

Meetings

EUROCON '71, Region 8's first, will feature six special conferences including 200 papers

EUROCON '71, Region 8's first convention, is in the final stages of preparation in becoming a transnational meeting where scientists, engineers, managers, educators, and students can hear papers and discuss their views and problems. The convention will be held October 18–22 at the Palais de Beau-lieu, Lausanne, Switzerland.

Many national societies are supporting Region 8 in presenting EUROCON '71. They include: Oesterreichischer Verbans für Electrotechnik of Austria; Société Royale Belge des Electriciens of Belgium; Dansk Ingenioforening and Ingenior Sammenslutningen of Denmark; Société Francaise des Electriciens, Société Francaise des Electroniciens et des Radioelectriciens, and Association Francaise pour la Cybernétique Economique et Technique of France; and Verband Deutscher Elektrotechniker of West Germany. Also supporting EUROCON '71 are the Institution of Electrical Engineers, the Institution of Electronic and Radio Engineers, and the Institution of Electrical and Electronics Technician Engineers of Great Britain; the Greek Electrotechnical Association and the Technical Chamber of Greece; Associazione Elettronica ed Elettronica Italiana of Italy; Koninklye Vlaamse Ingenieursverenigh of The Netherlands; Den Norske Ingenioforening and Norsk Elektroteknisk Forening of Norway; Svenska Elektroingenjörers Riksförbund, Tekniska Samfundet i Göteborg, Fachavdelningen för Elektroteknik of Sweden; and Association Suisse des Electriciens, Association Suisse des Ingenieurs et Architectes, Association Suisse pour l'Automatique, Association Suisse pour la Technique Biomédicale, Association Suisse pour les Techniques Spatiales, Groupement de l'Electronique Vaudoise, and Radio-Suisse SA of Switzerland.

The technical program of EUROCON '71, made up of special sessions, survey papers, tutorial lectures, panel discussions, and workshops, will include about 200 papers. The general survey and student programs are arranged to form a conference-within-a-conference.

There are six specialist conferences in the areas of information processing

in large systems, long-distance communication, solid-state circuits, distribution of electric power, biomedical engineering, and electronic timekeeping.

EUROCON '71 will enable communication in many different dimensions. Specialists will communicate with experts in their own field, as well as in different fields. Communication between members of many European national societies and institutions will be possible. Extending across the boundaries of age and occupation, EUROCON '71 offers a time for students, teachers, professional engineers, and scientists to communicate with each other.

Dr. H. C. Eric Choisy, president of the World Federation of Engineering Organizations, will open EUROCON '71. Following this, the inaugural presentation of the IEEE Frederik Philips Award, donated by N. V. Philips Gloeilampenfabrieken of Eindhoven, Holland, will take place.

Several technical excursions will be organized to Swiss companies and power stations.

The ladies' program will include excursions to Gruyere castle, Romainmotier, and the Lausanne area. The registration is \$7.50 per day.

Advance registration, if postmarked on or before September 13, is \$31 for IEEE and supporting societies members, and \$45 for nonmembers. Student members or any nonmember students who are attending a full-time course of study at the time of the convention (this endorsed by a professor or head of department) pay a \$2.00 registration fee.

Registration after September 13 is \$37 for members and \$55 for nonmembers.

The convention digest, containing a two-page abstract of each paper, is included in the registration fee. Members unable to attend the convention may order copies for \$10 each (Region 1–7) and \$6 each (Region 8–10) from Local Secretary, EUROCON '71, 24 Chemin de Bellerive, CH-1007, Lausanne, Switzerland.

In order to facilitate travel to Lausanne for attendance at EUROCON '71, IEEE has arranged with the National Center for Educational Travel, Inc., for

group flights to Geneva prior to October 18. These special flights, on such carriers as TWA, BOAC, KLM, and Pan Am, are for members of IEEE and their immediate families.

The flights, all arriving in Geneva, are as follows: departing October 7 on Swissair from New York and returning October 28 for \$250; departing October 12 on Swissair from New York and returning October 26 for \$250; departing October 14 on TWA from New York and returning October 25 for \$250; departing October 14 from Boston and returning October 25 for \$243; departing October 14 on KLM from Chicago and returning October 25 for \$330; departing October 14 on TWA from the West Coast and returning October 25 for \$372; and departing October 14 on BOAC from Washington and returning October 25 for \$275.

For further details about the group flights and reservation applications refer to page 54 of the April issue of *Spectrum*. IEEE is not involved in any way in flight arrangements. All correspondence should be addressed to National Center for Educational Travel, Inc., 1601 Connecticut Ave. N.W., Washington, D.C. 20009.

The complete technical program follows.

INFORMATION PROCESSING IN LARGE SYSTEMS

WEDNESDAY MORNING, OCTOBER 20

Information Processing in Radio Astronomy and Meteorology

Chairman: to be announced

Information Processing in the Field of Meteorology, Bradbury, Royal Meteorological Office, Bracknell, U.K.

Processing of Weather Radar Data, M. R. Schaffner, J. Joss, M.I.T., Cambridge, Mass.

Information Processing by Space Systems for Meteorology and Earth Resources, L. Norwood, Hughes Aircraft Co., El Segundo, Calif.

Information Processing in Radio Astronomy, Kenderdine, Radio Observatory, Cambridge, U.K.

Some Technical Aspects of a Weather Modification Field Program, J. A. Kleppe, University of Nevada, Reno, Nev.

WEDNESDAY AFTERNOON, OCTOBER 20

Computers in Communication

Chairman: to be announced

Use of Computers in Problems of Electromagnetic Compatibility, D. N. Hatfield, Department of Commerce, Boulder, Colo.

Syntax-Directed Communication Control, H. J. Hoffmann, IBM Zurich Research Laboratory, Zurich, Switzerland

Computer Control of a Digital Radiosonde, L. Bossy, Royal Meteorological Institute, Brussels, Belgium

Uses of Computers in the Planning of HF Communication Systems, Herbstreit, CCIR, Geneva, Switzerland

Feature Extraction from Speech with a Computer Applied for a Classification or Recognition Process, L. L. Pfeifer, University of California, Santa Barbara, Calif.

THURSDAY MORNING, OCTOBER 21

Information Processing in Living Systems

Chairman: to be announced

Psychological, Physical, and Electrophysiological Analysis of Information Processing in the Nervous System, Vendrik, University of Nijmegen, The Netherlands

Psychological and Physical Analysis of a

Complex System, E. G. J. Gijkmann, University of Nijmegen, The Netherlands
 Forward and Backward Analysis of Temporal Relations Between Sensory Stimulus and Neural, P. I. M. Johannesma, University of Nijmegen, The Netherlands
 Information Processing in Living Systems from Natural to Artificial Picture Processing, S. Levialdi, Cybernetics Laboratory, Naples, Italy
 Information Processing in Living Systems, Reichardt

FRIDAY MORNING, OCTOBER 22

Information Processing in Real-Time Systems
 Chairman: W. L. v.d. Poel, University of Technology, Delft, The Netherlands
 Data Management Concepts in a Large-Capacity Structural Analysis Computer Program, Von Fuchs
 Software Design Techniques in High-Speed Real-Time Systems, B. Lindestam, Stansaab Elektronik AB, Barkarby, Sweden
 Minicomputer Executives for the Development of Real-Time Applications, J. J. Allan, University of Texas, Austin, Tex.
 Information Processing for Traffic Control, D. Gazis, IBM, New York, N.Y.
 Air Traffic Control by Computer Systems, A. Dumont, Compagnie Internationale pour l'Informatique, Louveciennes, France

FRIDAY AFTERNOON, OCTOBER 22

Information Processing in Physics
 Chairman: to be announced
 Information Processing in High-Energy Physics, G. R. MacLeod, CERN, Switzerland
 ERASME—A Computer-Based System for the Scanning and Measurement of Bubble Chamber Photographs, D. H. Lord, CERN, Switzerland
 An On-Line Scintillation Counter Control System, R. M. Graven, University of California

LONG-DISTANCE COMMUNICATION

TUESDAY MORNING, OCTOBER 19

Terrestrial Transmission

Chairman: W. Poschenrieder, Siemens AG, Munich, Germany
 Multiplex Terminal for 10 800 Telephone Channels, P. Echarti, L. M. Ericsson, Stockholm, Sweden
 High-Quality Sound Program Transmission with a Computer-Controlled Semiconductor Patching Panel, W. V. Guttenberg, Siemens AG, Munich, Germany
 Regulation and Equalization of Long Carrier System, L. Becker, SEL, Stuttgart, Germany
 Line Equipment with 60-MHz Bandwidth for Transmission of 10 800 Voice Coaxial Cables, H. Keil, F. Koppenhele, and E. Kugler, Siemens AG, Munich, Germany
 A Simple, Short-Range, All-Solid Millimeter-Wave Link for High Data Rates, S. E. Gibbs, H. R. Holliday, J. Trafford, Royal Radar Establishment, Great Malvern, U.K.

TUESDAY AFTERNOON, OCTOBER 19

Digital Transmission

Chairman: K. W. Cattermole, University of Essex, U.K.
 High-Order PCM Systems and Broadband Signal Transmission, H. Geisler, AEG-Telefunken, Backnang, Germany
 Contribution to the Study of Quasynchronous Digital Networks, P. G. Fontollet, Albiswerk, Zurich, Switzerland
 Optimization of a Pulse Transmission System in the Presence of Timing Jitter, E. Hansler, IBM, Yorktown Heights, N.Y.
 Nonadaptive and Adaptive Differential Pulse Code Modulation of Speech Signals, P. Noll, Heinrich-Hertz Institute, Berlin, Germany
 Servobalanced Delta Modulator, A. Croisier, C. Jacquar, IBM France, La Gaudie, France
 Advanced Encoding System for Videophone Transmission, A. H. Frei, IBM, Ruschlikon, Switzerland

WEDNESDAY MORNING, OCTOBER 20

Satellite Transmission I

Chairman: E. Dietrich
 Comsat Future Plans for Satellite Communications, R. D. Briskman, Comsat Corp., Washington, D.C.
 Present State of Development and Extension

Plans for Satellite Earth Station at Raisting (Germany), G. Erler, FTZ, Darmstadt, Germany
 Satellite Data Transmission Using SPADE, E. R. Cacciamani, Comsat Laboratory, Clarksburg, Md.
 Millimeter-Wave Space Communications—A Summary of Measurements with the Applications Technology Satellite ATS-5, L. J. Ippoliti, NASA Goddard Space Flight Center, Greenbelt, Md.
 SIRIO SHF—Experiment Data Handling, F. Maffioli, Politecnico, Milan, Italy
 Adaptive Multiple Access With Satellite Communications Above 10 GHz, R. Makruschka, Forschungsinstitut für Hochfrequenzphysik, Werthhoven, Germany

WEDNESDAY AFTERNOON, OCTOBER 20

Satellite Transmission II

Chairman: R. D. Briskman, Communications Satellite Corp., Washington, D.C.
 Predicting and Optimizing Satellite Communication Performance Under Unfavorable Geographic and Atmospheric Conditions, H. J. Albrecht, Forschungsinstitut für Hochfrequenztechnik, Werthhoven, Germany
 Atmospheric Inhomogenitics and Space Communications, C. Fengler, Philips, Hamburg, Germany
 Limitations of Technological State of the Art with Satellite and Space Communications Above 10 GHz, R. Mensel, K. Rosenbach, Forschungsinstitut für Hochfrequenztechnik, Werthhoven, Germany

THURSDAY MORNING, OCTOBER 21

Telephony, Switching, and Interfaces

Chairman: G. Neovius, L. M. Ericsson, Stockholm, Sweden
 Trends in Telephone Switching, K. Katzeff, L. M. Ericsson, Stockholm, Sweden
 AKK 50—A Switching System for Small Telephone Exchanges, T. Johnson, L. M. Ericsson, Stockholm, Sweden
 Piezoelectric Ceramics and Their Application in Telecommunication, F. Beil, Siemens AG, Munich, Germany
 Picturephone Service, R. R. Stokes, Bell Labs
 Impact of CCITT No. 6 Common Channel Signalling on Stored Program Control Systems, F. Van'den Brande, Bell Telephone Manufacturing Co., Antwerp, Belgium
 Report on Results of the CCITT No. 6 Tests, R. Hannig, Siemens AG, Munich, Germany

THURSDAY AFTERNOON, OCTOBER 21

Data Transmission I

Chairman: H. Wusteney, Siemens AG, Munich, Germany
 Data Communication—The Second Revolution in Telegraphy, J. Rhodes, GPO, London, U.K.
 Teleprinters for Data Transmission, G. Baggenstoss, PTT, Bern, Switzerland
 Redundant Coding and Its Economical Aspects, K. Ohnsorge, AEG-Telefunken, Ulm, Germany
 Circuit and Message Switching by the Electronic Data Switching System, W. Staudinger, FTZ, Darmstadt, Germany
 Features of a Proposed Synchronous Data Network for the United Kingdom, K. J. Chapman, PO, London, U.K.

FRIDAY MORNING, OCTOBER 22

Data Transmission II

Chairman: J. Rhodes, Post Office Engineering Department, U.K.
 Equalization for Digital Communication, B. Wendland, AEG-Telefunken, Ulm, Germany
 DC Data Transmission on Local Cables Up to 10 000 Bits/S, R. Gieck, Siemens AG, Munich, Germany
 Design of TDM Multiplexer for Low- and Medium-Speed Data Signals, N. Casoria, P. Fanchiotti, F. Russo, Selenia, Rome, Italy

FRIDAY AFTERNOON, OCTOBER 22

Telephone Switching with Electronic Contacts

Chairman: K. Katzeff, L. M. Ericsson, Stockholm, Sweden
 A System for the Switching of Speech, Data, and Image Circuits, S. Dal Monte, G. Donzello, A. Perna, G. Valbonesi, SIT-Siemens, Milan, Italy

An Experimental Telephone Switching System Using Semiconductor Crosspoints, B. Rall, AEG-Telefunken, Ulm, Germany
 The Integrated Digital Telecommunications System IFS-1, A. E. Bachmann, R. P. Loretan, PTT, Bern, Switzerland

Transmission Problems

Chairman: W. Poschenrieder, Siemens AG, Munich, Germany
 Multiple Carrier FM Distortion Due to Non-linear Phase Shift in TWTs, M. Glauner, W. Schreitmüller, AEG-Telefunken, Backnang, Germany
 A Simple Method to Calculate the Characteristics of FSK Signals with Modulation Index 0.5, H. C. Van den Elzen, P. Van der Wurff, Philips, Eindhoven, The Netherlands
 Linear Frequency Modulation for Long-Range Radio Transmission, G. David, M. Duquenne, C. Olier, TRT Co., Paris, France
 Threshold Analysis of the Frequency Modulation Feedforward (FMFF) FM Demodulator, J. A. Camp, Martin Marietta Corp., Denver, Colo.
 Transmission Characteristics of Echo Paths, R. Wehrmann, W. Koch, FTZ, Berlin, Germany

THURSDAY MORNING, OCTOBER 21

Electromagnetic Compatibility I

Chairman: T. Morgan, Ministry of Defense, U.K.
 From Radio Frequency Interference to Electromagnetic Compatibility, Harrison, Ministry of Aviation Supply, U.K.
 A New Multichannel Measuring Technique for RFI, R. W. Coram, Electrical Research Association, Leatherhead, U.K.
 Peak Versus Quasipeak, G. A. Jackson, Electrical Research Association, Leatherhead, U.K.
 A Survey of IEEE Activities in Radio-Frequency Interference Standards, J. E. Bridges, IIT Research Institute, Chicago, Ill.
 A Modern Approach to Susceptibility Testing, F. J. Derham, Aish & Co., Ltd., Poole, U.K.

THURSDAY AFTERNOON, OCTOBER 21

Electromagnetic Compatibility II

Chairman: Harrison, Ministry of Aviation Supply, U.K.
 Unique Electromagnetic Compatibility Instrumentation and Measuring Methods Developed for Use in the Royal Navy, C. J. Britton, Ministry of Defense, London, U.K.
 Simulation of Interfering Voltages on Lines by Equivalent Standardized Pulses, D. Stoll, AEG-Telefunken, Konstanz, Germany
 The Screening of Coaxial Cables, E. P. Fowler, Atomic Energy Establishment, Winfrith, U.K.
 Measuring Methods EMC and RFI, A. De Jong, Dr. Neher Laboratory PTT, Leidschendam, The Netherlands
 The Susceptibility Testing on Instrumentation Installation, J. Wilson, Atomic Energy Authority Control, U.K.

FRIDAY AFTERNOON, OCTOBER 22

Radio Navigation by Doppler Effect

Chairman: J. J. Muller, Le Materiel Telephonique, France
 The Application of Doppler Effect for Navigation, E. Kramar, SEL, Stuttgart, Germany
 Ground-Based Radio Aids for Area Navigation, H. Popp, SEL, Stuttgart, Germany
 Doppler Terminal Guidance System, F. G. Overbury, STL Harlow, Essex, U.K.
 The Use of Atomic Clocks in Space Craft Location, R. Moreau, Office National d'Etudes et de Recherches Aeronautiques, Chatillon, France
 Synthesis Criteria for Digital Extraction of Doppler Target Data, Di Nardo, G. Nucci, Selenia, Rome, Italy
 Design Problems of Airborne Antennas Used for Radio Links to Satellites, R. Reitzig, Siemens AG, Munich, Germany

TUESDAY EVENING, OCTOBER 19

The Future of Communications (panel)

Chairman: Kaiser, FTZ, Darmstadt, Germany

SOLID-STATE CIRCUITS

WEDNESDAY AFTERNOON, OCTOBER 20

Circuits and Applications I

Chairman: P. Jespers, University of Louvain, Belgium

Hybrid Integrated Circuits, Their Place Between Printed Circuit Boards and Monolithic ICs, Neuhuys, MBLE, Belgium

Computer-Aided Design of Frequency Stable Feedback Amplifiers, A. M. Anckaert, University of Louvain, Belgium

A Total Hybrid Circuit Approach to Microelectronics, R. F. Russell, Standard Telephones and Cables, Paignton, U.K.

Digitally Programmable Bipolar High-Voltage Converter, S. Cantarano, G. V. Pallotino, Istituto G. Marconi, Rome, Italy

A MOST Inverter with Improved Switching Speed, J. Koomen, University of Twente, The Netherlands

A New TV Tuner Concept, A. H. Nieveen van Dykum, J. Rozenboom, Philips, Nijmegen, The Netherlands

THURSDAY AFTERNOON, OCTOBER 21

Circuits and Applications II

Chairman: P. Jespers, University of Louvain, Belgium

New Semiconductor Memory Devices, K. V. Stein, Siemens AG, Munich, Germany

Characterization of MNOS Memory Transistors, M. H. White, Westinghouse Electric Corp., Baltimore, Md.

LSI Tester Uses LSI Memory, H. A. Zimmermann, Tektronix, Beaverton, Oreg.

TRANSI: A program for the Analysis of Passive Networks in Time Domain, D. Misler, Societa Italiana Telecomunicazioni, Siemens s.p.a., Milan, Italy

A New Method for the Display of Signals from Scanning Devices, R. J. L. Lerou, Physisch Laboratorium, RVG-TNO, Den Haag, The Netherlands

THURSDAY MORNING, OCTOBER 21

New Devices

Chairman: to be announced

The Schottky-Barrier Device, A Modern Semiconductor Component, K. E. Drangeid, IBM Forschungslabor, Ruschlikon, Switzerland

Piezoelectric Field-Effect Mechanoelectric Transducers, R. S. Muller, University of California, Berkeley, Calif.

Resistive-Gated IGFET Structures, R. S. Muller, University of California, Berkeley, Calif.

Contrast Enhancement in Matrix-Addressed Liquid-Crystal-Light Valve Arrays by Electronic Quenching, P. J. Wild, BBC, Baden, Switzerland

MOS Integrated Bucket-Brigade Transversal Filters, F. L. J. Sangster, Philips Research Laboratory, Eindhoven, The Netherlands

New IC Concepts for Linear Optical Scanning, A Bucket-Brigade Application, H. Heyns, Philips Research Laboratory, Eindhoven, The Netherlands

FRIDAY MORNING, OCTOBER 22

Device Analysis I

Chairman: to be announced

Applications of Metal-Silicon Structures in Integrated Circuits, B. Kurz, M. Barron, W. Butler, GE, Schenectady, N.Y.

Lateral Carrier Flow Along MIS Structures, C. Trullemans, F. Van de Wiele, University of Louvain, Belgium

Punch-Through Phenomena in MOS Transistors, J. Shappir, Philips, Nijmegen, The Netherlands

Computer-Aided Design of Field-Effect Transistors (MESFET), M. Reiser, IBM, Ruschlikon, Switzerland

Theory of Space-Charge Effects in Negative-Mobility-Current-Limited Injection Mode, D. Dascalu, Polytechnical Institute, Bucharest, Rumania

Considerations on the Impurity Profile of Diffused Junctions, W. Nuyts, R. Van Overstraeten, University of Louvain, Belgium

FRIDAY AFTERNOON, OCTOBER 22

Device Analysis II

Chairman: to be announced

Dependence of Fast Surface States on Surface Potential, G. Declerck, R. Van Overstraeten, University of Louvain, Belgium

Switching Times and High Injection in Epitaxial Transistors, W. Rauls, M. Conti, Societa Generale Semiconduttori, Milan, Italy

Some Photoproperties of High-Resistivity Ga-

As Devices Exhibiting Low-Frequency Current Oscillations, R. Kaman, S. V. Jaskolski, Marquette University, Milwaukee, Wis.

Microwave Systems

Chairman: A. Vander Vorst, University of Louvain, Belgium

Acoustic Surface Wave Filters, R. F. Mitchell, Mullard Research Laboratory, Surrey, U.K.

The Use of Superconducting Resonant Cavities at Frequencies in the CR Region, M. C. Eschelbacher, Karlsruhe University, Germany

A Simple Shape Range Solid-State Millimeter-Wave Link for High Data Rates, S. E. Gibbs, M. R. Holiday, K. Traffor, Royal Radar Establishment, Great Malver, U.K.

DISTRIBUTION OF ELECTRIC POWER

TUESDAY AFTERNOON, OCTOBER 19

Trends in Distribution Systems

Chairman: N. Knudsen, Chalmers University of Technology, Goteborg, Sweden

The Swiss Grid: Historical Development and Future Trends, F. Schar, Aare, Tessin Electric Co., Switzerland

Operation of Typical Distribution Networks in Norway, K. Olsen, Technical University, Trondheim, Norway

The Socioeconomic/Technical Subsystems for Addition of Electric Power to a Mexican Village, S. F. Love, University of Guyana, Guyana

The Influence of Increasing Installed Capacity in Substations on Economical Dimensioning of Switchgear, G. Hux, R. Thaler, Sprecher and Schuh, Ltd., Aarau, Switzerland

Harmonics of HV/MV Core-Type Star/Star Distribution Transformers Without Auxiliary Delta Winding, B. C. Papadias, Public Power Corp., Athens, Greece

WEDNESDAY MORNING, OCTOBER 20

Developments in Distribution Equipment I

Chairman: B. C. Papadias, Public Power Corp., Athens, Greece

Distribution Transformers with Aluminum Windings, A. Halasz, Csepel, Hungary

Today Trends in Distribution Transformers with Aluminum Windings, G. P. Zolotas, B. C. Papadias, Public Power Corp., Athens, Greece

Distribution Cables with Plastic Insulated Solid Aluminum Conductors, G. Kardos, Hungarian Cable Works, Hungary

Static Frequency Converter for Electric Railway, O. Meligren, ASEA, Vasteras, Sweden

The Correct Metering of Electric Energy in Three-Phase High-Voltage Circuits, A. C. De Vries Broekman, Consulting Engineer, Arnhem, The Netherlands

WEDNESDAY AFTERNOON, OCTOBER 20

Developments in Distribution Equipment II

Chairman: K. Muller, AEG-Hochspannungs-Schaltgeratefabrik, Kassel, Germany

Modern Designs of Distribution Components, P. Joss, Brown Boveri & Co., Oerlikon, Switzerland

Functional Switchgear Blocks for Low-Voltage Industrial Distribution, J. Paukert, Switchgear Institute, Brno, Czechoslovakia

High-Voltage Insulation—Enclosed Switcher for 12-kV Distribution Networks, V. Novotny, Switchgear Institute, Brno, Czechoslovakia

Mechanical and Solid-State Contactors for Low-Voltage Application, H. Unterweger, Sprecher and Schuh, Ltd., Aarau, Switzerland

Application of Synthetic Material for Insulation in Railway Electrification and Power Transmission Lines, P. G. Manetti, Rebosio, Italy

The Behavior of an AC Arc Surrounded by a Fine-Grained Medium, P. Huhn, AEG-Hochspannungs-Schaltgeratefabrik, Kassel, Germany

THURSDAY MORNING, OCTOBER 21

Impact of Electronics in Power Distribution I

Chairman: B. Sakic, Brown Boveri & Co., Baden, Switzerland

The Use of the Distribution Network for the Transmission of Information with Particular Reference to Ripple Control, G. Goldberg, Landis and Gyr, Zug, Switzerland

Basic Considerations with Regard to a New

Ripple Control System, E. Baumann, Zellweger Ltd., Uster, Switzerland

Considerations of Different Coding Principles Suitable for Telecontrol Applications, G. Funk, Brown Boveri & Co., Baden, Switzerland

THURSDAY AFTERNOON, OCTOBER 21

Impact of Electronics in Power Distribution II

Chairman: G. Dienne, Laborelec, Belgium

Load-Frequency Control with a Computer, F. Bacher, Brown Boveri & Co., Baden, Switzerland

Application of Supervisory Control Systems and Process Computers in Electric Energy Distribution Networks, R. Lochinger, Landis and Gyr, Zug, Switzerland

Present Problems in Transmission and Distribution Networks in Relation to Modern Computation Facilities, J. J. Morf, A. Germond, E. Kaloussis, EPF, Lausanne, Switzerland

On-Line Optimal Power System Control, author to be announced, University of Sheffield, U.K.

A Selective Electronic Busbar Protection System, P. Harrison, Brown Boveri & Co., Baden, Switzerland

Electronic Generator Protection, J. Gantner, Brown Boveri & Co., Baden, Switzerland

BIOMEDICAL ENGINEERING

TUESDAY MORNING, OCTOBER 19

Responsibilities in the BME Field

Chairman: Ch. D. Ray, Hoffman-La Roche, Basel, Switzerland

BME and the Health Industry, Ch. D. Ray, Hoffman-La Roche, Basel, Switzerland

The Next Generation of BEM Research, H. S. Wolff, Medical Research Council, London, U.K.

Safety and Security, A. K. Dobbie, Department of Health and Social Council, London, U.K.

TUESDAY AFTERNOON, OCTOBER 19

BME Education, Training, and Manpower

Chairman: U. Gessner, Hoffman-La Roche, Basel, Switzerland

History of BME Education in Holland and Current Trends, D. H. Bekkering, Institute of Medical Physics, Utrecht, The Netherlands

Biomedical Engineering in the Neurosciences, G. W. Timm, University of Minnesota, Minneapolis, Minn.

Training of Physicians in Medical Engineering, H. Kuhlendahl, Dusseldorf, Germany; J. Schulze, Dortmund, Germany

A Postgraduate Program at the College of Technology, Buchs, A. Steinemann, Neu Technikum, Buchs, Switzerland

Training Courses at the Institute of Technology, Munich, J. Eichmeier, Institute fur Technische Elektronik, Munich, Germany

Education of the User of Medical Equipment, H. S. Wolff, Medical Research Council, London, U.K.

WEDNESDAY MORNING, OCTOBER 20

Ongoing Research in BME I

Chairman: H. S. Wolff, Medical Research Council, London, U.K.

Scottish Direct Grant-Aided Developments, W. F. Gunn, E. Leask, Scottish Health Department, U.K.

An On-Line Television Computer System for the Study of Microorganisms, J. O. B. Graves, University of California, Santa Barbara, Calif.

An Intensive Care Unit for Pregnancy and Labor, D. M. Serr, Tel Aviv University Medical School, Israel

3-D Color TV System: New Possibilities and Applications in Medicine and in Training, H. Schmickl, Technische Hochschule, Graz, Austria

A Bragg Diffraction Ultrasonic Imaging System for BME Applications, C. J. Landry, University of California, Santa Barbara, Calif.

An Improved Method of Blood Purification, M. J. Mela, Helsinki, Finland

WEDNESDAY AFTERNOON, OCTOBER 20

Ongoing Research in BME II

Chairman: H. S. Wolff, Medical Research Council, London, U.K.

Implanted Microelectronic Devices, Problems, and Some Solutions, P. Donaldson, Medical Research Council, London, U.K.
 Technology for the Optacon, A Reading Aid for the Blind, J. S. Brugler, Stanford Electronics Laboratories, Calif.
 Telemetering Devices for Cardiovascular Parameters, J. P. Dujardin, A. L. Delaunois, J. F. and C. Heymans Institute of Pharmacology, University of Ghent, Belgium
 Thermal Method for Continuous Cardiac Output Measurement, A. L. Delaunois, University of Ghent, Belgium
 Experience in Measurements of Some Gastric Functions With a Ferromagnetic Tracer Material, Y. Benmair, E. H. Frei, Weizmann Institute of Science, Rehovot, Israel; and F. Dreyfuss, B. Fischel, Ichilov Municipal Hospital, Tel Aviv, Israel
 A Study of Sweating in Response to Temperature Changes, Y. Houdas, Centre Hospitalier Universitaire, de Lille, France

THURSDAY MORNING, OCTOBER 21

Health Care Systems I

Chairman: P. Hall, Karolinska Sjukhuset, Stockholm, Sweden
 Information Management in a Modern Clinical Pathology Laboratory, J. A. Magowan, The Queen's University of Belfast, Northern Ireland
 Engineering Aspects of EEG Computer Analysis, L. H. Zetterberg, Royal Institute of Technology, Stockholm, Sweden
 Hybrid Computers for an On-Line Analysis of the EEG, G. H. Byford, Institute of Aviation Medicine, Farnborough, U.K.
 A Portable Health Data Recorder (HDR), P. G. Mansurian, World Health Organization, Geneva, Switzerland; J. D. Nicoud, Swiss Federal Institute of Technology, Lausanne, Switzerland
 GEMSAEC, A New Fast Analyzer for the Clinical Laboratory, P. E. Bucher, F. Hoffman-La Roche, Basel, Switzerland
 On-Line Graphics Display Techniques to Enhance Clinical Utility of Computers in Health Care Systems, I. R. Neilson, Loma Linda University School of Medicine, Loma Linda, Calif.

Health Care Systems II

Chairman: P. Hall, Karolinska Sjukhuset, Stockholm, Sweden
 Information Systems in the Modern Hospital, W. A. Spencer, Texas Institute for Rehabilitation, Houston, Tex.
 Information System in Anesthesia, Intensive Care and Surgery, O. Norlander, Karolinska Sjukhuset, Stockholm, Sweden
 The Future of Medical Information Systems, P. Hall, Karolinska Sjukhuset, Stockholm, Sweden
 Automatic Diagnosis, W. Giere, Deutsche Klinik für Diagnostik, Wiesbaden, Germany

FRIDAY MORNING, OCTOBER 22

Safety Aspects in the Use of Medical Instrumentation

Chairman: A. K. Dobbie, Department of Health and Social Security, London, U.K.
 Electronics and BME Department Serving 120 Hospitals, A. Newtown, Wessex Regional Hospital Board, Winchester, U.K.
 Advantages of Symmetrical Isolation Transformers, A. M. Klomp, J. M. W. Lucas, N. V. Phillips, Eindhoven, The Netherlands
 Some Patient Safety Aspects of ECG Monitors, S. Eriksson, Swedish Planning and Rationalization Institute of Health and Social Service, Stockholm, Sweden
 Ventricular Fibrillation in the Intact Animal When the Metabolic State Is Held Constant, W. R. Lee, University of Manchester, Manchester, U.K.
 Electrical Safety and Electromagnetic Compatibility Applied to Medical Electronic Equipment, G. Ekstrand, Christian Rovsing, Ltd., Copenhagen, Denmark
 The Effects of Ultrasonic Waves on the Fetus, D. M. Serr, Tel Aviv University Medical School, Israel

FRIDAY AFTERNOON, OCTOBER 22

National and International Standards for Medical Instrumentation

Chairman: G. Candardjis, Institut de Radio-

logie Medicale, Hôpital Cantonal Universitaire, Lausanne, Switzerland

Goals for Standardization and Legislation in the Medical Domain, author to be announced

Role of the Research Scientist in the Elaboration of Standards, S. E. Lindell, Clinical Psychological Laboratory, Malmö, Sweden
 Safety Considerations for Electromedical Equipment, A. M. Klomp, J. H. M. Lucas, N. V. Phillips, Eindhoven, The Netherlands
 Comparison of Existing National Standards, G. Gaikhorst, Foegin, Den Haag, The Netherlands

Principles of Legislation for Medical Instrumentation, Schulz, F. Hoffman-La Roche, Basel, Switzerland

How to Establish International Standards for Electromedical Devices, Bertheau, G. Candardjis, GMBH, Hamburg, Germany

ELECTRONIC TIME-KEEPING

TUESDAY MORNING, OCTOBER 19

Oscillators for Electronic Watches

Chairman: R. P. Wellinger, Emarand SA, Neuchatel, Switzerland

Quartz Crystals for Timepieces, A. Seed, Standard Telephones and Cables, Ltd., Harlow, U.K.

System Considerations for the Electronic Watch, J. Mermod, Federation Horlogere, Sainte-Croix, Switzerland

Characteristics of Electromechanical Resonators as Frequency Standards, A. Botta, Lausanne, Switzerland

Electronic Watchmaking—Present and Future, R. P. Wellinger, Emarand SA, Neuchatel, Switzerland

Some Remarks Concerning Flexural-Type Quartz Vibrators for Wristwatches (Quartz Resonators with Good Shock Immunity), A. Greuter, AFIF, ETH, Zurich, Switzerland

TUESDAY AFTERNOON, OCTOBER 19

Circuits for Electronic Watches I

Chairman: M. Forrer, Centre Electronique Horloger SA, Neuchatel, Switzerland

Survey of Circuitry for Wristwatches, M. Forrer, Centre Electronique Horloger SA, Neuchatel, Switzerland

Semiconductors in Precision Electronic Timepieces, J. Horni, D. Bingham, Intersil, Inc., Cupertino, Canada

Recent Progress in the Low Threshold CMOS Circuitry, I. A. Lesk, Motorola Semiconductor Phoenix, Ariz.

Bipolar Micropower Circuits for Crystal Controlled Watches, W. Thommen, H. Ruegg, Faselec AG, Zurich, Switzerland

Logic Circuit for the Wristwatch, E. Vittoz, W. Hammer, M. Kiener, D. Chauvy, Centre Electronique Horloger SA, Neuchatel, Switzerland

WEDNESDAY EVENING, OCTOBER 20

Circuits for Electronic Watches II

Chairman: M. Forrer, Centre Electronique Horloger SA, Neuchatel, Switzerland

Cosmos Circuits for Watches and Clocks, C. Johnson, RCA, Sunbury, U.K.

Bipolar Micropower Frequency Divider for Wristwatches, A. Greuter, AFIF ETH, Zurich, Switzerland

WEDNESDAY MORNING, OCTOBER 20

Displays for Electronic Watches

Chairman: R. P. Wellinger, Emarand SA, Neuchatel, Switzerland

Design Considerations for a Solid-State Timepiece, M. John, Hamilton Watch Co., Lancaster, Pa.

Introduction to the Chemistry of Liquid Crystals for Display, Scherrer, Hoffman-La Roche, Basel, Switzerland

Optoelectronic Display: Key to the Future of Electronic Watchmaking, R. P. Wellinger, Emarand SA, Neuchatel, Switzerland

An Ambient Powered LED Display, R. Vuilleumier, Centre Electronique Horloger SA, Neuchatel, Switzerland

Driving Circuits for Liquid Crystal Displays, M. S. Buser, Hoffman-La Roche, Basel, Switzerland

WEDNESDAY AFTERNOON, OCTOBER 20

Time and Frequency Standards

Chairman: J. De Prins, Université Libre de Bruxelles, Belgium

Power Spectrums and Frequency Stability, J. de Prins, G. Cornelissen, Université Libre de Bruxelles, Belgium

Primary Time and Frequency Standard, J. Becker, T. Fischer, G. Kramer, and K. Müller, Physikalische Technische Bundesanstalt

Power and Line Relations in Atomic Beam Tubes, P. Kartaschoff, LSRH, Neuchatel, Switzerland

A Model for Flicker Frequency Noise of Oscillators, J. Rutman, J. Uebbersfeld, Laboratoire de l'Horloge Atomique, Paris, France
 The BIH Time Scale, B. Guinot, M. Granveaud, Bureau International de l'Heure, Paris, France

Automatic Measurement Systems for Oscillator Frequency Stability, J. Gros Lambert, Section de Besançon du Laboratoire de l'Horloge Atomique du CRNS, France

COMPUTER APPLICATION AND CONTROL

TUESDAY MORNING, OCTOBER 19

Computers

Chairman: to be announced

A Method for Automatic Segmentation of Jobs in Multiprogramming Computer Systems, M. Sami, F. Tisato, Politecnico di Milano, Italy

A General Purpose Optimizer, J. Christoffersen, The Technical University of Denmark, Lyngby Denmark

Dynamic Methods for Automatic Fault Detection in Continuous Linear Systems, R. F. Garzia, Computer Science Corp., Alabama

TUESDAY AFTERNOON, OCTOBER 19

Computer Applications

Chairman: to be announced

On the Use of Three-Dimensional Search in Stochastic Optimization, G. Kjellström, Telefon AB LME, Stockholm, Sweden

A Computer Algorithm for State Table Reduction, R. G. Bennetts, J. L. Washington, D. W. Lewin, University of Southampton, U.K.

Process Identification for On-Line Optimization, C. Aamand, Consulting Engineers Systems Analysis, Denmark

Use of Computers in Information Retrieval, J. Steinacker, St. Cloud, France

Computer Resource Sharing Through Communications Network Technology, F. Don Montgomery, Jr., GE, Md.

WEDNESDAY MORNING, OCTOBER 20

Computer-Aided Design

Chairman: to be announced

SIGPAK I—A Computer Graphics System for Computer-Aided Design I, G. Tollet, Stansaab Elektronik AB, Barkarby, Sweden

Elimination of Package Effects from Scattering Parameter Measurements by Means of the Computer Program ELIM, K. Reitz, Siemens AG, Munich, Germany

Computer Graphics in an Integrated CAD System, H. U. Lemke, Plessey, U.K.

SIGPAK II—A Computer Graphics System for Computer-Aided Design II, G. Tollet, Stansaab Elektronik AB, Barkarby, Sweden

Symbolic Network Analysis by Computer, R. Loos, University of Utah

Simple Graphic Display as Man-Computer Interface, K. Mellberg, Stansaab Elektronik AB, Barkarby, Sweden

GENERAL AND TUTORIAL LECTURE PROGRAM

FRIDAY MORNING, OCTOBER 22

The Impact of Technological Progress on Engineering Education

Chairman: R. C. Winton, Mullard, Ltd., London, U.K.

Can Education Stem the Tide of Alienation in Modern Western Society and Today's World in General?, S. E. Diamessis, Nuclear Research Center, Athens, Greece

Long-Distance Communication Facilities for European Education, J. L. Jankovich, Antwerp, Belgium

New Requirements for Telecommunication Engineering Education, H. H. Adelaar, Bell Telephone Manufacturing Co., Antwerp, Belgium

The Use of Computers in Educational Systems, J. Borne, LEP Lemell, Brevannes, France

The Role of Informatics in Engineering Education, J. Hebenstreit, Ecole Supérieure d'Electricité, Paris, France

TUESDAY AFTERNOON, OCTOBER 19

The Role of Professional Engineering Societies in National and International Standardization (panel)

Chairman: to be announced

Existing Standards Activities in IEEE Cooperation Between National Standards Organization and the Professional Engineering Societies

Governmental Interests in a Well-Functioning Standardization Activity

Standardization in Connection with Development of Integrated Markets

International Standardization

TUESDAY MORNING, OCTOBER 19

Tutorial Lectures I

Chairman: to be announced

Statistical Aspects of Insulation Coordination, L. Paris, ENEL, Rome, Italy

Transmission Systems for Long-Distance International Communications, B. M. Dawidziuk, STC, London, U.K.

The Role of CCITT in Development of International Communications, Lalou, CCITT, Geneva, Switzerland

Tutorial Lectures II

Chairman: to be announced

The Use of Electronics in Telephone Subscriber Instruments, A. Boeryd, L. M. Ericsson, Stockholm, Sweden

Modern Concepts of Modulation, F. Kuhne, Siemens AG, Munich, Germany

TUESDAY AFTERNOON, OCTOBER 19

Tutorial Lectures III

Chairman: to be announced

Anthropomorphic Machines—A New Technique of the Future, H. Kleinwachter, Entwicklung und Forschungslabor, Lorrach, Germany

The Principles of Flight Simulation, R. Pagel, LMT, Paris, France

Satellite Navigation, Traffic Control for Ships and Aircrafts, I. Orbeck, Standard Telefon og Kabelfabrik, Oslo, Norway

THURSDAY MORNING, OCTOBER 21

Tutorial Lectures IV

Chairman: to be announced

Analog Signal Acquisition System Using "Flying Capacitor" Solid-State Multiplexer and Related Accuracy Limitations, R. Carli, SNAM Progetti, Milan, Italy; P. F. Manfredi, P. G. Maranesi, Massi, CESNEF Politecnico di Milano, Italy

Coupled Transmission Lines with Nonlinear Terminations, F. J. Furrer, Effretikon, Switzerland

Computer Optimization of E-Plane Resonance Isolators, E. Loute, M. Decretton, Brussels, Belgium

A Novel Design Message for Three Port Circulators, P. E. M. Poulakka, Otaniemi, Finland

THURSDAY AFTERNOON, OCTOBER 21

Tutorial Lectures V

Chairman: to be announced

Problems in Electronic Watchmaking

FRIDAY AFTERNOON, OCTOBER 22

Tutorial Lectures VI

Chairman: to be announced

Sensitivity and Protection of ICs to Over-voltage, J. Iseli, Sprecher and Schuh, Ltd., Aarau, Switzerland

Integrated Circuits—A Revolution in Electronics, O. W. Memelink, University of Technology Twente, Enschede, The Netherlands

WESCON to present 32 technical sessions emphasizing computers and electronics equipment

Thirty-two program sessions now are being finalized for the 1971 Western Electronic Show and Convention, which will be held August 24–27 at the Brooks Hall/Civic Auditorium, San Francisco, Calif.

This year's WESCON, which is structured under the "session unit" system with each session proposed as a package, will present two special blocs of sessions: an eight-session bloc on computer-related subjects, and a six-session bloc devoted to electronics manufacturing.

A special session entitled "The Engineer's Role in the Economic World," organized by John J. Guarrera, Region 6 Director, will include a presentation by President James Mulligan.

Many of the 32 sessions planned will treat problems in employment and managing, marketing trends, medical electronics, communications, and general technology subjects.

William F. Glavin, president of Xerox Data Systems, will deliver a keynote address at the Sponsors Luncheon on August 24 in the San Francisco Hilton Hotel. Mr. Glavin, appointed president of Xerox Data Systems in 1970, was previously associated with IBM for 15 years. Other features of the luncheon will include the presentation of WEMA's Medal of Achievement, the Region 6 Achievement Award, and the IEEE Morris E. Leeds Award.

WESCON's exhibition will be presented in seven categories by product classification: components and microelectronics, computer equipment and information technology, instruments and instrumentation, science system

and communications equipment, solid-state fabrication equipment, electronic circuit packaging, and production and processing equipment.

Approximately 10 percent of total exhibit units will be taken up by non-U.S. companies. This includes 20 from the United Kingdom, 14 from West Germany, 6 from the Province of Quebec, and 20 from Japan.

The complete technical program follows.

TUESDAY MORNING, AUGUST 24

1. Choosing a Minicomputer—The User's Viewpoint

Chairman: Steven A. Erenburg, *Electronic Design Magazine*

Application Dependency, H. Nathan Yagoda, Computran Systems Corp.

Software, Gary Hornbuckle, Applicon Inc., Interface and Peripherals, Robert C. Larkin, U.S. Army Electronics Command

Purchasing the Mini, Frank C. Milstead, Unitech Inc.

Selection Strategies, Robin T. Ollivier, Sierra Data Systems

2. Trends in Vacuum Deposition Technology

Chairman: Scott T. Porter, Varian Associates

Paper titles and authors' names incomplete

3. Automated Testing of MOS Integrated Circuits

Chairman: Frederick Van Veen, Teradyne Inc.

An Innovative Approach to the Testing of MOS on the Production Line, F. Mansfield Young, Teradyne Inc.

Designing MOS for Maximum Testability, A. E. Pound, American Micro-Systems

MOS Test Instrumentation, William Routh, Fairchild Systems

4. Recognizing and Gearing Up for New Electronic Markets

Chairman: Nelson Harnois, Cubic Corp.

Case Histories of Aerospace Companies Who Have Successfully Transitioned from Mili-

tary to Nonmilitary Business, Thomas M. Self, *Business Week Magazine*

Adjusting Internally To Best Serve New Markets, Tom Grady, Cubic Corp.

Your Present Work Force: Retractable or Replaceable?, Paul E. Putney, Korn/Ferry International

Exploring New Markets Represented by Other Government Agencies, Thomas J. Davis, Jr., Mayfield Fund

TUESDAY AFTERNOON, AUGUST 24

5. Peripherals for Minis

Chairman: George King, *Electromechanical Design Magazine*

Paper titles and authors' names incomplete

6. Direct Detection Laser Communications

Chairman: Monte Ross, McDonnell Douglas Astronautics Co.

Laser Modulation Formats for Space Communications, Gary Lee, E. A. Paddon, McDonnell Douglas Astronautics Co.

Acquisition and Angle Tracking of Laser Communications Links, Art Kraemer, Sylvania Electro-Optics

Critical Component Technology for Space Laser Communications, Robert R. Rice, McDonnell Douglas Astronautics Co.

High-Speed Electronics for Laser Communications, Carl Ryan, Motorola

7. Engineer's Role in Economic World (panel)

Chairman: John J. Guarrera, Region 6 Director

8. Current Trends in Inductorless Filters

Chairman: Sanjit K. Mitra, University of California

Pitfalls in State Variable Filter Design, Yu Jen Wong, Brian K. Conant, Burr-Brown Research Corp.

Design of Distributed Active-RC Filters, L. P. Huelsman, University of Arizona

Coupled Resonator Crystal Filters, Desmond F. Sheahan, Charles E. Smith, GTE Lenkurt Inc.

Surface Wave Signal Processing Filters, Joseph Burnsweig, Hughes Aircraft Co.

Practical Digital Filter Structures Using MOS/LSI, Stanley A. White, NAR Microelectronics Co.

WEDNESDAY MORNING, AUGUST 25

9. Exploitation of Available Computer Programs in Electronic Circuit Design

Session Organizer: Ronald Rohrer, University of California

Session Moderator: N. O. Sokal, Design Automation

Simulation Programs, *Richard McNair, Xerox Data Systems; Ronald Rohrer, University of California*
 Optimization Programs, *William Cave, Optimal Systems Research Inc.; Robert Hall, Dean Hall Associates*

10. The Future of Medical Information Systems

Chairman: *Temple W. Neumann, Philco-Ford Health Care Delivery in the '70s—A Preview, Temple W. Neumann, Philco-Ford*
 The Medical Information System: Practice and Prospects—A Hospital Director's View, *B. G. Lamson, M.D., U.C.L.A.*
 Medical Information System: Basic Theology for a Realistic Approach, *J. H. Grossman, M.D., Massachusetts General Hospital*
 Medical Data Input: A Critical Bottleneck, *Warner V. Slack, M.D., Beth Israel Hospital*
 Boundary Conditions: Key Legal, Ethical, and Traditional Medical Constraints on Medical Information Systems, *R. J. Gampbell, M.D., J.D.*

11. Employee Loyalty: A Two-Way Street

Chairman: *Don Hoefler, Electronic News*
 Employment Contracts: Who Is Protected?, *John Larson, Brobeck, Phleger & Harrison*
 Employer Responsibility in a Down Market, *Warren J. Bowles, Fairchild Camera and Instrument Corp.*
 The Ups and Downs of Stock Options, *Charles E. Sporck, National Semiconductor Corp.*
 Putting Together the Benefits Package, *Jack R. Yelverton, Wilkinson, Sedwick & Yelverton*
 Rewarding the Superior Performer, *James F. Riley, Intersil Inc.*

12. Systems Considerations and New Equipment for Microwave Point-to-Point Communication

Chairman: *David Fairley, Lenkurt Electric Co.*
 Paper titles and authors' names incomplete

WEDNESDAY AFTERNOON, AUGUST 25

13. Needs and Trends in Medical Electronics in the '70s

Chairman: *Morton D. Schwartz, California State College*
 Medical Electronics for the 1970s, *Morton D. Schwartz, California State College*
 Automated Multitest Laboratories—Current Needs and Future Potential, *M. F. Collen, M.D., Permanente Medical Group and Kaiser Foundation Research Institute*
 Information Handling Needs for the Intensively Monitored Hospital Patient, *G. I. Hickey, Jr., University of Southern California*
 Exercise Pulmonary Response Testing and Pulmonary Function Testing Using a Time-Shared Computer, *Paul H. Griffith, William L. Beaver, Varian Associates*
 Engineering Productivity in the Delivery of Health Care Services, *Philip A. DeLangis, Verite Scientific Inc.*

14. Present and Future of Automatic Test Languages

Chairman: *R. A. Grimm, Hewlett-Packard Co.*
 Programming Languages for Component Testing, *Milton Collins, Teradyne Inc.*
 The Dialect Concept in ATE Language Design, *Michael Ellis, PRD Electronics*
 ATLAS—Abbreviated Test Language for Avionics Equipment, *T. A. Ellison, United Air Lines*
 Instrumentation Languages for Production and Engineering, *William Ray, Hewlett-Packard Co.*

15. Networks Equipments, and Standards: The Challenge of the Data Communications Explosion

Chairman: *Sheldon Edelman, The Electronic Engineer Magazine*
 An OEM Views the Data-Communications Revolution, *R. F. Dean, IBM Corp.*
 The Challenge of Interactive Computer Networks Today, *Max P. Beere, Tymshare Inc.*
 A Common-Carrier Network for Point-to-Point Switched Data Transmission, *David E. Gour-*

ley, Data Transmission Co.
 Data-Communications Networks: The Need for Standards (speaker to be announced)

16. Turnaround '71, Strategy for the '70s

Chairman: *Frank J. Burge, Precision Monolithics*
 What It Took To Come Out of Chapter XI, *H. D. Tenney, Kinetic Technology*
 The Modern Day '49er, *Robert McGrath, Dynamic Associates*
 Technological Innovation, Emphasis on Improved Performance, *M. B. Rudin, Precision Monolithics*
 Two Plus Two Equals Five, *George Didinger, Intellex*

THURSDAY MORNING, AUGUST 26

17. Instrumentation for Automatic Dynamic Test Systems

Chairman: *Howard W. Mette, Systron Donner*
 Automatic Stimuli Generation, *R. J. Johnson, Datapulse*
 Computerized Waveform Measurements, *Dave McCracken, Tektronix*
 Remotely Controlled Digital Measurement Instrumentation, *Fred Kreiss, Systron Donner*
 Automatic Test Equipment and Its Interface with a Computer or Controller, *G. K. Mercola, Sagetec Corp.*

18. Automatic Manufacturing

Chairman: *Irwin Stern, Circuits Manufacturing Magazine*
 Automatic Testing, *W. C. Sequin, Honeywell*
 Automatic Interconnection of Chip to Circuit, *Richard Faulke, Mech-EI Industries Inc.*
 Automatic Packaging of ICs, *Milton Stoll, Research Instrument Co.*
 Printed Circuit and Multilayer Manufacturing Technology (speaker to be announced)

19. Tomorrow's Programmable Calculators

Chairman: *Rudolf Panholzer, Naval Postgraduate School*
 What Will Be the Design of Tomorrow's Programmable Calculator?, *Robert Watson, Hewlett-Packard Co.*
 What Will Tomorrow's Programmable Calculator Do?, *Ned Chang, Wang Laboratories*
 How Will Tomorrow's Programmable Calculator Fit Into Systems?, *I. Wunderman, J. J. Murray, Cintra/Physics International Co.*
 Who Will Use Tomorrow's Programmable Calculator?, *Henry Pinault, Monroe International*

20. Beam-Lead Technology: Here and Now

Cochairmen: *L. K. Keys, Magnavox Co.; Stanley Stuhlberg, Raytheon Co.*
 Beam-Lead Devices, Availability and Applicability, *F. J. Francis, L. K. Keys, Magnavox Co.*
 Reliability of Beam-Lead Devices, *Jorge Acosta, Hans Legat, Raytheon Co.*
 Beam-Lead Processing for Complementary MOS, *L. W. Murray, Ben Richards, RCA*
 Advanced Bonding, Testing, and Repair of Beam-Lead Devices, *Richard L. Cunningham, Texas Instruments*

THURSDAY AFTERNOON, AUGUST 26

21. Commercial Applications of Automatic Test Equipment

Chairman: *Fred Liguori, Naval Air Engineering Center*
 Commercial ATE Revisited, *David S. Kline, Hewlett-Packard Co.*
 Automatic Test Equipment Design, *P. W. La Clair, J. Katsikas, Singer-General Precision*
 AVMOTS—A New ATE Family, *L. H. Bohl, Avco*
 Automated Test of Jet Engine Accessories, *O. T. Carver, RCA*
 Commercial Avionics Test System, *Brian Pennington, Martin Marietta*

22. Computer-Aided Manufacturing

Chairman: *T. P. Rigoli, EDN/EE*
 How Not To Approach Computer-Aided Manufacturing, *C. E. Coffee, Autologic Inc.*
 Cam Software: Inputs Required and Outputs Produced, *P. R. LaBahn, Standard Logic Inc.*

Economic Advantages of Integrating Standard DIP Hardware with Flexible Software, *Donald Miller, Scanbe Manufacturing Corp.*
 New Vistas for CAM, *W. O. Fordiani, ECCO*
 CAM—A User's Viewpoint, *M. J. Mendelsohn, Raytheon Co.*

23. Computer-Aided Design of High-Frequency Circuits

Session Organizer: *Less Besser, Fairchild MOD*
 Session Chairman: *Alan B. Grebene, Signetics Corp.*
 The Computer-Aided Design of an L-Band Phase Shifter, *Ted W. Houston, Texas Instruments*
 A Medium-Power VHF Amplifier with PNP-NPN Complementary Symmetry Transistors, *Les Besser, Fairchild*
 Hybrid Integrated Wide-Band Linear Power Amplifiers for S- and C-Bands, *A. Presser, H. Huang, R. Paglione, H. Johnson, RCA*
 Performance and Reliability of Transistors in Power MICs, *Georg Luettgenau, R. E. Hejmanowski, TRW*

24. Optoelectronics

Chairman: *L. Merrill Palmer, Centralab*
 Optoelectronics Measurements, *Al Seck, Centralab*
 Light-Emitting-Diode Reliability, *Lin Wetterau, Walter Gill, Texas Instruments*
 Optical Character Recognition—A Status Report, *Duane Baxter, IBM Corp.*
 Optical Memories, *Bruce Ballard, Optical Memory Systems*

FRIDAY MORNING, AUGUST 27

25. Hybrid Manufacturing

Chairman: *Irwin Stern, Circuits Manufacturing Magazine*
 Thin-Film Advances, *Ralph Ponce de Leon, Sloan Microelectronics*
 Thick-Film Advances, *L. Coronis, Industrial Reproductions Inc.*
 Advances in Interconnection Techniques, *Richard Fritz, Radiant Energy Systems*
 Advances in Thick-Film Materials, *Lewis Hoffman, E. I. du Pont Co.*

26. Microwave Solid-State Devices

Chairman: *Richard W. Soshea, HP Associates*
 IMPATT Diodes: Technology and Applications, *A. M. Cowley, Hewlett-Packard Co.*
 Review of Gunn Effect Devices, *F. Beringer Fank, Varian Associates*
 Transistors for the Era of Microwave Communication, *Sanehiko Kakihana, Hewlett-Packard Co.*
 Microwave Acoustic Devices for High Data Rate Processing, *Donald B. Armstrong, Litton Industries*

27. Mobile Radio in the '70s: Spectrum Utilization and Vehicle Locating

Cochairmen: *D. C. Cox, D. O. Reudink, Bell Labs*
 Modelling the Urban Propagation Medium, *G. L. Turin, University of California*
 The Accuracy of Vehicle Location by Trilateration in a Heavily Built Up Urban Area, *H. Staras, S. N. Honickman, RCA*
 Some Effects of Rayleigh Fading and Diversity on FM Cochannel Interference, *R. E. Langseth, Bell Labs*
 Dynamic Channel Assignment in Multi-Channel Mobile Communications Systems, *D. C. Cox, D. O. Reudink, Bell Labs*

28. Ion-Implantation Technology for Microelectronics

Chairman: *James A. Marley, Signetics Corp.*
 Ion-Implanted Complementary MOS Technology, *L. O. Bauer, P. J. Coppen, H. G. Dill, Hughes Aircraft Co.*
 Precision Ladder Networks Using Ion-Implanted Resistors, *H. H. Stellrecht, Signetics; D. S. Perloff, J. T. Kerr, Corning R&D Lab*
 Applications of Ion-Implanted Depletion Loads to MOS Large Scale Integration, *Gordon Hoffman, Mostek Corp.*
 Particle Accelerators for Ion Implantation, *J. N. Cecil, N. A. Bostrom, Accelerators Inc.*

FRIDAY AFTERNOON, AUGUST 27

29. Micropower Microelectronics

Chairman: A. G. Thiele, *Motorola*

Micropower Active Filters for VHF Applications, W. W. Gaertner, F. K. Weinert, W. W. Gaertner Research Inc.

Integrated Circuits for Medical Applications, J. D. Meindl, P. H. Hudson, D. M. DiPietro, *Stanford University*

Low-Power Digital Frequency Synthesis Application Demonstrates Unique CMOS Performance Characteristics, R. E. Funk, *RCA*
Silicon-Gate CMOS in Micropower Digital Systems, J. W. Foltz, *Motorola*

30. Computer-Aided Translation Using Time-Shared Systems

Chairman: R. E. Puckett, *University of Kentucky*

Computer Braille Translation at the Atlanta Public Schools, Marion P. Boyles, *Atlanta Public Schools*; Robert E. Lagrone, *IBM Corp.*

An Automated Braille Translation System, R. L. Haynes, *American Printing House for the Blind*

The Development of a Computer Grade 2 Braille Translation Algorithm, Lois C. Lefler, *Argonne National Laboratory*

Enhancement of Grade 2 Braille Translation, E. L. Steele, R. E. Puckett, *University of Kentucky*

31. Electrooptic Memory, Image Storage, and Display Devices

Session Organizer: Cecil E. Land, *Sandia Labs*

Session Chairman: John C. Crawford, *Sandia Labs*

Electrooptic Ceramic Materials, Gene H. Haertling, *Sandia Labs*

Ceramic Electrooptic Properties and Devices, Philip D. Thacher, Cecil E. Land, *Sandia Labs*

Electrooptic Devices Using Strain-Biased PLZT Ferroelectric Ceramics, J. R. Maldonado, *Bell Labs*

The Application of Ferroelectric Materials in Optical Memories, G. W. Taylor, *RCA*

32. Air Pollution Control: Where We Are and Where We Are Going

Session Organizer: Julia T. Apter, M.D., *Presbyterian-St. Luke's Hospital*

Session Chairman: Charles H. Wells, *Systems Control, Inc.*

Federal Plan for Development of Instrumentation and Methods for the Measurement of Air Pollution, Rene Bertrand, M.D., *Esso Research and Engineering Co.*

Measurement and Control of Regional Air Quality, Milton Feldstein, M.D., *Bay Area Air Pollution Control District*

Correlation Spectroscopy and Its Applications to Remote Sensing of Ambient Air Quality, Anders Jepsen, M.D., *Environmental Measurements Inc.*

Investigations on the Application of Microwave Spectroscopy to Air Pollution Monitoring, J. Hearn, *Hewlett-Packard Co.*

Development, Verification, and Application of Regional Air Pollution Models, C. H. Wells, M.D., *Systems Control Inc.*

Ultrasonics symposium needs papers by September

Papers are being solicited for the 1971 IEEE Ultrasonics Symposium (G-SU), to be held December 6-8 at the Carillon Hotel, Miami Beach, Fla.

Papers on new discoveries, recent advances, new devices, and applications in all areas of sonics and ultrasonics are wanted. Industrial ultrasonics, biological and medical ultrasonics, elastooptic interactions, physical acoustics, materials, continuum mechanics, and lattice dynamics are included.

The original and one copy of a one-page abstract should be sent to H. Matthews, Sperry Rand Research Center, 100 North Road, Sudbury, Mass. 01776, by September 1.

Authors of contributed papers may submit an additional information supplement of up to 500 words to assist the program committee in its evaluation of the abstract.

The call, final call, and advance program are automatically mailed to all members of the IEEE Group on Sonics and Ultrasonics. Nonmembers may obtain the advance program by requesting one from Dr. Matthews at the foregoing address by August 15.

Magnetics conference issues call for papers

A call for papers has been issued for the 17th Annual Conference on Magnetism and Magnetic Materials (G-MAG, American Institute of Physics), to be held November 16-19 at the Sheraton Hotel, Chicago, Ill.

Papers are solicited in all branches of magnetism including theory of magnetism; magnetic phenomena and magnetic interactions; theory and experiment; new magnetic materials, properties, and synthesis; and characterization and applications of magnetic components and systems.

Authors should submit 200-word abstracts by August 5 to H. C. Wolfe, American Institute of Physics, 335 E. 45 St., New York, N.Y. 10017. Papers should be appropriate to 10-15-minute presentations. Each paper should fit into one of the following categories: general theory, soft thin films, optical effects and magneto-optics, rare earth metals and alloys, hard magnetic materials, soft magnetic materials, transition metals and alloys, resonance and relaxation, NMR and Mossbauer effect, magnetic structure and neutron diffraction, oxides and compounds, exchange enhancement and dilute alloys, domains and domain walls, microwave devices and materials, critical phenomena, anisotropy and magnetoelastic effects, magnetic recording devices and materials, or interdisciplinary and other subjects not listed.

Program set for national transportation conference

"Emerging Transportation Technologies and Issues" is the theme of the National Transportation Engineering Meeting (ASCE, ASME), to be held July 26-30 in Seattle, Wash.

More than 200 authorities from the United States and many foreign countries will present technical papers on topics such as road vehicle systems,

sociopolitical impact, intercity rail transport, air transportation facilities, waterways and harbors, simulation and control, urban transportation planning, and freight systems technology.

Special nontechnical sessions on professional activities, which are expected to benefit those engaged in developing and improving all phases of transportation, will also be conducted. Field trips will include tours of the Boeing 747 Assembly Plant, a cruise on the paddlewheeler "Preston," and a water tour of the Seattle harbor.

There will be several prominent speakers including John E. Hirten, Deputy Assistant Secretary for Transportation Environment and Urban Systems; William H. Moore, president of Penn Central Transportation Company; Senator Warren G. Magnuson; and James M. Beggs, Undersecretary of the Department of Transportation.

Nuclear science meeting schedules sessions

The 1971 Nuclear Science Symposium (G-NS, Atomic Energy Commission, NASA) will be held November 3-5 at the Sheraton-Palace Hotel, San Francisco, Calif.

The symposium will feature sessions on low-level environmental radionuclide analysis systems, nuclear techniques in environmental research, nuclear techniques in biomedicine, data acquisition and processing, radiation detectors and circuits, reactor control and operation, plasma instrumentation and fusion power, nuclear instrumentation, and space physics instrumentation. There will also be a special plenary session emphasizing environmental problems.

Although the paper deadline was June 15, outstanding postdeadline papers may be sent to Keith A. More, Bendix Corporation, Aerospace Systems Division, 3300 Plymouth Road, Ann Arbor, Mich. 48107.

A symposium on power systems will run concurrently with the Nuclear Science Symposium. Sessions will include reactor operating experience, new trends in reactor control room design, and nuclear standards for 1971.

Correction

The IEEE Computer Society has joined the Switzerland Section and the Group on Audio and Electroacoustics as sponsors of the 1972 International Zurich Seminar on Integrated Systems for Speech, Video, and Data Communications, to be held March 15-17 at the Swiss Federal Institute of Technology. Mention of this in the story on page 110 of the May *Spectrum* was inadvertently omitted.