

IEEE Region 8 newsletter



THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
INCORPORATED

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Extra Issue

No. 25

March 1974

EUROPEAN CONFERENCE ON ELECTROTECHNICS

EUROCON '74

THE ENGINEER IN SOCIETY—AMSTERDAM 22–26 APRIL 1974



C. Reginald Russell
Director Region 8

Dear Member of Region 8,
The IEEE, as you know, is a transnational society which means that it seeks to provide *all* its services *world-wide*, regardless of the particular country its members live in. We are all familiar with the vast range of IEEE's publications but, as members, additional services are available to us—particularly in the organisation of conferences. In 1971, the then Director, Dr Roger Welling of Switzerland introduced a new type of conference—Eurocon '71—to the Region and to Europe, a highly successful event

attended by 1100 engineers, held in Lausanne. You will have read in previous newsletters that a successor conference—Eurocon '74—has been arranged, this time in Amsterdam. In this extra issue of the Region's newsletter devoted to Eurocon '74 I want to emphasise the importance of the conference in the hope you will be able to join us there. There are, of course, many conferences in Europe, but this is a special one.

First, we are this time joined as *partners* in organising the conference by the Convention of Electrical Engineering Societies of Western Europe—and many of you will be members both of the IEEE and of your particular national society which is itself a member of the Convention.

Second, Eurocon is a *special type of conference* as is shown by the following extract giving a representative selection from the 279 papers being presented—the six main conference themes cover areas of interest to every member. Specialists in particular technical areas can readily identify papers on the frontiers of their specialisation whilst, in addition, the conference organisers have taken care to arrange a time-table of invited papers to enable you to become familiar with state-of-the-art in other important areas which run parallel to your specialisation.

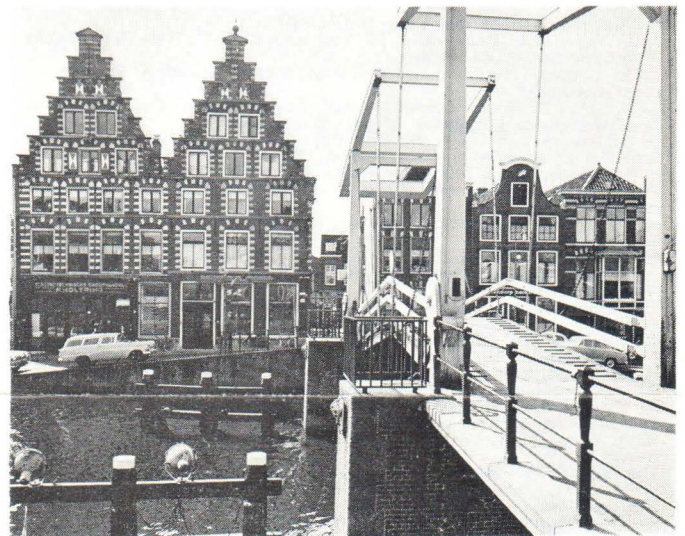
Third, recognising that a conference is also a *meeting-place*, great emphasis is placed on participation—particularly in discussions after papers, for which generous time is allowed and also for panel and discussion groups. We all know the great benefits personal contacts can bring.

All this has required a great deal of dedicated effort from the technical programme committee and in order to keep the topics fresh and up to date the final technical programme has been issued as late as possible—to use computer language it is a "real time" conference. This special issue of the newsletter therefore, is designed to bring you these *last-minute details* of the technical programme.

The preliminary information which has so far appeared has already brought a large response for registration. I hope you, too, will fill out the enclosed forms A, B, C for registration and join us in Amsterdam.

C. REGINALD RUSSELL

There is a good social events programme—with a Ladies' Programme—as shown on Form C; the Dutch evening is arranged as a vast series of buffets—again enabling participants to move around in a convivial atmosphere and make further contact with conference colleagues.



HAARLEM: Draw-bridge and old Gables

100 OF THE 279 PAPERS BEING PRESENTED AT EUROCON '74

SECTION 1 — CONTROLLING THE FUTURE

Options of global energy distribution

R. Pestel — M. D. Mesarovich, Technische Universität Hannover, Hannover, Germany

Planning a fusion generator for 1983

K. M. Siegel, KMS Industries Inc., Ann Arbor, Michigan, USA

Use of national models for predicting alternative futures

H. Chestnut, General Electric, Schenectady, N.Y., USA

World dynamics: a dynamic optimization study

G. J. Olsder — R. C. W. Strijbos, Twente Univ. of Technology, Enschede, The Netherlands

Controlling the modelling of large systems

R. C. Curnow, The Univ. of Sussex, Brighton, Sussex, England

Transport of hydrogen

Chemische Werke Hüls AG, Mannheim, Germany

The use of metal hydrides in storage and handling of hydrogen gas

H. Zijlstra, Philips Research Lab., Eindhoven, The Netherlands

Hydrogen as an energy carrier

C. Marchetti, Euratom, Ispra, Italy

The importance of environmental and resource restrictions

R. Graziotti, Electricité de France, Saint-Denis, France

Climatic effect of energy production

H. Flohn, Universität Bonn, Bonn, Germany

Rational utilisation of energy

L. C. Corradini, CEE, Brussels, Belgium

Population policy as an optimal control problem

H. Kwakernaak — E. A. W. Bolle — A. B. Bosch-de Boer, Twente Univ. of Technology, Enschede, The Netherlands

The computer as a tool in socio-economic and environmental systems analysis

P. C. Young, Univ. of Cambridge, England

Interactive computer displays for distribution systems planning

J. T. Boardman — R. J. Wilde, Univ. of Liverpool, Liverpool, England

Thermal solar energy conversion

J. L. Meylan — D. Gross, Battelle, Geneva, Switzerland

Gas turbines

J. Carrase, Alsthom, Massy, France

A new electrical generator functioning with an emulsion of gas and liquid metal on an MHD principle

R. A. Bidard, C.E.M., Paris, France

Measuring the economic impact of programmable automation in manufacturing: a futuristic assessment

N. M. Kamrany, Univ. of Southern California, Marina del Rey, Calif., USA

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SECTION 2 — INSTRUMENTATION ELECTRONICS

- Structure analysis and electron microscopy of biological molecules**
O. Scherzer, Technische Hochschule Darmstadt, Darmstadt, Germany
- Image processing in real-time**
S. Abrahamsson, Univ. of Gothenburg, Gothenburg, Sweden
- New technique for the digital processing of radar signals**
J. J. Kappl, Hughes Aircraft Co., Westlake Village, Calif., USA
- Subnanosecond and picosecond detection and display devices**
J.-P. Hazan, Lab. d'Electronique et de Physique Appliquée, Limeil-Brevannes, France
- Propulsion of an autonomous, resistant and manoeuvrable submarine capable of reaching depths of around 3,000 metres**
F. Baillieu, ESIEE, Paris, France
- The tasks of measuring techniques to effect the environmental control; questioning and development**
W. Breuer, Bayer AG, Leverkusen, Germany
- The impact of microelectronics on instrumentation**
Th. J. van Kessel, Philips Research Lab., Eindhoven, The Netherlands
- Intelligent measuring instruments**
T. Frühauf, Rohde und Schwarz, München, Germany
- The exploitation of computers in auto-test systems**
A. G. Hayes, British Aircraft Corporation, Stevenage, England
- Display of electron microscope images obtained by beam rocking**
K. J. van Oostrum, Philips Research Lab., Eindhoven, The Netherlands
- The microchannel electron multipliers a new device for a new generation of equipments**
G. Eschard — J. Graf — R. Polaert, Laboratoires d'Electronique et de Physique Appliquée, Limeil-Brevannes, France
- Application of microwave techniques to the measurement of the position of a very fast moving piston in a barrel**
O. B. M. Pietersen — F. Klinker, National Aerospace Lab. NLR, Amsterdam, The Netherlands
- Modern displays for aircraft cockpits**
B. Ellis, Royal Aircraft Establishment, Farnborough, Hants., England
- Remote measurement of local temperatures in equipments submitted to high accelerations**
J. Galand — A. Carballeira, Lab. Central des Industries Electriques, Fontenay-aux-Roses, France
- New impact of technologies on oceanology**
A. Brin, Centre National pour l'Exploitation des Océans, Paris, France
- Design and performance of the air pollution surveillance system in the area of Frankfurt/Main**
H. W. Georgii, Institut für Meteorologie und Geophysik der Johann Wolfgang Goethe-Universität, Frankfurt/Main, Germany
- Microwave spectroscopy, a method for air pollution control**
W. Schilz — B. Schiek, Philips Forschungslab. Hamburg GmbH, Hamburg, Germany
- Opto-acoustic air pollution monitors**
L. G. Rosengren — E. Max — S. T. Eng, Chalmers Univ. of Technology, Gothenburg, Sweden
- The impact of microelectronics on data processing capability and replacement of electromechanical means by electronics**
U. Pellegrini, Olivetti, Ivrea, Italy
- Wideband instrumentation recording of 80 million bits per second**
J. B. Wells, Bell & Howell, Pasadena, Calif., USA
- Automatic diagnosis as feature of modern check-out systems**
F. W. Schuiz, Siemens AG, Karlsruhe, Germany

SECTION 3 — COMMUNICATIONS FOR THE 1980'S

- On the marriage of telephone and television**
J. L. Bordewijk, Delft Univ. of Technology, Delft, The Netherlands
- Post 1980 local line engineering**
C. E. Clinch, Telecommunications Headquarters, London, England
- Local network**
A. P. Boille, Dr. Neher Laboratory PTT, Leidschendam, The Netherlands
- Concepts of long distance digital transmission**
H. Marko, Institut für Nachrichtentechnik, München, Germany
- Broadband transmission over optical fibres**
S. Maslowski, AEG-Telefunken, Ulm, Germany
- Principles and application of source encoding of speech, pictures and facsimile**
M. Musmann, Technische Universität Braunschweig, Braunschweig, Germany
- Electromagnetic compatibility**
F. L. H. M. Stumpers, Philips Research Lab., Eindhoven, The Netherlands
- The future of broadcasting, with special reference to satellite broadcasting**
G. Hansen, EBU, Brussels, Belgium
- Transmission of digital TV signals via communication satellites**
P. C. Ulrich, Standard Elektrik Lorenz AG, Stuttgart, Germany
- OTS—a forerunner of a European communication satellite system**
P. Bartholomé, ESRO, Noordwijk, The Netherlands
- The planning of a new automatic mobile telephone system**
N. A. Grimsmo, Norwegian Telecommunications Administration, Oslo, Norway
- The expanding role of telecommunications**
W. J. Bray, Telecommunications Headquarters, London, England
- New services and technologies**
K. Teer, Philips, Eindhoven, The Netherlands
- The local cable network of the 1980's**
K. Schüssler, Siemens AG, München, Germany
- Broadband transmission of information in local networks**
E. Rauth, AEG-Telefunken, Backnang, Germany
- T4M, A 274 MB/sec. digital repeated line for coaxial cable**
J. M. Sipress, Bell Laboratories, Holmdel, New Jersey, USA
- Progress of fibre optic transmission systems in Canada**
M. A. Prabhu, Bell-Northern Research, Ottawa, Canada
- Measuring radiated interference immunity of electronic equipments**
T. Dvorak, Eidgenössische Technische Hochschule, Zürich, Switzerland
- Measurements of atmospheric emission at 11 GHz in the European region**
F. M. Galante, European Space Research Organisation, Noordwijk, The Netherlands
- Line of sight propagation studies in Indonesia**
J. Dijk — A. C. A. van der Vorst, Delft Univ. of Technology, Delft, The Netherlands
- Direct broadcast reception of television from satellites: the social need and the technical potential**
K. G. Freeman, Mullard Research Lab., Redhill, Surrey, England
- TDMA synchronization for future multitransponder satellite communication**
H. Gänssmantel, AEG-Telefunken, Backnang, Germany
- Data transmission and location via mobile radio for efficient fleet control**
R. W. Gibson, Mullard Research Lab., Redhill, Surrey, England

- Present trends in data transmission**
W. Kaiser, Universität Stuttgart, Stuttgart, Germany
- The electronic blackboard**
Telecommunication Working Group Indonesia-Netherlands, Delft Univ. of Technology, Delft, The Netherlands
- The anti-social engineer in society with particular reference to unauthorised eavesdropping systems**
C. B. Bovill, CDI Holding Ltd., London, England
- Study of videophone service**
P. M. van den Avoort, Philips, Eindhoven, The Netherlands

SECTION 4 — THE COMPUTER IN SOCIETY

- Computers and engineering (review paper)**
C. G. Scarrott, International Computers Limited, Stevenage, Herts., England
- Education software: definition of computer systems adapted to engineering education and training**
J. C. Sabonnadiere — J. C. Latombe, Ecole Nationale Supérieure d'Electrotechnique et de Génie Physique de Grenoble, Grenoble, France
- The computer and the creation and use of leisure (review paper)**
B. M. Murphy, International Computers Ltd., London, England
- Potentials for interactive computer networks (review paper)**
J. C. R. Licklider, Massachusetts Institute of Technology, Cambridge, Mass., USA
- Application and use of data banks in a hospital (review paper)**
J. Anderson, King's College Hospital Medical School, London, England
- The role of the engineer in his relationship with computers and management (review paper)**
J. A. Carruthers, Unilever, London, England
- Contradictions of the man/machine symbiosis in computer aided design, and its wider implications**
M. J. E. Cooley, Amalgamated Union of Engineering Workers, Langley, England
- Improvements of planarization algorithms reducing interactive work for computer-aided layout design**
H. Klamet, Philips Forschungslab, Hamburg, GmbH, Hamburg, Germany
- Didactical digital computer with variable instruction set**
I. van Waes — J. A. Peperstraete, Catholic Univ. of Leuven, Heverlee, Belgium
- Computers and art**
K. Brunnstein, Univ. of Hamburg, Hamburg, Germany
- Organization and data processing in the control of production processes**
H. Wittkowski, Siemens AG, München, Germany
- PANEL DISCUSSION: OUR RESPONSIBILITY TOWARDS SOCIETY**
Chairman: K. Brunnstein, Univ. of Hamburg, Hamburg, Germany
- Introduction: Are there ethical considerations posed by system implementation?**
Panel members: W. G. Evans, Imperial College of Science and Technology, London, England — Engineers awareness and response
S. P. Rose, Urwick Technology Management Ltd., Slough, England
- Equivalence and acceptance of power and responsibility**

SECTION 5 — BIOMEDICAL ENGINEERING

- Pattern recognition control of a multifunctional hand prosthesis: electronic design aspects**
C. Almström — P. Herberts — R. Kadefors, Chalmers Univ. of Technology, Gothenburg, Sweden
- Review of electronic devices to control pain**
C. D. Ray — R. Breest, Medtronic Inc., Minneapolis, Minn., USA
- Biomedical image processing**
M. Tasto, Philips Forschungslab. Hamburg GmbH, Hamburg, Germany
- Problems in an integrated approach to biomedical engineering**
C. Cobelli, Labb. per l'Electronica Biomedica del C.N.R., Padova, Italy — A. Saluan, Università di Padova, Padova, Italy
- Technology and health care—the changing scope of biomedical engineering**
R. B. Connors, The Roosevelt Hospital, New York, USA
- Processing of bio-electric signals**
L. H. Zetterberg, Royal Institute of Technology, Stockholm, Sweden
- Application of digital filtering and data compression to processing of some biomedical signals**
V. Cappellini — A. Gabbanini — F. Lotti — F. Pieralli, Istituto di Ricerca sulle Onde Elettromagnetiche, Firenze, Italy
- Interpretation of myoelectric signal power spectra. Part I: Theory**
L. Lindström — H. Broman — R. Magnusson, Chalmers Univ. of Technology, Gothenburg, Sweden
- Interpretation of myoelectric signal power spectra. Part II: Experimental confirmation**
H. Broman — L. Lindström — R. Magnusson — I. Petersen, Chalmers Univ. of Technology, Gothenburg, Sweden — E. Stalberg, Univ. of Uppsala, Uppsala, Sweden
- Progress in non-invasive cardiac intensive care**
R. J. Plaszczyński, Thomson Medical Telco, St.-Cloud, France
- Advantages and limitations of power sources for cardiac pacemakers**
A. R. Kahn — H. Thornander, Medtronic Inc., Minneapolis, Minn., USA
- Simulation of dynamic renal function—a research and diagnostic tool**
J. S. Packer — J. E. Packer, Univ. of Cambridge, Cambridge, England
- Unconventional imaging systems for X-radiation in medicine**
G. Groh — H. Weiss, Philips Forschungslab. Hamburg GmbH, Hamburg, Germany
- A beat-to-beat cardiac output computer using a pulse contour method**
B. de Wit — K. H. Wesseling — H. Weber, Institute of Medical Physics TNO, Utrecht, The Netherlands — N. Ty. Smith, Veterans Administration Hospital, San Diego, Calif., USA
- A new pulmonary function analyser**
B. Stutterd — R. Crane, Univ. of Salford, Salford, England
- Automatic EEG assessment with on-line data acquisition**
S. Friberg — M. Matousek — I. Petersén, Chalmers Univ. of Technology, Gothenburg, Sweden

SECTION 6 — EDUCATION

- The electrical engineering education at the 'Katholieke Universiteit Leuven' at Leuven in Belgium after a recent reform of the curricula**
W. J. Geysen — F. P. Pietermaat — H. P. Debruyen — R. van Overstraeten — P. Luybaert, Catholic Univ. of Leuven, Leuven, Belgium
- On the application of computer-aided instruction to communication engineering education**
G. Einarsson, Lund Institute of Technology, Lund, Sweden
- Teaching electronic engineering in a university in a developing country**
S. B. Hussain, Newcastle-upon-Tyne, England
- Measurement and feedback—a compulsory course for all students of science and technology?**
B. E. Jones, The University, Manchester, England
- Multi-media teaching system for the French telecommunications authority**
J.-G. Remy, Service Technique d'Etude des Moyens Modernes d'Enseignement, Orsay, France
- Some problems of technical education in developing countries**
G. Peterlongo, Milano, Italy