of Technology played hosted to a workshop on novel microwave materials - Bi-isotropics '93, a four-day workshop which attracted seventeen participants from six countries: Finland, Russia, Belorussia, France, United Kingdom, and Germany.

The focus of the meeting was intended to be the theory and application of bi-isotropic materials (chiral and non-reciprocal) in electromagnetics and microwave engineering, but possibly on account of the nature of this rapidly progressing field, more general bianisotropic materials were discussed. The workshop was sponsored by the MTT Society, URSI Finnish National Committee, and the Electromagnetics Laboratory of the Helsinki University of Technology.

Centre  
for  
Neural  
Networks

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University of London

## Introduction to Neural Computing

7 July 1993

A course to provide an introduction to neural networks and their applications, and to enable managers, engineers and scientists to assess the impact of neural computing in their own areas

Continuing Education Unit, King's College London,  
Cornwall House Annexe, Waterloo Road, London SE1 8TX  
Tel: 071 872 3055/6  
Fax: 071 872 3070

Why this workshop? Well, electromagnetics and microwave technology are progressing at a considerable pace. One of the frontiers at which major conquests are being made is that of new materials. It is only during the most recent years that the microwave community has recognised the potential of novel, more complicated material effects in the design of new components and systems. Chiral materials may be the most popular example of these complex media, and much of the time in the workshop was devoted to the theory, applications and measurement principles of chiral media.

One highlight in Bi-isotropics '93 was the lecture "Covariant methods in the theory of electromagnetic waves" by 82 year-old Academician Fedor I Fedorov from Minsk, Belorussia, who is one of the greatest physicists of the former Soviet Union, and a pioneer of research on optical activity.

A Book of Abstracts of the workshop has been compiled. To obtain a copy please contact the Workshop Organiser:

Dr. Ari Sihvola: Helsinki University of Technology, Electromagnetics Laboratory, Otakaari 5 A, SF-02150 Espoo, Finland. Phone: +358 0451 2261. Fax: 358 0451 2261. E-mail: ari.sihvola@hut.fi

## ICHPS VI

### International Conference on Harmonics in Power Systems

September 21-23 1994 - Bologna, Italy

(Not Paris - as given on page 2 of the February R8 News)

Contact: Prof. Gian Carlo Montanari, Istituto di Elettrotecnica Industriale, Università di Bologna, Viale Risorgimento 2, 40136, Bologna, Italy. Tel +39 51 64443471. Fax: +39 51 6443470.  
E-mail: elettrotind5@ingbol.cineca.it

# Statistics

It is difficult to find an electrical engineering textbook which lists "statistics" as a subject suitable for study by practical engineers. From this it follows that engineers, whether of the "scientific" type or the "practical" type, leave university with little appreciation of what statistics is all about; a splendid science for those interested in the biological sciences or in economics but not one which should be allowed to introduce the concepts of probability or uncertainty into the mathematical purity of an electrical engineering mind. Few scientists or engineers are prepared to accept that statistics might play some part in scientific method.

Matters are not helped by statistics itself, which in most universities is a kind of "add on" in the department of mathematics. Many statisticians hold the view that mathematics and statistics should be divorced, thereby providing an opportunity for statistics to contribute in some practical way to improving the "Quality of Science and Technology". However, the evidence to support that divorce is not obvious from a cursory glance through the pages of statistics textbooks, filled as they seem to be with nothing but mathematical symbology. Analysis figures prominently, but little is to be seen of chapters on statistical planning, and design is rarely taught; nothing is said about prediction or the combination of current and prior information to bring scientific theory up-to-date.

Even at a most elementary level we find a great deal more abuse than use of statistics. Those manufacturers of electronic equipment who quote a MTBF (mean time between failures) would have us believe that a MTBF of 3,000 hours is clearly much better than 2,000 hours: those two figures provide no significant evidence whatever to support that belief.

The mean is a statistic designed to suppress variability in the data from which it is calculated, but a measure of that variability, or of the means of several similar trials, is vital if a sensible interpretation of the two different means is required. The assessment of risk is one of the more obvious uses of statistical analysis, but one which receives distressingly little attention from engineers, the people who make those risky products that are so "useful" to society. Is it not reasonable that they should be asked to explain the risks associated with their products, not to their scientific or engineering colleagues, but to the ordinary members of the public? No one would claim that the concepts of probability permit an easy explanation, but the consequences of failing to explain are all too evident: politicians pursuing policies based on ignorance or the voting intentions of the public, newspapers and the television seeking sensationalism at any price, and illinformed but well-meaning political pressure groups expressing views based on pseudo-science. "Nuclear Radiation kills" you will hear from time to time: that is absolutely true, but so do motor cars, aeroplanes, washing machines, television sets, and humans - are we to abandon all of them?. And abandon too all that engineering effort wasted on projects which, for want of a little statistical thought, might never have been started?

Consider the tremendous value of a statistically literate engineer, a practical character, who could draw valid statistical comparisons between these lethal productions and explain the concepts of probability to a thinking public. He might also point out convincingly the benefits of nuclear medicine and the positive characteristics of his other "dangerous" toys

*The Editor*

## Continuing Education

*By Professor Kurt Richter*

Copies have been obtained of the Video Conference tapes listed below; they are available on loan to interested members. Application should be made to Professor Richter through your Section Chairman; not more than one tape (or group of tapes forming one programme) may be borrowed at a time. All are in 3 parts on two tapes and have a duration of 180 min, unless otherwise stated.

**Expert Systems:** PAL 03.90

**Rapid Development of Software.** PAL. 05.90

**VC40 - Uses of Artificial Intelligence in Manufacturing.** PAL. 03.91

**VC41 - Fuzzy Logic: Applications & Perspectives.** PAL. 04.91

**VC42 - Uses of Neural Networks in the '90.** PAL. 05.91

**VC43 - Quality Management Approaches to the Malcolm Baldrige Award.** PAL & NTSC. 09.91.

**VC44 - Software Testing and Reliability.** PAL. 10.91

**VC45 - Development of Optical Computing.** 4 parts (2 tapes), total duration 240 min. NTSC. 12.91

**VC46 - Making Optoelectronic High Performance Data Communication Work.** PAL. 03.92

**VC47 - Workstations of the Future.** PAL. 04.92.

**VC48 - Environmental Issues and Impact to Engineers.** PAL & NTSC. 05.92

**VC49 - Emerging Technologies: Will your Company be Ready?.** PAL & NTSC. 09.92.

**VC50 - How will we Broadcast HDTV?** PAL & NTSC. 10.92.

**VC51 - Getting Rid of Interference.** PAL & NTSC. 12.92.

**VC50 - How will we Broadcast HDTV?** PAL & NTSC. 10.92

When you have used one of these tapes would you please let the Region 8 News editor have your comments on any aspect of their quality, both technical and as a contribution to continuing education. They will then be collected, reported in Region 8 News, and passed to Headquarters with a view to making improvements. Thank you.

Communications  
Research  
Group

**KING'S**  
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University of London

## Digital Radio Communication Systems

**27 - 29 October 1993**

An intensive course enabling those already familiar with basic analogue transmission techniques to acquire sufficient knowledge of advanced digital radio communication systems, particularly second generation and future mobile and personal systems

to be given by

**Dr Hamid Aghvami**

Director of Research

Department of Electronic & Electrical Engineering

Continuing Education Unit, King's College London,  
Cornwall House Annexe, Waterloo Road, London SE1 8TX

Tel: 071 872 3055/6

Fax: 071 872 3070

## FRANCE

By Mme Frédérique Vallée

**CONFERENCES:** In association with other Societies the France Section is supporting the following conferences:-

Undersea Defence Technology, Conference and Exhibition, Cannes, [Palais des Congrès, September 15-17, 1993], sponsored by the OES Chapter. (inf. Microwave Exhibitions and Publishers, 90 Calverley Road, Tunbridge Wells, Kent TN1 2UN, UK).

**INTELEC 93**, 15th Conference on Energy in Telecommunications, Paris, September 27-30, 1993. (inf. SEE/INTELEC93, 48, rue de la Procession, 75015 Paris, tél: +33 1 44 49 60 60, fax: +33 1 44 49 60 44/49).

We are pleased to announce that the following conferences are in preparation:-

**IPMU**, 5th International Conference on Information Processing and Management of Uncertainty in knowledge-based systems, Paris, [July 4-8, 1994]. Inf. Mme Bernadette Bouchon-Meunier, LAFORIA, Université, Paris VI, Boîte 169, 4 place Jussieu, 75252 Paris cedex 05, t.l. : (33) 1 44 27 70 03, fax : (33) 1 44 27 70 00, e-mail. : bouchon@laforia.ibp.fr).

**OCEANS 94 OSATES** (Ocean Space Advanced Technology European Show), Brest, France [September 13-16, 1994]. The following events will take place during these four days: an International Conference, a major Exhibition, the visit of a dozen ships from several different countries specializing in civilian and military oceanology, a visit to several Research Centres such as IFREMER the French Navy oceanographic Centre or the French Navy Underwater Research Centre. . Inf. Mlle Bonami, SEE, 48 rue de la Procession, 75724, Paris Cedex 15, tél.: (33)144 49 6060, fax : (33)144 49 60 44.

**ULTRASONICS** Symposium, Cannes, France [Hôtel Martinez, November 1-4, 1994]. Inf. M. Gérard Quentin, Université, Paris VII, 2 place Jussieu, 75251 Paris Cedex 05, France, tél. : (33) 1 43 29 51 22, fax : (33) 1 43 54 28 78).

La Section Française parraine la manifestation suivante:

Véhicules propres, réalités et perspectives, La Rochelle, France, 14-17 septembre 1993]. (inf. Secrétariat général VP/CV 93, SEE, 48, rue de la Procession, 75015 Paris, tél.: (33) 1 44 49 60 60, fax : (33) 1 44 49 60 44/49).

**Conférences organisées par le chapitre EMC:** Le chapitre EMC organise un cycle de conférences du soir. Les prochains exposés concerneront:

EMC-Systèmes et Modélisations; EMC-et les Méthodes de Mesures et de Tests; EMC-et Rôle des Transferts em: fils, câbles et structures à propagation. Inf. Club 26, SEE 48 rue de la Procession, 75724, Paris Cedex 15, tél. : (33) 1 44 49 60 17, fax : (33) 1 44 49 60 49.

## Conférences de l'A.R.E.:

Dans le cadre des accords passés entre l'A.R.E. (Conférences du soir des Anciens de la Radio et de l'Electronique) et la Section française de l'I.E.E.E., nous annonçons les conférences suivantes:

"Le point des télécommunications optiques (jusqu'à la liaison d'abonné?)" (par M. Jean Jerphagnon, Directeur Technique d'Alcatel-CIT, 9 juin 1993).

"L'électronique dans les contrôles d'accès et la sécurité" M. R. Lehmann, 28 sept. 1993.



**Joint MD/SAC Workshop**  
28-29 August  
1993  
**Bijhorst Hotel**  
**The Hague**  
**The Netherlands**



This workshop, for representatives from the Benelux and adjacent countries, will discuss various Student Activities and Membership Development Programmes, in order to establish ways of extending member services, both by improving existing arrangements and considering new projects. Problems associated with Student Activities and Membership Development will be discussed with a view to finding practical solutions

The organisers would welcome Student and Membership Development representatives from Sections within the Region; limited funds are available for travel expenses.

Further details may be obtained from: Mr. D.C.J.Poortvliet, Westeind Hospital EEG Dept., Lijnbaan 32, 2512 The Hague, Netherlands. Tel: +31 703 302 721. Fax: +31 703 809 459. \*\*or\*\* Prof. Dr. W.E. Proebster, Institut für Informatik, Orleansstrasse 34, D-8000 Munich 80, Germany. Tel: +49 89 48 095 223. Fax: +49 89 48 095 203.

Dick Poortvliet

Walter Proebster

"La génération de puissances (moyennes) très élevées en microondes" (par Georges Mourier, Conseiller Technique à Thomson-Tubes Electroniques, 3 novembre 1993).

"L'industrie électronique mondiale, aujourd'hui, demain" (par M. Michel H. Carpentier, Président de la SEE, 8 décembre 1993)

Ces conférences auront lieu à 17h, dans la salle no 11 de la FIEE, située au quatrième étage du 11 rue Galilée, PARIS 16ème - Métro Boissière ou Iéna. L'entrée est gratuite, des rafraichissements sont servis pour clôturer sympathiquement la séance. Pour tout renseignement ou confirmation, s'adresser à Mme Birckel, 193, rue du Faubourg Saint-Martin, 75010 Paris, tél: (1) 46 07 40 77.

Chairman: Dr. Maurice G. Bellanger, 54 Rue de Rennes, 75006 Paris, France. Tel: +33 140 94 7516. Fax: +33 146 30 6224.

**Region 8 News is not an official IEEE Publication. The Views expressed are those of the Authors**

## TURKEY

by Ayhan Altintas,

Turkey Section held its Section Committee Meeting on Feb.8. The Committee has decided to give a "Founder's Award" to Prof. Dr. Ozay Oral (President of Eastern Mediterranean University of North Cyprus) and to Prof. Levent Onural of Bilkent University, Ankara, Turkey. The initiatives of Dr. Oral and Dr. Onural were invaluable during the formation of the Turkey Section; we appreciate their efforts. The Section Committee also reserved \$1000 to support section members wishing to attend international IEEE conferences; the support for each member is limited to \$100. I would like to encourage especially our student members to apply.

**Some of the activities of Turkey Section are as follows:**

1) Formation of a Power System Society Chapter through the efforts of Prof. Nusret Yukseker of Istanbul Technical University.

2) The organization of MELECON'94 in Antalya, Turkey in April 1994. (Contact: Prof. Yildirim Uctug, Middle East Technical University, Ankara, Turkey.) Invited speakers for MELECON'93 will include:

i) Prof. Peter Clarricoats, UK.  
ii) Dr. Jim Omura, CYLINK, USA.  
iii) Prof. Toshio Fukuda, Nagoya Univ., JAPAN.

4) Cooperation in the organization of "First Bilkent International conference on Advanced Techniques in Animation, Rendering and Visualization" Bilkent University, Ankara, in July 1993. (Contact: ATARV'93, Bilkent University, Dept. Comp. Eng., Ankara.)

Please contact me or any of our committee members for further information and we will be happy to hear from you. Best wishes,

Section Chairman: Dr. Ayhan Altintas, Bilkent University, Dept. Elec. Eng., Ankara 06533, Turkey. Tel: 90-4-266-4040 Ext: 1489, Fax: 90-4-266-4127. E-mail: altintas@trbilun.bitnet or ieee@trbilun.bitnet

## FOR STUDENTS

By Gozde Bozdagi

My term as the RSR of Region 8 ended a few months ago; it was a pleasure for me to hold this position for two years. I wish to thank all those whom I have met and who helped me with IEEE activities, and I wish my successor Roman Mittendorfer, Austria, an equally pleasant period as an RSR.

Gozde Bozdagi, Bilkent University, Dept. Electrical Eng 6533, Ankara, Turkey. E-mail: bozdagi@trbilun.bitnet

## Sweden

By Dr. Anders Derneryd

### Annual Meeting

The Sweden Section annual meeting was held in Göteborg on 14th January. The following Board members were elected for one year:

Chairman	Piotr Starski
Vice-chairman	E. Folke Bolinder
Vice-chairman	Sven-Olof Öhrvik
Secretary	Anders Derneryd
Treasurer	Lennart Lundgren
Membership Development	Jan Torin

### PE Chapter Meeting

Mat Darviniza from the University of Queensland in Australia will give a talk on "Ageing of cellulose Insulation in power transformers" and share his views on chapter activities in Australia. The meeting will be held at KTH, Elkraftcentrum, Stockholm, in the beginning of May. Please contact PE Chapter chairman Roland Eriksson on phone 08 790 7988 for more information

### MTT/AP Chapter Meeting

A technical seminar with Ferdo Ivanek will be held in Göteborg on 1st June. The title is "Progress and changes in microwave radio communications". Further information can be obtained from the MTT/AP Chapter secretary Arild Moldsvor on phone 031 772 1724.

### Larry K Wilson Student Branch Award

Congratulations to Göran Ericsson, KTH, who has received the Region 8 Larry K. Wilson Student Activities award. He has contributed extensively to the vital role of organising and implementing IEEE activities in the Student Branch of the Royal Institute of Technology in Stockholm. As one part of the award he will receive three free years membership dues.

### Membership Development

The total number of members in the Sweden Section was 981 in February. This is an increase of 9% compared with one year ago. A membership booth was organised at the RVK meeting in Lund during 5-12th April.

Section Chairman: Dr. Piotr Starski, Chalmers University of Technology, Division of Network Theory, S-412 96 Göteborg, Sweden. Tel: 031 7721734. Fax: 031 7721561. E-mail: piotr@nt.chalmers.se (UUCP)

## Egypt

By Professor Abdel-Latif I Ahmed

### The Alexandria & North-delta Subsection

This was approved and the sub-section has started its activities by selecting Prof. Saeed El-Khamy as Chairman and Dr. Khamees El-Schenaway as Secretary-Treasurer.

### Control Systems Chapter

The petition was forwarded to Headquarters; Dr. Iraki was persuaded to be its organiser.

A three-day symposium in cooperation with the national Radio group took place in February under the theme "Recent advances in Radio Communications"

Great efforts are being made to increase the Section membership, in spite of the difficult economic situation in spite of the difficult economic situation in Egypt; we not have over 350 members

## NEW TITLES FROM WILEY

### Future Trends in Telecommunications

J. HORROCKS, Horrocks Technology, Surrey, UK

This timely book surveys current technology, standards and future trends from an international perspective. The first section reviews telecomms technology such as VLSI; fibre optics; coding; radio and OSI. Networks and services are discussed in the second section along with mobile radio services; satellite communications; ISDN; LANs, WANs and intelligent networks. In the third section, the authors discuss international standards and regulations. The text concludes with a look towards future telecommunications in the home and work environment.

*Wiley Series in Communications and Distributed Systems*  
0-471-93724-X 480pp March 1993 £39.95/\$63.95

### Discrete-Time Performance Modelling of Packet-Switching Networks

M.E. WOODWARD, Loughborough University, UK

This text provides for the first time an accessible treatment of the performance modelling of packet switching networks that is devoted entirely to discrete-time techniques. While providing a sound theoretical foundation, the accent is on methods that are practically useful. The approach is ideal for professionals or students who are concerned with assessing the performances of different types of packet switching computer and communications networks.

07273-0410-0 250pp April 1993 £36.00/\$72.00  
Published by Pentech Press, UK, Marketed by Wiley

### Telecommunications Circuit Design

P.D. VAN DER PUJIE, Carleton University, Canada

This is an extremely clear and practical exposition of the close relations between circuit theory and design in the field of telecommunications. The book is organised according to communications system, including radio (AM and FM), television and telephone systems, as well as satellite communications and data transmission circuits.

*Wiley Series in Telecommunications*  
0-471-50777-6 368pp June 1992 £46.95/\$66.50

### Telecommunications in Transition

M. CARPENTIER, S. FARNOUX-TOPORKOFF and C. GARRIC, all of the Commission of the European Communities

Detailing the dramatic increase in the number of tele-services available since the digitalisation of networks, the authors give a social, commercial and political review of these changes, which they claim have revolutionised telecommunications. Essential reading for anyone wanting an insight into the future development of telecommunications.

0-471-93190-X 192pp (pr) April 1992 £19.95/\$39.50

### ISDN Explained

#### Worldwide Network Applications Technology Second Edition

JOHN M. GRIFFITHS, BT, Martlesham Heath, UK

The author provides a state-of-the-art overview of the principles of ISDN operation. New material includes the ISDN Data Linklayer specification for Frame Mode Bearer Services, SDL, Broadband ISDN and supplementary services.

Some reviews of the highly successful First Edition:

"I can strongly recommend this to anyone who has heard about ISDN but doesn't know what it can offer, or why, or how."

- IEE REVIEW

"... a highly readable overview of the principles of all facets of the subject, giving an international perspective."

- TELECOMMUNICATION JOURNAL

*A Wiley-British Telecom Publication*

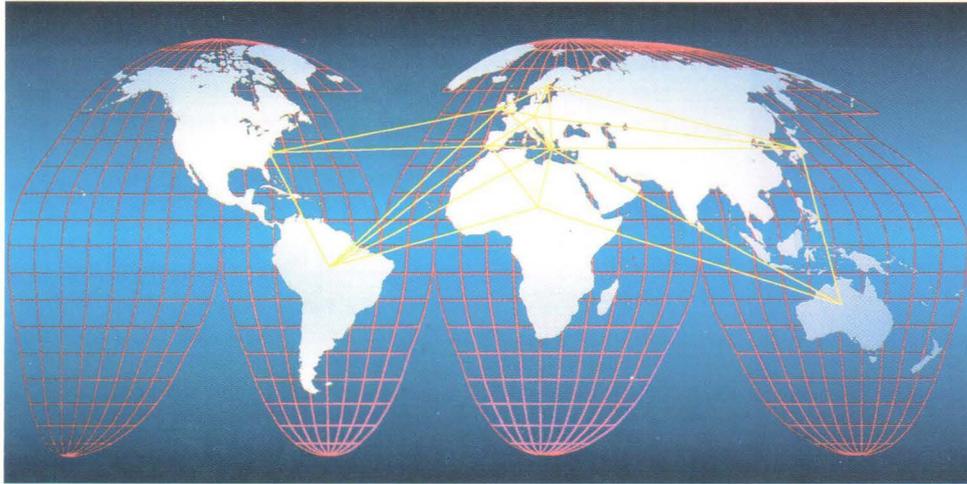
0-471-93480-1 256pp August 1992 £19.95/\$39.95

Wiley books are available through major booksellers. Alternatively, order direct from Wiley (payment to John Wiley & Sons Ltd). Credit card orders accepted by telephone - (0243) 829121. Prices quoted here apply to UK and Europe only.

JOHN WILEY & SONS LTD  
BAFFINS LANE, CHICHESTER  
SUSSEX, PO19 1UD, UK



# Broadband Islands



**ATHENS, GREECE**

**JUNE 15-16**

**1993**

Organized by the  
RACE II Project  
EuroBridge

## BRIDGING THE MULTIMEDIA SERVICES GAP

*During 1993 many multimedia applications will be brought to the market. At the same time, broadband networks are being deployed world wide. These broadband networks, based on DQDB, FDDI and ATM technologies, are currently being built as "islands" with minimal interconnection. In order to create a large market for both services and applications, the applications must be portable across networks. The present challenge lies in the urgent need to bridge the service gap between multimedia applications and broadband networks.*

The conference will focus on the communication services required to support multimedia applications in the wide area and metropolitan area network context. The conference format includes a combination of invited speakers and technical paper presentations selected by the Conference Technical Committee. The Panel Discussion, which will take place on the second day of the conference, will highlight the viewpoints of the manufacturer, network operator, service provider, and the Commission of the European Communities on the possibilities for Europe to exploit the changing telecommunications market.

### Who should attend?

Both market developments and technical solutions to problems will be presented and discussed at the conference, providing sessions of interest to technical specialists as well as systems and applications developers. Invited speakers will offer participants the opportunity to gain an overview of the potential for the use of multimedia applications, in the context of wide area communications. The potential of multimedia communications to increase the competitive advantage of business operations will be examined during the conference, and will be of particular interest to user organisations.

### Tutorials

Four half-day tutorials will be offered before the conference, on the 14th of June, 1993.

The tutorials will be presented by leading experts on the following topics:

Ralf Steinmetz, IBM/ENC (1/2 day tutorial)

Andre Danthine, University of Liège (Two 1/2 day tutorials)

K. Ullman, RARE (1/2 day tutorial)

**Multimedia communications and applications**

**New services and protocols for the High speed environment**

**The European Communication Infrastructure of today and tomorrow**

### Conference Registration

Delegates should register for the conference by contacting the Conference Secretariat at:

**Ms Myra Sourlou, Broadband Islands Conference  
Intracom S.A.  
P.O. Box 68, 190 02 Peania, Attika  
GREECE**

Tel: (301) 664 4961, 884 3715

Fax: (301) 664 4379, 664 3718

E.Mail: BRIS@intranet.gr



CEC



IEEE  
REGION 8



EuroBridge



INTRACOM

HELLENIC TELECOMMUNICATIONS  
AND ELECTRONICS INDUSTRY

## Region 8 Student Paper Contest

### UKRI Heats



Mr. G. Smith - Winner (University of Hull)  
&  
Professor Tony Davies - UKRI Chairman

The UKRI Heats were sponsored by Filtronic Components Ltd, whose Chairman and Chief Executive, Professor J.D.Rhodes OBE, was one of the adjudicators.

## Greece

By Professor G.I. Stassinopoulos

The Section was particularly pleased to act as host to the Region 8 Committee (photograph on page 1).

We are starting to address problems arising from the geographical spread of our members, which prevents many members from attending meetings. The Cyprus sub-section will shortly become a Region 8 Section in its own right, with more than 70 members. Overall membership is expected to grow more rapidly. Similar problems have been reported by members in and around Thessaloniki, which is some 6 hours drive away from our Section activities in Athens.

### Future Events:

- Second Int. Conference on Broadband Islands, Athens 14-16th June 1993. Info.: Kai Jacobs. Fax +49 241 80 21429
- COMCON 4: 4th Int. Conference on Telecoms and Signal Processing, Rhodes 14-18th June 1993. Contact Prof. N.Levan, 56-1253 Engr.IV, EE Dept., UCLA, Los Angeles, CA 90024, U.S.A.
- Int. Conference on Digital Signal Processing and Computer Applications: Nicosia 14-16th July 1993. Contact The Cyprus Institute of Neurology and Genetics, PO Box 3462, Nicosia, Cyprus, Tel: +357 2 497635. Fax: +357 2 423077
- Athens Power Tech, Sept. 5-8th 1993. Contact: C.Vournas Tel: +30 1 360 0551. Fax: +30 1 360 5604.

Section Chairman: Professor George I. Stassinopoulos, NTUA, 175 73 Zographou, Athens, Greece. Tel: +30 1 779 3988. Fax: +30 1 775 7501. E-mail greece@theseas.ntua.gr.

## French EMC Chapter

By Dr. Ferdy Meyer

A cooperative agreement has been signed by the IEEE EMC Chapter in France and the local "Société des Electriciens et Electroniciens" (SEE).

The first joint meeting was held in November 1992, with the theme "Electromagnetic Compatibility and the European EMC Directive". It was presented by Mr. Jean-Claude Perrin, Director of the French National Laboratoire Central des Industries (LCIE), and Mr. Michel Mardiguan, Consultant in EMC. It was the first of a series of presentations and workshops concerning the EMC Directive, to examine the relationship between existing and future standards and the underlying technical problems and solutions.

The next meeting was in March, on "Electromagnetic Compatibility and the role of New Materials and New Components". Presented by Dr. Ferdy Meyer - Chairman: French, Belgium and Luxemburg Chapter.

Chapter Chairman: Dr. Ferdy Meyer, Laboratoire D'Electronique et d'Automatique Dauphinois, 12 Avenue de la République, F94700 Maisons-Alfort, Paris. Tel: +33 14977 9400. Fax: +33 14977 9813.

## Saudi Arabia

The 1992-3 term was marked by stability and increased membership. The Section is striving to maintain the growth of both membership and professional activities. The Section is proud of the fact that Dr. Mazen M. Abdel Salam has been elected a Fellow.

The Section will hold a technical dinner meeting on May 10th 1993; the theme will be "Development and Implementation of Harmonic Analysis Expert Systems", by Iscosa/Westinghouse.

Chapter Chairman: Saudi Arabia Section IEEE, Box 2749 Dhahran, 31311, Saudi Arabia.

## IEEE ISSSTA '94



IEEE  
Third  
International  
Symposium on  
Spread Spectrum  
Techniques &  
Applications

July 4-6, 1994, University of Oulu, Oulu, Finland

## CALL FOR PAPERS

Topics: Acquisition & tracking, pseudonoise sequences, interference suppression, CDMA capacity, error controlling, rake receiver & fading, networking, packetized data and voice transmission, protocols, power control, AGC, mobile & cellular communications, satellite communications, packetized data & voice networks

### Schedule

Preliminary data due: May 31, 1993  
Complete manuscript due: November 15, 1993  
Notification of acceptance mailed: January 31, 1994  
Camera-ready manuscript due: March 31, 1994



Five copies of the paper should be mailed to one of the addresses: Prof. Pentti Leppanen or Prof. Savo Glisic, University of Oulu, Department of EE Linnanmaa S1, SF-90570, Finland Fax: 358 81 5532845

**Jun 7–18 '93 Signal Processing**

- 395 Neural Networks and Pattern Recognition
- 304 Speech and Image Processing
- 307:1 Analog CMOS Circuit Design for Signal Processing
- 307:2 Analog Circuit Design for Data Converters
- 311 Frequency-Time Signal Processing: Applications and Algorithms for High Resolution Spectral Analysis and Time Series with Exclusive Software
- 338 Error Correcting Codes and Trellis-Coded Modulation with Application to Communication System

**Jun 7–18 '93 Communications**

- 391 Telecommunication Software Architecture and Design
- 346 Signalling System No 7 and Intelligent Networks

**Jun 7–18 '93 RF & MW**

- 325 Far-Field, Compact and Near-Field Antenna Measurement Techniques
- 333 Modern Military and Commercial Radar

**Aug 23 – Sep 9 '93 Microelectronics**

- 336 Silicon Semiconductor Materials and Process Technology
- 373 Epitaxial Film Deposition and Characterization of Semiconductors
- 397 Hybrid Circuit and Surface Mount Technology
- 316 CMOS/BiCMOS Process Integration and Engineering
- 305 VLSI Lithography Methods
- 375 Multilayered Metallization
- 302 Semiconductor Wafer Fab Technology

**Sep 27–Oct 2 '93 Communications**

- 303 Fiber Optic Communication Technology, Systems, and Networks
- 334 High-Speed Communication Networking
- 393 Personal Communication Networks: Cellular Systems, Wireless Data Networks, and Broadband Wireless Access
- 352 Maintaining Signal Quality in High-Speed Digital Systems
- 309 Adaptive Signal Processing with Applications to Communications, Radar, Control, Fiber Optics, and Neural Networks

**Oct 18–22 '93 Communications**

- 358 Modern Digital Modulation Techniques
- 301 Simulation of Communication Systems: Computer-Aided Modelling, Analysis, and Design
- 356 Broadband Networks: MANs, ATM, B-ISDN, Self-Routing Switches, Optical Networks, and Network Control for Integrated Voice/Data/Image/HDTV
- 378 High Speed Data Communication over Wire-Pair Channels
- 323 Satellite Communication Systems: Techniques and Technology for Communications and Broadcasting
- 399 Low Earth Orbit (LEO) Satellite Systems
- 346 Signalling System No. 7 and Intelligent Networks

**Nov 15–19 '93 Communications**

- 349 Modern Digital Communications, Modulation, Coding, Synchronization, Detection, Equalization, and Echo Cancellation

**Nov 15–19 '93 RF & MW**

- 319 RF/MW Circuit Design: Linear/Non-Linear, Theory and Applications
- 327 RF/MW Component Modeling

**Nov 15–17 '93 Signal Processing**

- 389 Fundamentals of Speech Recognition
- 350 Speech and Channel Coding for Mobile Communication
- 388 Combined Coding and Modulation Techniques

Send me further information on the following courses:

No: .....

.....

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Name: .....

Address: .....

.....

Fax: .....

**Region 8 Conference Record**

Brighton, England 13-16 September 1993

**Fifth European Conference on Power Electronics and Applications**EPE '93 Secretariat, IEE Savoy Place,  
London WC2R 0BL, England.  
Fax: +71 497 3633

Zurich, Switzerland 8-11 March '94

**International Zurich Seminar on Digital Communications**

Mobile Communications - Advanced Services, Systems &amp; Components

Werner Böchtold, ETH, CH8092 Zurich.  
Fax: ++41 1 261 1026.  
E-mail: ifhbae@czheth1c.bitnet

Athens, Greece 15-16 June 1993

**Broadband Islands**Ms Myra Sourlou, INTRACOM S.A., PO Box 68  
19002 Peania, ATTICA, GREECE.  
e-mail: BRIS@intranet.gr  
Fax: (301) 6644 379 or 6643 718

Liverpool, England 13-14 September 1993

**Workshop on Neural Networks, Techniques and Applications**  
(With UKRI Computer Chapter)Miss K. Houghton, Dept of Computer Science,  
University of Liverpool, England L69 3BX.  
Tel: +44 51 794 3668. Fax: +44 51 794 3715

Chelmsford, England 15-16 Nov. 1993

**Natural Algorithms in Signal Processing**NASP '93 Secretariat, IEE Savoy Place,  
London WC2R 0BL, England.  
Fax: +71 497 3633

Oulu, Finland 4-6 July 1994

**ISSSTA '94**  
**Third International Symposium on Spread Spectrum Techniques & Applications**Prof. Pentti Leppanen, University of Oulu,  
EE Dept., Linnanmaa S1, SF-90570, Finland  
Fax: 358 81 5532 845

Brighton, England 25-27 May 1993

**Third International Conference on Artificial Neural Networks**ANN '93 Secretariat, IEE Savoy Place,  
London WC2R 0BL, England.  
Fax: +71 497 3633

Stresa, Italy 8-10 September 1993

**Second International Workshop on Power Definitions & Measurements under Nonsinusoidal Conditions**Prof. Alessandro Ferrero, Dpt. Elettrotec. Politecnico di Milano, Piazza L. da Vinci 32, 20133 Milano, Italy.  
Tel: +39 2239 93751. Fax: +39 2236 3561

Stockholm, Sweden 7-11 June 1994

**VTC 1994**  
**44th Vehicular Technology Conference**IEEE VTC 94 Congress Office, Prof. Sven-Olof Öhrvik  
Ericsson Radio Systems AB, S-164 80 Stockholm,  
Sweden. Fax: +46 8752 6618. Tel: +46 8757 0405

Sevilla, Spain 22-24 September 93

**ESSCIRC '93: EUROPEAN SOLID STATE CIRCUITS CONFERENCE**ESSCIRC '93 Secretariat, Avda Reina Mercedes s/n. Ed.CICA, E-41012 Sevilla,  
Spain. Fax: +34 5 4624506.  
E-mail: jramos@cnm.us.es

Toulouse, France 2-6 May 1994

**Third French Conference on Acoustics**Secrétariat 3c CFA Université Toulouse-le-Mirail,  
5 allée A. Machado, 31058  
Toulouse-Codex, France

Ksiaz, Poland 30 May - 2 June 1993

**MIKON '94: 10th Microwave Conference**Prof. E.Sedek, Telecom. Research Inst., 00-991  
Warszawa, UL. Poligonowa 30, Poland  
Fax: (48-22) 10 25 71

London, England 27-29 October 1993

**Digital Radio Communication Systems**Continuing Education Unit: Cornwall House Annexe,  
Waterloo Road, London, S.E.1 8TX.  
Tel: 071 872 3055/6. Fax: 071 872 3070

Lausanne, Switzerland 27 Sept. - 01 Oct. 1993

**Broadband Communication Networks & Related Modelling Techniques**  
(5 day Intensive Course)Mrs. D.Alvarez, EPFL-DE-TCOM, CH-1015 Lausanne,  
Switzerland. Tel: +41 21 693 4658.  
Fax: +41 21693 4660

London, England 7th July 1993

**Introduction to Neural Computing**Continuing Education Unit: King's College London,  
Cornwall House Annexe, Waterloo Road, London, SE1  
8TX. Tel: 071 872 3055/6. Fax: 071 872 3070**First International Summer School on Advanced Broadband Communications****TOWARDS IBC****11-16 July 1993****Aveiro, Portugal**Organised by RACE Project R.2095 BRAIN,  
with local support from Universidade de Aveiro and Centro de Estudos de Telecomunicações Telecom Portugal.FURTHER INFORMATION: Summer School Secretariat, Ms Armanda Gonçalves, GSIC Banda Larga - Dpt. Electrónica e Telecomunicações, Universidade de Aveiro, 3800 Aveiro, Portugal. Tel: +351 34 381 937  
Fax: +351 34 381941 e-mail: ss\_abc@ua.pt

Davos, Switzerland 31 May - 2 June 1994

**ISPSD '94**  
**Sixth International Symposium on Power Semiconductor Devices & ICs**

Prof. Wolfgang Fichter, Integrated Systems Lab., ETH Zentrum, CH-8092, Zurich, Switzerland. Tel: +41 1 256 5333. Fax: +41 1 252 0994. Email: fw@ils.ee.ethz.ch

Davos, Switzerland. 30 Aug - 3 Sept. 1993

**ECCTD '93**  
**Circuit Theory & Design**Mrs. Renate Agotai: Tel: +41 1 256 5193.  
Fax: +41 1 262 0823 e-mail: ecctd93@isi.ethz.ch