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INSTITUTE NEWS

Award in International Communication :

The IEEE Award in International Communication in honour of Hernand and Sosthenes Behn was awarded to Mr. Leonard Jaffe, Director of Space Applications Programmes in NASA. Mr. Jaffe was presented with the award for 'his outstanding foresight initiative and competence in developing and executing an experimental programme in communications satellites, and in organising and guiding international participation therein'.

In the field of international communications Mr. Jaffe has been a recognised leader for the past several years. He has been the principal architect of and the spokesman for the communications satellite programme of NASA since the agency was established in 1958. He has played a major personal role in the formulation and execution of the programme, and in organising and directing an international community of experimenters through his leadership of the NASA Ground Station Committee. The experience of these experimental ground stations was a key factor in the early establishment of a commercial communications satellite system. In January 1966 Mr. Jaffe became the Director of Space Applications Programmes in the NASA Office of Space Science and Applications. In this position he is responsible for direction of research and development for communications, meteorological and geodetic satellites, as well as for natural resources efforts, and the study programmes for navigational satellites. Under his direction, programmes were established for the development of the ECHO, RELAY and SYNCOM satellites, and the Applications Technology Satellite series.

Mr. Jaffe is Chairman of the NASA Ground Station Committee, which co-ordinates and plans the co-operative testing of experimental communications satellites. Nations currently participating in this activity with the United States are Brazil, Canada, England, France, Germany, Italy, Spain, the Scandinavian countries, Japan and India.

Major Change in Radio Spectrum Engineering :

Results of a comprehensive four-year study by over 200 leading U.S. experts in the use of the radio spectrum were reported by the Joint Technical Advisory Committee which is sponsored by the IEEE and the Electronic Industries Association. Details of the study are reported in a new reference volume entitled 'Spectrum Engineering—The Key to Progress' (\$15 from JTAC, 345 East 47th Street, New York).

The paramount recommendation, among many made in the report, is that technical procedures relating to allocation and assignment of the radio spectrum must be markedly changed through the adoption of a spectrum engineering philosophy and system design concept which will lead to the establishment of the 'next generation' spectrum engineering system. To do so will involve creating and maintaining many new sources of technical information concerning the way in which the spectrum is or can be used. These sources in turn will be incorporated in a highly sophisticated data processing system which will ultimately permit assignment of appropriate frequencies to users with a degree of flexibility which is unattainable using present day techniques.

As a step toward establishing the 'next generation' spectrum engineering system, the JTAC recommends the formation of a 'pilot project' which would put the recommended frequency selection concept into experimental operation in a trial region. In addition, the Committee felt that new and improved spectrum

engineering analytical capabilities should be developed as quickly as possible and put into effect at the national level in the field, and in the 'pilot project'.

Other areas which the JTAC felt required immediate attention were: improvement in spectrum monitoring capability to measure usage and to identify and help prevent interference; improvement in the information data base capability by standardizing terms, detailing and then implementing the data base, through a co-ordinated data collection activity; and improvement of existing standards governing receiver susceptibility and unintended radiation from many classes of devices and equipment as well as developing new standards when needed.

In addition, the JTAC saw a distinct need for increasing our knowledge of man-made radio noise and its effects as a concomitant research and development effort as a part of the development of a total spectrum engineering capability.

The JTAC also recommended that much further study and emphasis be given measurement and research programmes in the area of 'side-effects' (reactions in nature and man-made products which are incidental to the intended effects) through the establishment of an inter-disciplinary co-ordinating body.

Details of the 'pilot project' are given in the volume.

Methods for Structuring Large Systems :

Scientists from East and West contrasted new methods for optimising large systems at the IFAC Optimal Systems Planning Symposium in Cleveland, Ohio from 20th—22nd June 1968. Delegates from Bulgaria, Czechoslovakia, California, England, Mexico and the U.S.S.R. disclosed new approaches by which large economic, industrial and possibly defence systems can be designed to produce the most effective results at the least cost. Not unexpectedly, the representatives from the eastern countries were concerned with planning of state economic functions and industrial complexes, while the representatives from the western countries were more concerned with maximising the rentability of industrial and educational undertakings.



Mr. C. R. Russell, Secretary/
Treasurer, Region 8

In the opening remarks the similarity of the methods irrespective of their ultimate application was pointed out. Examples were cited in which methods developed for defence, industrial and commercial applications could be transferred with little change. Dir. Jiri Benes, from the Institute for Information Theory and Automation, Praha, Czechoslovakia, in his paper entitled 'Probabilistic Planning of the Spread of Means in an Inter-connected System', developed models whereby he could determine the best way of introducing catalysts into production processes for large inter-connected systems. The paper by Dr. D. W. Gillings, of Imperial Chemical Industries Ltd. of Reading, England, 'Evaluation of Profitability of Industrial Production Supported by R & D Activity', developed a model for the seeding of research funds in the profit-building of a large chemical complex. Chairman Hollander pointed out the similarity of characteristics, if one visualised the stimulating research funds as a catalyst in accordance with the paper presented by Dr. Benes.

Mr. A. E. Eulberg, of Gulf General Atomic Inc., of San Diego, California, in his paper, 'Soft Decision Engineering', contrasted how some business decisions must be made with less than complete information and assessed the risk and cost related to decision-making with incomplete information. I. Popchev, of the Institute of Engineering Cybernetics of the Bulgarian Academy of Sciences in Sofia, Bulgaria, in his paper, 'On the Behaviour and Evaluation of the Efficiency of a Class of Large-Scale Systems', formulated methodical relationships for hierarchical systems. Paul Alper, of the National Polytechnic Institute in Mexico City, Mexico, applied his decision-making and optimization process to the educational policies for a State. Probably the most ambitious paper entitled 'To the Question of Functioning of the Economy of a Union Republic in the All-Union System of Planning and Regulation', by A. N. Pirmukamedov, of the Institute of Cybernetics of Uzbek, U.S.S.R., attempted to address the planning of an entire economic unit, namely one of the States of the U.S.S.R.

The Optimal Systems Planning meeting was sponsored by the American Automatic Control Council (AACC), the Systems Science and Cybernetics Group of the IEEE and the Systems Engineering Committee of the International Federation of Automatic Control (IFAC).

INTERNATIONAL MEETINGS

The IEEE 1969 International Convention is to be held in New York from 24th to 27th March 1969 and, as in 1968, is to have an all-invited session format. The Chairman of the Technical Program Committee is making special arrangements to solicit invited papers from Region 8.

The entire programme will be assembled via the identification of sessions and session organizers, comprising a well-balanced conference with a wide variety of inter-disciplinary, tutorial, state-of-the-art, and new topics. The session organizers, chosen for their eminent positions in their fields, are given liberty to invite a series of four or five papers (or a panel) to build a session along lines which they establish to cover the assigned session topic. However, many of the session organizers may be more limited in the breadth of personal European contacts than we would like and potential contributors from Region 8 will be sought independently; efforts will be made to shape certain sessions to take best advantage of these contributions.

Suggestions concerning possible authors should be made to the Chairman of the member's Section.

1969 IEEE International Solid-State Circuits Conference is to be held from 19th to 21st February 1969 in Philadelphia. **Both** 35 word abstracts and 300 to 500 word summaries are requested from authors to go to J. H. Wuorninen, Bell Telephone Laboratories, Murray Hill, New Jersey 07971, by 18th October 1968.

1969 International Magnetics Conference (Intermag) is to be held in Amsterdam, Netherlands, from 15th to 18th April 1969. Papers are solicited on all areas of applied magnetics, including magnetic phenomena and super-conductivity. Two page abstracts in English (for details apply Th. Holtwijk, Philips Research Laboratories, Eindhoven, Netherlands) required not later than 1st December 1968 by Dr. U. F. Gianola, Bell Telephone Laboratories, Mountain Avenue, Murray Hill, New Jersey 07974.

First Annual International Geoscience Electronics Symposium will be sponsored by the IEEE from 16th to 18th April 1969 in Washington, D.C.

The purpose of this Symposium is to provide scientists and engineers working in the geoscience area with an opportunity to review current applications efforts and remote sensing techniques that may have future application to the exploration and exploitation of land, sea, air and space.

The Conference Record containing all papers formally published at the meeting may be obtained from the IEEE, 345 East 47th Street, New York, N.Y. 10017, U.S.A. The Catalogue Number is 35 C 86, and it is priced at \$15.

IEEE Information Services Department :

Mr. Howard Falk has joined the IEEE Headquarters in the position of Manager of Information Services Development. He will be working closely with Dr. Howard Tompkins, Director of Information Services, on the publication of Electrical and Electronics Abstracts, the improvement of IEEE indexes, and the origination of new information services.

For the past six years Mr. Falk has been Associate Editor of 'Electro-Technology' magazine in New York.

The Information Service Department has the assignment of meeting the growing information retrieval needs of the IEEE membership through modern computer-based and manual information systems and is developing new techniques of technical indexing, using the talents of IEEE authors and editors to assist in the process.

1969 IEEE G-MTT International Microwave Symposium is to be held in Dallas, Texas from 5th to 8th May 1969.

Papers are solicited and authors should submit five copies each summary and abstract by 3rd January 1969. Specifications are—summary: 500-1,000 words, illustrations: 6 maximum; abstract: approximately 200 words with no illustrations. Summaries and abstracts should be mailed to J. B. Horton, Chairman, Technical Programme Committee, Texas Instruments Inc., M.S.—905, P.O. Box 5012, Dallas, Texas 75222.

1969 IEEE International Communications Conference will be held from 9th to 11th June 1969 in Boulder, Colorado, with the theme 'Communications Needs for the Next Decade'. Authors are requested to submit either formal papers (for 20 to 30 minute presentation) or informal papers (for 8 to 10 minute presentation). The manuscript of the formal papers is required to be between 2,000 and 4,000 words, including symbols and equations. A 50-word abstract should be included, and up to 8 captioned photographs or drawings are acceptable. Informal papers will be selected on the basis of a 250-word abstract. The author's name, affiliation, complete return address and telephone number should appear on the first page, and his name should appear on all succeeding pages and figures. Five clear copies of all material should be forwarded by 1st January 1969 to the Technical Programme Chairman: Dr. Martin Nesenbergs, Environmental Science Services Administration, Institute for Telecommunication Sciences, R614, Boulder, Colorado 80302, U.S.A.



Ir. H. Rinia, Past Director and Region 8 Member of the Fellow Committee

International Convention on Educational and Training Technology (CETT 69) will be held in London, England from 2nd to 6th September 1969 to survey the application, development, techniques and evaluation of systems and aids in the field of education and training. The Conference, which will be associated with an exhibition, will be organised by the IEE in collaboration with the IEEE (U.K. and Republic of Ireland Section), and the Institution of Electronic and Radio Engineers. Further details may be obtained from The Institution of Electrical Engineers, Savoy Place, London, W.C.2.

REGION 8 NEWS

Membership in Region 8 :

Out of a total membership in the Region of nearly 4,500, all but 250 are resident in countries which have active Sections. The remaining 250 are distributed among 17 countries, with 10 countries each having less than 10 members. Only four of the

remaining 7 countries have more than 20 members, so that there is little possibility of new Sections being formed until membership increases considerably in these countries, except in Turkey and Finland where there are sufficient members to consider the possibility of Sections in the fairly near future. Those who have brought Region 8 to this stage of development must feel justifiably proud of their efforts.

Meetings in the Region :

Sixteenth International Scientific Congress on Electronics : to be held in Rome from 24th to 27th March 1969, has the theme 'Electronic Data Processing'. Papers may cover both hardware and software under their technical, economic and organizational aspects. Abstracts of at least 300 words required by 20th December 1968; full details of requirements, etc., from the Secretariat (Via Crescenzo 9, 00193, Rome, Italy).

1969 Conference on Computer Aided Design is to be held at the University of Southampton, Hampshire, England, from 15th to 18th April 1969 and is being sponsored by the Institution of Electrical Engineers (Control and Automation Division), The Institution of Electronic and Radio Engineers, the Institution of Mechanical Engineers, the Institute of Electrical and Electronics Engineers (United Kingdom and Republic of Ireland Section) and the University of Southampton.

The Conference will cover all aspects of engineer-oriented computer programmes and other topics relevant to computer aided design, automation hardware, software, application programmes and other problems apposite to computer aided design in engineering. The scope will include on-line applications whereby there is a direct link between engineer and computer during the design process, the application of techniques such as graphics, information retrieval, man-machine communications, etc., and also off-line engineer-oriented programmes of a general nature that could possibly be modified for on-line operation.

Offers of contributions of up to 3,000 words are invited for inclusion in the conference programme and synopses of about 250 words are required to be sent to The Institution of Electrical Engineers, Savoy Place, London, W.C.2, England. Full texts will be required for consideration by 15th November 1968.

Section/Group Relations :

Much thought has been given to creating efficient channels of communication between Sections in the Region and Groups. Sufficient Chapters are not likely to exist for some time for this arrangement to provide a complete solution and meanwhile encouragement is to be given to Section Chairmen to appoint 'Section Group Co-ordinators' for Group fields in which there is Section interest, but at a level too low to justify the formation of a Chapter.

Continuing Education :

The following extract comes from the report to the last meeting of the Region 8 Committee on the Education Activities Board (EAB):—

Because of the holiday period, a number of Contributing Editors have specifically said that there is nothing to report from their Sections.

DENMARK :

An application to form a Denmark Section has been approved by the Executive Committee and proposed By-laws will be prepared.

GERMANY (WEST) SECTION :

Activities of the Germany (West) Section are—

Seventh International Conference on Microwave and Optical Generation and Amplification (MOGA) :

16th to 20th September 1968, University of Hamburg (F. R. Germany), sponsors: Germany (West) Section IEEE; Nachrichtentechnische Gesellschaft im VDE (NTG); Verband Deutscher Elektrotechniker, Hamburg Section (VDE); details available from: H. H. Burghoff, 6 Frankfurt/Main 70 (F. R. Germany), Stresemann Alle 21, VDE-Haus.

Members Meeting :

26th September 1968, Technical University of Berlin, in connection with the 55th VDE General Meeting 1968 (only for members of the Germany (West) Section).

Microwave Technique :

12th to 14th March 1969, Köln (F. R. Germany), sponsors: Germany (West) Section IEEE; Nachrichtentechnische Gesell-

The E.A.B. is giving more attention to continuing education than to any other subject.

(a) 14 slide-tape lectures have been prepared in a planned tutorial series of 20 on micro-electronics. All Sections have been sent details. Available on free loan for one month for assessment. Applications to Mr. J. M. Kinn at Headquarters. Only 5 sets of each have been made, so there may be a delay in supplying. E.A.B. are anxious to have suggestions on other subjects for slide-tape lectures. Proposals to Mr. Kinn, please.

(b) Self-Study guides of say 10-12 pages are under consideration. They would guide the reader through the relevant parts of various named books, articles, etc., so that he could break into a new field. Sections should advise Mr. Kinn—

(1) of suitable books, articles, etc., to which the guide could refer.

(2) of suggested subjects for these guides. The E.A.B. believes mathematics, as a tool subject, should have high priority.

(c) The E.A.B. is thinking about the provision of video-taped lectures. The tapes could be provided to suit particular video tape-recorder characteristics. Sections are asked to advise Mr. Kinn—

(3) Whether there is sufficient access to video tape-recorders in their Section to make these tapes useful.

(4) What tape characteristics they are likely to require.

(d) The E.A.B. believes that continuing education can be provided from courses already arranged in Section areas. Sections should advise Mr. Kinn—

(5) If suitable courses exist.

(6) Whether courses are accessible to the bulk of the members in the Sections.

(7) Whether it would help continuing education activities in a Section if a consolidated list of these courses in that Section were available.

(8) If so, whether the Section can compile such a list, or would like help from Headquarters in doing so.

The E.A.B. cannot do a realistic job on continuing education without feedback from Sections. The Region 8 representative on the E.A.B. appeals to you to do your best to reply to as many of the foregoing questions as you can to the Secretary of your Section and to send in any other ideas which you believe would help the E.A.B.

NEWS OF THE SECTIONS

schaft im VDE (NTG); URSI Commission VI 'Radio Waves and Circuits'; Verband Deutscher Elektrotechniker, Köln Section (VDE); details from H. H. Burghoff, 6 Frankfurt/Main 70 (F. R. Germany), Stresemann Allee 21, VDE-Haus.

Semi-Conductor Device Research :



Professor F. E. Borgnis,
Director-at-large

24th to 27th March 1969 (Note: The date of this meeting (announced in Region 8 Newsletter No. 3, for April 1969) has been changed. The meeting will now take place in March 1969.), Muenchen (F. R. Germany), sponsors: Germany (West) Section IEEE, Deutsche Physikalische Gesellschaft (DPG); Nachrichtentechnische Gesellschaft im VDE (NTG); Verband Deutscher Elektrotechniker (VDE); details from H. H. Burghoff, 6 Frankfurt/Main 70 (F. R. Germany), Stresemann Allee 21, VDE-Haus, or K. H. Riewe, 645 Hanau/Main (F. R. Germany), Heraustrasse 12-14, i.H. DPG.

Data Transmission :

25th to 27th March 1969, Mannheim (F. R. Germany), sponsors: Germany (West) Section IEEE; Nachrichtentechnische Gesellschaft im VDE (NTG); Verband Deutscher Elektrotechniker,

Section Kurpfalz (VDE); details from H. H. Burghoff, 6 Frankfurt/Main 70 (F. R. Germany), Stresemann Allee 21, VDE-Haus.

ISRAEL SECTION :

A meeting of the Region 8 Committee is to be held in Tel Aviv on 23rd and 24th October. This will follow the Annual Convention which is being held from 20th to 22nd October.

NORTH ITALY SECTION :

A Section meeting was held in Milan on 27th June. At this meeting the Chairmen of the Standing Committees (Student Activities, Development and Awards, Membership, Seminar and Publications) were nominated according to the new Section By-laws.

After the meeting samples of the IEEE 'slide-tape lectures' were shown. Recommendations for further improvements have been prepared.

The Section is to sponsor a Symposium on Nuclear Electronics which will take place at Ispra from 6th to 8th May 1969. The IEEE Nuclear Science Group has assured the Section of its collaboration. Contributed papers are desired on the following subjects:— pre-amplifiers for nuclear detectors; amplifiers; shaping, d.c. restoration, baseline shift; problems of time resolution; pulse height analysers; time sorters; computers on line and data reduction in nuclear experiments; statistics in nuclear electronics. The Ispra Nuclear Electronics Symposium will be co-sponsored by CNR (Consiglio Nazionale delle Ricerche); CNEN (Comitato Nazionale dell'Energia Nucleare); AEI (Associazione Elettrotecnica ed Elettronica Italiana); SIF (Societa Italiana di Fisica). The Proceedings of the Symposium will be published by Euratom.

UNITED KINGDOM AND REPUBLIC OF IRELAND SECTION :

Group and Chapters :

The Section is petitioning for permission to form a Professional

Group on Educational Technology, and Chapters on Computers and Engineering Writing and Speech.

The Computer Chapter will be a means of contact with similar Chapters in Region 8 and there is no present intention to arrange meetings. If other Chapters in the Region would like to make contact to exchange ideas, they should contact the Contributing Editor.

Members interested in meetings which may be arranged on educational technology and engineering writing and speech are asked to write to the Section Secretary.

Student Contest :

Undergraduate student members interested in details of the Student Paper Contest are asked to write to Professor E. A. Ash, Section Student Course'or, Department of Electrical Engineering, University College, Torrington Place, London, W.C.1, England.

Conferences :

The Section has been invited to co-sponsor the following conferences:—

Conference on Trunk Telecommunications by Guided Waves, 15th to 17th September 1969;

Conference on Lasers and Opto Electronics, 25th to 27th March 1969;

Conference on Dielectric Materials, Measurement and Applications, April 1970.

Third Solid State Devices Conference, 1969;

Computer Aided Design, 15th to 18th April 1969;

Telephone Switching Techniques, Spring 1969.

Combined IEEE/IEE Lecture on American Bionics, on 5th September 1968, Professor Matthew Kabrisky, who is a Professor of Electrical Engineering at the Air Force Institute of Technology, Ohio, U.S.A., will give a lecture entitled 'American Bionics—an organised endeavour to copy nature with hardware, mostly electronic'.

STUDENT ACTIVITY NEWS

During the last months, contacts with several schools in the Netherlands (Benelux Section) were made by Professor P. Jaspers, S.A.C. Chairman, and Mr. J. D. Lebel, past Regional Director. There is some good hope to start IEEE student activity in this country.



Professor P. G. A. Jaspers,
Chairman, Region 8 Student
Activities Committee



Professor A. S. Vander Vorst,
Deputy Chairman, Region 8
Student Activities Committee

Many European students graduated this year. They should remember that a special benefit of IEEE membership in Regions 8, 9 and 10 is that student members transferring to a higher grade pay dues of fifteen dollars (instead of twenty-five) for the first three consecutive years of membership in the higher grade. Furthermore, a student entering military service retains his student status while in military service (for a period of three years, or longer upon recertification). They should also know that IEEE conference records are made available to all members of Regions 8, 9 and 10 at a 50% discount.

Finally, beside the Student Prize Paper Award, two awards are available to young engineers. The Browder J. Thompson Award is made for the best paper in any IEEE publication by an author (or authors) under 30 years of age at the date of submission of the original manuscript. The Alfred Noble Prize Award is an inter-society award sponsored by four founder societies (American Society of Civil Engineers; American Institute of Mining, Metallurgical and Petroleum Engineers; American Society of Mechanical Engineers; IEEE) and the Western Society of Engineers. This Award is made on the same basis as the Browder J. Thompson one, except that joint authorship is not permissible and the author must be under 31 years of age at the time the manuscript is submitted.

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