Bulletin No 245 Juin 1988

U.R.S.I.

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XXIII General Assembly of URSI

The preliminary announcement for the XXIII General Assembly of URSI, to be held in Prague, Czechoslovakia, from 28 August to 5 September 1990, has been issued by the Czechoslovak Organizing Committee. The Committee is chaired by Professor V. Zima, President of the Czechoslovak URSI Committee and Vice-President of URSI.

The broad areas covered by the Scientific Programme will be as follows:

- Electromagnetic Metrology (electromagnetic measurements and standards, and interaction between electromagnetic fields and biological systems).
- Fields and Waves (electromagnetic theory and practice, including antennas and waveguides).
- Signals and Systems (communication systems and system theory (including circuits); information theory and signal processing (including stochastic problems)).
- Electronic and Optical Devices and Applications.
- Electromagnetic Noise and Interference.
- Wave Propagation and Remote Sensing (including radio-meteorology, radio-oceanography and remote sensing of non-ionized media).
- Ionospheric Radio and Propagation (including ionospheric communications and remote sensing of ionized media).
- Waves in Plasmas.
- Radio Astronomy (including remote sensing of celestial objects).

The Coordinator of the Scientific Programme is Dr.P.Bauer

GUIDELINES AND RULES FOR SPONSORSHIP OF SYMPOSIA BY URSI

SUMMARY

In accordance with the recommendations of the URSI Council (Tel Aviv, 1987), a new set of rules for the sponsorship of scientific meetings has been produced. The text below is a summary of these rules.

I. Modes of Sponsorship

In order to promote its scientific objectives, URSI may sponsor scientific meetings of two kinds:

(a) URSI-generated meetings, which are organised by official bodies of URSI (Commissions, Scientific Committees, Working Groups), maybe with other bodies as co-sponsors; these meetings should be particularly encouraged.

Proposals made by Member Committees will also receive consideration, provided the international character of the meeting is duly established.

(b) Meetings which are organised by scientific bodies outside the Union. A necessary condition for URSI to be mentioned as a sponsor or co-sponsor is that the Union is adequately represented in the Programme Committee.

URSI sponsorship may be granted according to three Modes:

Mode A: URSI agrees to be explicitly mentioned as a sponsor or as a co-sponsor. This kind of moral support is granted only if the international character and scientific value of the meeting are ensured, namely through the existence of an appropriate Programme Committee and the appointment of URSI representatives on this Committee. No financial commitment is involved, but URSI will support the meeting by publicizing it in the "Information Bulletin" or the "Newsletter".

Mode B: URSI grants a fixed, unconditional sum. This type of financial support is strictly restricted to cover expenses of key speakers, young scientists or other deserving scientists judged to be in need of financial support. It may not be used to absorb general expenses, and in particular

the expenses incurred for meetings of the Organising and Programme Committees.

Mode C: URSI grants a sum which is to be regarded as a loan. This sum may be used to cover preparatory expenses. It may be combined with an additional fixed unconditional sum to be used in accordance with Mode B.

URSI will not agree to share financial responsibility in an event with a potential deficit. Guarantees about the financial health are taken through the participation of an appointed URSI representative on the financial or organising committee of the meeting. Financial support under Mode C will be granted only if the budget shows that the loan will be reimbursed to URSI. The Union should be adequately associated with profits, if any. In any case, the Union will not be liable for losses exceeding the loan granted under Mode C.

II. Procedure for obtaining general sponsorship

The easiest method is to complete the procedure during a General Assembly. The proposals come from the Commissions and are submitted to the Council for approval.

Such a method does not apply to all meetings, since valid proposals may be submitted by organisers in the period between two General Assemblies. For such cases, the Board of Officers will make the final decision after consultation with the Chairman of the interested Commission.

In both cases approval will depend on a set of conditions, such as:

1. The meeting should have an international character.
2. The scientific level of the meeting should be high enough.
3. For URSI-generated meetings, the approval of the local URSI Member Committee should be sought.
4. The ICSU Rules on the free circulation of scientists should be satisfied.
5. For meetings which are not URSI-generated, the Union should have some control over the scientific content of the meeting through the presence of representatives on the Programme Committee.
6. There should be no conflict with other URSI meetings or, most importantly, with the General Assembly, which must be sufficiently distant in time.
7. The participation of Young Scientists should be encouraged.

III. Procedure for obtaining financial sponsorship

According to the new rules, a fixed sum is allocated to the Chairman of each URSI Commission to support meetings in the field covered by his Commission during the 1987-1990 triennium, including the General Assembly in 1990. The Chairman, in consultation with his Commission, is responsible for the optimal distribution of these funds. His decisions are formally approved by the Board of Officers at its annual meeting. The Board may apply corrections and, if given sufficiently good reasons to do so, it may increase the "fixed sum".

Needless to say, two (or more) Commissions may pool their resources to support a joint effort.

Support under Mode C is a risky operation, which requires careful preparation and adequate post-meeting reporting and accounting. It is kept under strict control by the Board of Officers and the URSI Secretariat.

A more extensive text, together with copies of the Forms to be filled when requesting sponsorship, and reporting on the meeting may be obtained from the URSI Secretariat in Brussels.

URSI Accounts

In accordance with the recommendations of the URSI Standing Finance Committee, the practice of publishing the accounts of the Union annually in *URSI Information Bulletin* is being continued.

The Balance Sheet and the Income and Expenditure Accounts of URSI for the year ended 31 December 1987 are reproduced below. The original accounts have been audited by Van Poyer & Co, Réviseurs d'Entreprises, Brussels, at the end of March.

The assets held in Belgian francs have been converted to US dollars using the UNESCO exchange rate valid at 31 December 1987 ($1 = BF 34.70).

INTERNATIONAL UNION OF RADIO SCIENCE (U.R.S.I.)

BALANCE SHEET : DECEMBER 31, 1987

ASSETS

	$	$
Dollars		
Banque Degroof (restricted)	4,890.00	
Bank of America	28,300.12	
Israël Bank	3,042.00	
		36,232.12
Belgian Francs		
Banque Degroof	2,860.49	
Générale de Banque	681.67	
Transfer	20,000.00	
		23,542.16
Investments :		
Merrill Lynch (1)	37,878.41	
Merrill Lynch (2)	23,713.14	
Philip Morris shares	21,450.00	
Demeter Sicav shares	21,021.10	
Rorento Units	155,078.82	
Merrill Lynch Shares	110,000.00	
		369,141.47
Petty Cash and Stamps :		
Petty Cash	62.45	
Stamps	251.33	
		313.78
Sundry Debtors		
Deposit RTT	293.95	
Merrill Lynch Federal Tax	10,000.00	
		10,293.95
Total Assets		439,523.48
Less creditors		
IUCAF (*)	1,831.23	
427030 - IUWDS (*)	3,754.00	
		5,585.23
Other creditors (*)	7,062.49	
Balth van der Pol Medal Fund (*)	11,806.01	
Audit fees	1,440.92	
Salaries/related charges december 87	6,132.62	
R.R.S. 1987	20,000.00	
		46,442.04
NET TOTAL OF URSI ASSETS		387,496.21

INTERNATIONAL UNION OF RADIO SCIENCE (U.R.S.I.)

BALANCE SHEET : DECEMBER 31, 1987

The net URSI Assets are represented by	$	$
Allocated Reserve Fund :		
General	25,000.00	
Closure of Secretariat	101,826.19	
		126,826.19
Scientific Activities Fund :		
Scientific Activities in 1988	41,700.00	
Young scientists in 1988	4,000.00	
		45,700.00
XXII General Assembly 1987 :		
Printing of Proceedings, vol. XXI		8,700
XXII Général Assembly Fund 1990		
Scientific	60,000.00	
Organization	40,000.00	
		100,000.00
		281,226.19
Unallocated Reserve Fund		106,270.02
		387,496.21

INTERNATIONAL UNION OF RADIO SCIENCE (U.R.S.I.)

BALANCE SHEET : DECEMBER 31, 1987

Statement of Income and Expenditure for the year ended December 31, 1987

	$	$
I. INCOME		
Grant from ICSU Fund		11,000.00
Allocation from Unesco Subvention to ICSU		8,876.00
Unesco Contracts		2,700.00
Contributions from Member Committees		118,720.32
Special Contributions		4,322.76
Sales of publications		306.31
Bank interest and gain on exchange		21,891.46
Other income		10,713.72
		178,530.57
II. EXPENDITURE		
a. Scientific Activities		135,792.55
Général Assembly (XXII)	80,565.99	
Symposia/Colloquia/Working Groups	44,165.76	
Representation at scientific meetings	7,160.80	
Grants to Organizations	3,900.00	
b. Routine Meetings		
Bureau		27,869.09
c. Publications		20,903.71
d. Administrative Expenses		128,054.25
Salaries, Related Charges	78,094.29	
Administrative Travel	7,098.10	
Général Office Expenses	19,982.32	
Office Equipment	10,860.89	
Accounting and Audit Fees	9,103.77	
Bank charges	2,914.88	
e. ICSU Dues		3,530.00
total Expenditure		316,149.60
Excess of Expenditure over Income		(137,619.03)
Accumulated Balance at January 1, 1987		479,792.30
Balance at December 31, 1987		342,173.27
Appreciation of Belgian Franc		45,322.94
Accumulated Balance at December 31, 1987		387,496.21

INTERNATIONAL UNION OF RADIO SCIENCE (U.R.S.I.)

Rates of exchange :

January 1, 1987 : $ 1 = 42.00 BF
December 31, 1987 : $ 1 = 34.70 BF

Observation :

The accounts indicated with (*) are constituted by :

- 50% in shares as indicated below;
- 50 % in US $.

Appreciation in value of investments on december 31, 1987 :

- RORENTO UNITS :	247,152.82
- DEMETER SICAV SHARES :	23,115.22
- PHILIP MORRIS SHARES :	23,694.15

BUREAU INTERNATIONAL DE L'HEURE (BIH)

La 18ème Conférence Générale des Poids et Mesures (CGPM), qui s'est tenue en octobre 1987, a adopté à l'unanimité la Résolution suivante.

"La Dix-huitième Conférence Générale des Poids et Mesures,

considérant l'importance des mesures de temps et en particulier de l'échelle de Temps Atomique International, laquelle a déjà fait l'objet de la Résolution 2 de la Quatorzième Conférence Générale des Poids et Mesures et des Résolutions 4 et 5 de la Quinzième Conférence Générale,

ayant pris connaissance des résolutions adoptées par les Unions internationales concernées, Union Astronomique Internationale, Union Géodésique et Géophysique Internationale et Union Radio-Scientifique Internationale,

rend hommage au Bureau International de l'Heure et à son organisme-hôte, l'Observatoire de Paris, pour la création du Temps Atomique International et pour la qualité des travaux accomplis pour l'établir et le diffuser,

approuve les décisions du Comité International qui ont eu pour effet la prise en charge par le Bureau International des Poids et Mesures de l'établissement et de la diffusion du Temps Atomique International,

et *recommande* aux Institutions nationales concernées de poursuivre avec le Bureau International des Poids et Mesures leur collaboration pour l'établissement et l'amélioration du Temps Atomique International".

L'article ci-dessous, préparé par le Dr. B. Guinot, fait l'historique des activités du BIH au cours des 80 dernières années.

"Le Bureau International de l'Heure (BIH) 1911-1988*

Lors de sa 18e session, en octobre 1987, la Conférence Générale des Poids et Mesures a approuvé la prise en charge

*Extrait du Bulletin d'Information de l'UAI, janvier 1988, No 59.

par le Bureau International des Poids et Mesures (BIPM) de l'établissement du Temps Atomique International (TAI), ce qui était l'une des missions du BIH. Depuis avril 1985, en pratique, le TAI était produit au BIPM.

D'autre part, à la suite des conclusions des groupes de travail MERIT et COTES établis conjointement par l'UAI et l'UGGI, un nouveau Service International de la Rotation Terrestre a été créé et commencera à fonctionner le 1er janvier 1988. Ce service reprendra des activités du BIH sur la rotation terrestre et les systèmes de référence.

Ainsi, en 1988, le BIH cessera d'exister, mais ses travaux seront poursuivis et leur nouvelle organisation leur permettra un meilleur épanouissement pour le bénéfice de la communauté.

Le BIH a été conçu en 1911, avec la mission d'unifier l'heure mondiale. Il aurait dû bénéficier d'un statut intergouvernemental, mais la Première Guerre Mondiale a empêché la ratification de la Convention de l'Heure. Par la suite, on a jugé suffisant de faire du BIH un service international qui a été rattaché à l'UAI en 1919, puis qui a bénéficié du soutien de l'UGGI et de l'URSI. International par ses missions, le BIH était essentiellement français par son financement. Installé dès l'origine à l'Observatoire de Paris, il n'a pu remplir son rôle que grâce à la générosité de cet établissement qui mérite toute notre reconnaissance.

Pendant la plus grande partie de son existence, le BIH n'eut à s'occuper que du Temps Universel (UT1, dans la terminologie moderne) lié à la rotation terrestre. Après l'apparition des étalons atomiques de temps, en 1955, cette activité s'est progressivement transformée en la détermination des paramètres de la rotation de la Terre. La détermination des longitudes, puis des coordonnées géodésiques des stations, intimement liée à ces travaux, a été aussi un thème important des recherches faites au BIH. Voici quelques événements importants de ces activités.

1922 Premier Bulletin Horaire du BIH.

1928 Première détermination de "l'heure définitive" par moyenne des résultats d'observations de plusieurs observatoires (initialement 6, à l'apogée des déterminations astrométriques, le nombre d'instruments participants a atteint 80).

1933 Opération internationale des longitudes. Le BIH reçoit de l'UAI et de l'UGGI la mission de centraliser, discuter et publier les résultats.

1937 Mise en évidence par Stoyko de l'inégalité saisonnière de la rotation terrestre.

1956 Prise en charge par le BIH du Service International Rapide pour la détermination des coordonnées du pôle.

1958 Coordination de la 3e opération mondiale des longitudes, lors de l'Année Géophysique Internationale.

1967 Première solution globale des mesures de temps et de latitude pour obtenir les coordonnées du pôle et UT1, avec une résolution de 5 jours. Réorganisation des publications.

1972 Introduction des mesures issues des techniques de la géodésie spatiale.

1980) 1987) Coordination par le BIH des campagnes des projets MERIT et COTES

1985 Publication de coordonnées de station formant le "BIH Terrestrial System", système de référence géodésique global, qui a été presque aussitôt largement utilisé.

La mise en service, au Royaume-Uni, du premier étalon atomique de temps à césium a ouvert un nouveau champ d'activité au BIH. Les premières échelles de temps atomique, construites au BIH et dans quelques laboratoires, ont d'abord servi à étudier la rotation terrestre et à coordonner l'émission de signaux horaires. C'est le BIH qui a pris l'initiative, en 1965, de lier le temps d'émission des signaux horaires à sa propre échelle de temps atomique, jetant ainsi les bases du système du Temps Universel Coordonné (UTC). Quand les liaisons horaires à grande distance, par le LORAN-C et les transports d'horloges, se sont développées en 1969, les applications des échelles de temps atomiques se sont étendues en astronomie, recherches spatiales, télécommunications et pour les systèmes de navigation et de positionnement. L'accord s'est fait pour que l'échelle de temps du BIH soit l'unique référence mondiale, pour le temps et les fréquences, et pour qu'elle soit la base du système pratique de diffusion du temps suivant le système du UTC.

La reconnaissance ultime de l'échelle de temps atomique

du BIH fut apportée par la 14e Conférence Générale des Poids et Mesures, en 1971, qui lui attribua le nom de "Temps Atomique International", TAI. Cette décision entraînait une coopération étroite entre le BIPM et le BIH et amorçait le transfert de la détermination du TAI au BIPM, évolution naturelle puisque la mesure du temps ne demandait plus rien à l'astronomie et se rapprochait de la mesure des autres grandeurs de la physique.

Les dates importantes de ces travaux sont les suivantes:

1961 Publication du "Temps Atomique Intégré" établi à partir de 1955.

1961 Le BIH est chargé de la coordination des émissions de signaux horaires.

1965 L'émission des signaux horaires est liée à l'échelle de temps atomique du BIH.

1967 L'UAI charge le BIH de maintenir l'échelle internationale de temps atomique qui deviendra en 1971 le Temps Atomique International, TAI.

1969 Grâce aux liaisons intercontinentales par le LORAN-C, l'échelle de temps atomique prend sa forme moderne de moyenne d'échelles de temps locales.

1971 La 13e Conférence Générale des Poids et Mesures définit le Temps Atomique International comme l'échelle établie par le BIH.

1973 Mise en oeuvre de l'algorithme ALGOS du BIH pour établir le TAI par un traitement homogène des données d'horloges individuelles. Le nombre d'horloges participantes était de 50 environ en 1973, il est passé à près de 200 en 1987.

1977 L'exactitude de la fréquence du TAI est assurée par l'emploi des données des étalons primaires de fréquence.

1983 Premier emploi opérationnel des comparaisons de temps par GPS.

1986 Coordination des poursuites des satellites du GPS. Etalonnages de récepteurs du GPS (mission conjointe National Bureau of Standards/BIPM).

1987 Détermination simultanée de positions et de différences de temps par le GPS: les incertitudes des comparaisons de temps s'approchent de la nanoseconde".

x x x

Sous les auspices de l'Académie des Sciences de Paris, le Bureau des Longitudes et l'Observatoire de Paris organiseront le 8 novembre 1988 à Paris une journée scientifique sous le titre:

Le Bureau International de l'Heure: 75 ans au service de l'heure universelle.

Cette journée sera l'occasion de reconnaître le rôle joué par le BIH au cours de ses huit décennies d'activité scientifique au service de la communauté internationale, à l'heure où la relève est prise par le Bureau International des Poids et Mesures et par le nouveau Service International de la Rotation Terrestre.

INTERNATIONAL EARTH ROTATION SERVICE

The International Earth Rotation Service (IERS) was established in 1987 by IAU and IUGG and it started operation on 1 January 1988. It replaces the International Polar Motion Service (IPMS) and the earth-rotation section of the Bureau International de l'Heure (BIH). The activities of BIH on time are continued at the Bureau International des Poids et Mesures (BIPM). IERS is a member of the Federation of Astronomical and Geophysical Data Analysis Services (FAGS). It also cooperates with the BIPM on its activities concerning the UTC time scale and with IAG SSG 5.98 on its activities related to the atmospheric excitation of the Earth's rotation.

The International Earth Rotation Service is responsible for

- defining and maintaining a conventional terrestrial reference system based on observing stations that use the high-precision techniques in space geodesy;
- defining and maintaining a conventional celestial reference system based on extragalactic radio sources, and relating it to other celestial reference systems;
- evaluating the earth rotation for these systems, in particular the coordinates of the pole and universal time;
- organising operational activities for observation and data analysis, collecting and archiving appropriate data and results, and disseminating the results to meet the needs of users.

Initially, it relies on three observing methods: Very Long Baseline Radio Interferometry (VLBI), Lunar Laser Ranging (LLR) and Satellite Laser Ranging (SLR).

The International Earth Rotation Service consists of Coordinating Centres and other technical centres for each of the three principal observing techniques and a Central Bureau with associated Sub-Bureaux. It is supported by many observing stations and general control is exercised by a Directing Board that is made up of representatives of the Unions and the principal centres.

The Coordinating Centres are responsible for developing and organising the activities in each technique to meet the objectives of the service. The Central Bureau combines the various types of data collected by the service, and disseminates to the user community the appropriate information on earth-rotation and the terrestrial and celestial reference systems.

The principal centres are:

- VLBI Coordinating Centre: National Geodetic Survey
  Rockville, MD, USA.
- LLR Coordinating Centre: Centre d'Etudes et de Recherches
  Géodynamiques et Astronomiques
  Grasse, France.
- SLR Coordinating Centre: Centre for Space Research
  University of Texas at Austin, USA.

The address of the Central Bureau is as follows:

Central Bureau of IERS
Observatoire de Paris
61, avenue de l'Observatoire
F-75014 Paris, France.

Telephone : (33+1) 40 51 22 26
Telex : OBS 270776F
G.E.MARKIII : IERS-CB
EARN/BITNET/SPAN : IERS at FRIAP51.

ICSU-TWAS Lectureship Programme

The following announcement has been received from the International Council of Scientific Unions (ICSU) and the Third World Academy of Sciences (TWAS).

"The International Council of Scientific Unions (ICSU) and the Third World Academy of Sciences (TWAS) are pleased to announce the launching of their Lectureship Programme. The general objective of this Programme is to provide scientists in developing countries the opportunity for discussions and scientific collaboration with colleagues from other countries who have made outstanding contributions to the advancement of science.

ICSU and TWAS have compiled a Roster of Lecturers, comprising the names of scientists who have expressed an interest and willingness to participate in this Programme. This Roster will continue to be up-dated as we receive additional names. As can be seen from the list, most ICSU-TWAS Lecturers are prepared to give two types of talks: of a specialized and a general nature.

Under this joint Programme, ICSU and TWAS will finance the travel of the Lecturers to the country or countries which have invited them. Host country institutions will be expected to provide local expenditures for the Lecturers as well as to make all local arrangements.

Should you be interested in hosting an ICSU-TWAS Lecturer, please let either the ICSU or the TWAS Secretariats know of your interest, indicating the name of the Lecturer you have selected from our Roster, and the programme you would like to suggest, including possible dates. ICSU and TWAS will then consider your request and respond to you as soon as possible. A positive response will depend on the availability of travel funds, but we shall send as many Lecturers to developing countries as possible. You may also wish to contact scientists in neighbouring countries to see if they wish to share in your invitation to a Lecturer".

A copy of the Roster is available at the URSI Secretariat. It contains the names of 166 lecturers a few of them specialists in the disciplines covered by URSI.

ANNOUNCEMENTS OF MEETINGS AND SYMPOSIA

14th EUROPEAN CONFERENCE ON OPTICAL COMMUNICATION (ECOC 88)

The 14th European Conference on Optical Communication will be held from 11 to 15 September 1988 at the Brighton Centre, Brighton, United Kingdom. It is being organised by The Electronics Division of the Institution of Electrical Engineers, and co-sponsored by a number of organizations among which URSI.

The Chairman of the Technical Programme Committee is Dr. C.J. Todd (UK) and the Chairman of the Organising Committee is Prof. J.E. Midwinter (UK). URSI is represented on the Organising Committee by Prof. W.A. Gambling, Past Chairman of URSI Commission D on Electronic and Optical Devices and Applications.

In line with its predecess ECOC 88 is intended to provide a major international forum for the dissemination of significant new results on all aspects of optical fibre communications, both scientific and technological. The main emphasis will be on the oral and poster presentation of original unpublished contributions. A limited number of invited papers by recognised experts will provide a review of topics of current interest. The very latest ideas and results will be presented in a post-deadline session.

The intention is to cover a broad range of topics, including those of current interest and those likely to have an impact on future optical fibre systems. Contributions will address themselves to topics related to the theory, fabrication and characterisation of the following:

1. Materials: Materials for fibres, lasers, modulators, detectors, and optical processing including non-linear effects.
2. Passive Components: Isolators, couplers, multiplexers, filters, switches, modulators, connectors, splices, fibre sensors.
3. Active Devices: Sources, modulators, detectors, optical amplifiers, optical memories, devices for coherent transmission, quantum-well and superlattice structures.

4. Fibres and Cables: Linear and non-linear propagation, characteristics, design and fabrication, reliability, coupling, splicing, cable design, fabrication and installation, measurement techniques and test equipment.

5. Optical and Optoelectronic Integration: Waveguides, active and passive devices, hybrid and monolithic integration.

6. Systems and Applications: Intensity-modulated and coherent telecommunication systems, local-area networks (narrow and broad band) and sensors. Systems design, performance, implementation and economics.

In addition there will be two special "highlight" sessions on Photonic Switching and on Intensity-dependent Effects in Fibres respectively.

The deadline for the submission of papers was 8 April 1988. The Programme will include a session of post-deadline papers. These must be received by the ECOC 88 Secretariat before 26 August 1988.

For further information, apply to:

ECOC 88 Secretariat
Conference Services
The Institution of Electrical Engineers
Savoy Place
London WC2R OBL
United Kingdom.

Telephone : (44) 1-240 1871 Ext. 222
Telex : 261176 IEE LDN G
Facsimile : (44) 1-240 7735.

A HISTORICAL TWO-DAY MEETING

GIOVANNI GIORGI AND HIS CONTRIBUTION TO ELECTRICAL METROLOGY

FIFTY YEARS AFTER THE CONFIRMATION OF GIORGI (MKS) SYSTEM

This meeting will be held at the Politecnico di Torino, Torino, Italy on 21 and 22 September 1988. It is cosponsored by the three Electrical Departments of the Polytechnic School, Turin and the Metrology Commission of CNR, the BIPM, the CCIR, the URSI, the CEI (Italian Electrotechnical Committee), the AEI (Italian Electrical and Electronics Association) and the IENGF and IMGC.

The aim of the meeting is to reconstruct the status of electrical metrology at the dawn of this century and to show how the proposals of Giovanni Giorgi in 1901 and in the following years up to the final international acceptance have contributed to the development of metrological science.

The emphasis will be given to reactions and interactions with the thoughts of leading scientists and national schools.

English and French will be the working languages of the meeting; simultaneous translation will not be provided.

The meeting will be open to any person who wishes to attend, but early notification is required.

All correspondence should be addressed to:

Prof. C. Egidi
Dip. Elettronica - Politecnico
Corso Duca degli Abruzzi 24
I - 10129 Torino, Italy.

3rd INTERNATIONAL SEMINAR OF STATISTICAL COMMUNICATION THEORY AND ITS APPLICATIONS - SCT 88

The Third International Seminar of Statistical Communication Theory and its Applications (for countries belonging to the Council for Mutual Economic Assistance - CMEA) will be held in Varna, Bulgaria from 24 to 28 October 1988.

The following topics are included in the scientific programme of the Seminar:

- Information Theory
- Modelling of Signals and Systems
- Coding
- Design and Analysis of Systems
- Communication Networks
- Space-Time Processing of Signals
- Effectiveness and Reliability of Transmission Systems.

The working language will be Russian.

For further information, contact:

SCT '88
Information Centre INFORMA
ul. Tshapayeva 55A
1574 Sofia
Bulgaria.

INTERNATIONAL CONFERENCE ON INTELLIGENT NETWORKS

The International Conference on Intelligent Networks will be held at the Palais des Congrès in Bordeaux, France from 14 to 17 March 1989. It is organised by the Société des Electriciens et des Electroniciens (SEE) in cooperation with a number of French Institutes and Societies, and it is co-sponsored by URSI.

The Chairman of the International Committee is M. M. Thué and the Chairman of the Programme Committee is M. M. Tréheux.

The working languages will be French and English, and simultaneous translation will be provided.

The main topics of the Conference are:

1. Regulatory aspects and standards
2. Large users' needs
3. Intelligence in public networks
4. Intelligence in private networks
5. Value added services and networks, including Videotex
6. Applications of intelligent networks.

Persons willing to present a lecture at the ICIN should submit an abstract of their paper to the conference secretariat before 30 June 1988.

All enquiries should be sent to:

ADERA
B.P. 48
F-33166 St-Médard-en-Jalles Cedex
France.

Telephone: (33) 56 05 84 24
Telefax : (33) 56 51 98 83.

6th INTERNATIONAL CONFERENCE ON ANTENNAS AND PROPAGATION

ICAP 89

The 6th International Conference on Antennas and Propagation will be held at the University of Warwick, United Kingdom, from 4 to 7 April 1989. It is organised by the Electronics Division of the Institution of Electrical Engineers, and co-sponsored by URSI.

ICAP 89 will continue the tradition of past conferences in acting as a major international focus for all aspects of antennas and electromagnetic wave propagation. Review papers will highlight requirements for antenna design and propagation information from new systems developments. Sessions will cover applications oriented studies as well as advances in techniques for analysis and measurement.

The Conference covers topics falling within URSI Commissions B, F, G and H.

Contributions are welcome on Antennas and Propagation topics over the entire radio spectrum from ELF to EHF, as illustrated by the scope shown below.

Antennas and Related Topics

- Adaptive antennas
- Array antennas
- Phased arrays
- Conformal antennas
- Microstrip antennas
- Wideband antennas
- Reflectors and lenses
- Horns and feeds
- Satellite antennas
- Millimetre wave antennas
- ELF to UHF antennas
- Broadcast antennas
- Superconducting antennas
- Antennas for mobile and personal communications
- Radomes
- Measurement techniques
- Mechanical aspects of antennas
- Radio telescopes
- Transient response
- Electromagnetic theory
- Numerical techniques
- Scattering and diffraction
- Domestic DBS antennas
- Frequency selective surfaces
- Others

Propagation and Related Topics

- Ionospheric propagation
- VHF and UHF propagation
- Propagation for mobile and personal communications
- Urban propagation factors
- Tropospheric propagation
- Propagation in fixed services satellite systems
- Propagation factors for mobile satellite systems
- Millimetre wave propagation
- Remote sensing
- Radio and radar meteorology
- Propagation aspects of frequency management
- System planning
- Propagation countermeasures
- Propagation considerations for digital applications
- Propagation simulation
- Others

The deadlines for the submission of contributions are as follows:

Receipt of synopsis (minimum 500 Words)	10 September 1988
Notification of acceptance	October 1988
Receipt of full typescript	16 December 1988.

The working language of the Conference is English.

For further information, contact:

ICAP 89 Secretariat
Conference Services
The Institution of Electrical Engineers
Savoy Place
London WC2R 0BL, United Kingdom.

Telephone: (44) 1-240 1871 Ext.222
Telex : 261176 IEE LDN G
Fax : (44) 1-240 7735.

URSI INTERNATIONAL SYMPOSIUM ON SIGNALS SYSTEMS AND ELECTRONICS (ISSSE'89)

(see French text on page 26)

FIRST CALL FOR PAPERS

The URSI International Symposium on Signals, Systems and Electronics will be held at the University of Erlangen-Nürnberg, F.R. of Germany from 18 to 20 September 1989.

ISSSE'89 is the first of a series of triennial international symposia promoted and organised by URSI Commission C on Signals and Systems and Commission D on Electronic and Optical Devices and Applications. Its aim is to cover all fields of activities of the two Commissions and to promote the exchange of research results between scientists and engineers working in these multidisciplinary fields. Sessions will include regular, invited and tutorial papers. English is the official language of the Symposium. It is intended to supplement the Symposium by a Technical Exhibition. The Symposium is open to all aspects of Signals, Systems and Electronics, particularly:

Signal and Information Theory

- Coding and information theory
- Rate distortion theory and application
- Signal analysis
- Detection and estimation
- Modulation and coding

System Theory

- Adaptive systems
- Nonlinear systems
- Multidimensional systems
- Spread spectrum systems

Communications Systems

- Low bit rate speech coding
- Mobile radio systems
- Digital image processing
- Communications circuits
- Packetised satellite communications

Electronic Devices and Applications

- Silicon transistors and circuits
- III-V transistors and circuits
- Sensors, transducers and SAW devices
- Superconducting devices and circuits
- Microwave circuits
- Switched capacitor filters
- A/D and D/A-converters
- Integrated digital signal processors

Optical Devices and Applications

- Laser and photo detectors
- Fibers and fiber components
- Integrated optics
- Optical communications systems

CAD for Devices and Circuits

- Device modelling
- CAD for integrated circuits.

Submission of Papers:

Prospective authors are encouraged to submit papers - suitable for a 20-minute presentation - in quadruplicate form to the Conference Secretary. The members of the Scientific Committee will decide upon acceptance on the basis of an extended summary of about 4 pages, emphasising the originality and/or the relevance of the subject.

To ensure that submissions receive appropriate review and classification, the authors should declare on a single, separate sheet (headed by the title, author's name and address)

into which of the categories, listed above as areas of interest, the paper fits. If necessary, define a new topic.

Publication of the accepted Papers:

Authors of accepted papers will receive instructions for preparing their final manuscript on special camera-ready sheets for publication in the Conference Proceedings.

Time Schedule:

15 December 1988	Submission of papers
March 1989	Notification of acceptance or rejection
30 April 1989	Submission of final manuscripts to be included in the Conference Proceedings.

For further information, please contact the Conference Secretary:

Mrs U. Arnold, Lehrstuhl für Nachrichtentechnik
Universität Erlangen-Nürnberg
Cauerstrasse 7
D-8520 Eerlangen, F.R. of Germany.

Telephone: (49) 9131-857100
Telex : TFERL 629 755.

URSI INTERNATIONAL SYMPOSIUM ON SIGNALS SYSTEMS AND ELECTRONICS (ISSSE '89)

(Symposium International sur les Signaux, les Systèmes et l'Electronique)

PREMIER APPEL A COMMUNICATIONS

Les Commissions C "Signaux et systèmes" et D "Dispositifs électroniques et optiques et applications" de l'URSI ont décidé d'organiser le Symposium International sur les Signaux, les Systèmes et l'Electronique qui sera le premier d'une série de conférences internationales triennales. Il a pout but de couvrir toutes les activités des deux Commissions et de favoriser

l'échange des résultats de recherche entre les ingénieurs et les chercheurs travaillant dans ces domaines pluridisciplinaires. Les sessions comprendront des contributions ordinaires,invitées et pédagogiques. La langue officielle sera l'anglais. Une exposition technique complètera le Symposium. Le Symposium abordera tous les thèmes intéressant les Signaux, les Systèmes et l'Electronique:

Théorie de l'information - Théorie du signal

- théorie de l'information et du codage
- distortion: théorie et applications
- analyse du signal
- détection et estimation
- modulation et codage

Théorie des systèmes

- systèmes adaptatifs
- systèmes non linéaires
- systèmes multidimensionnels
- systèmes à étalement de spectre

Systèmes de communication

- codage de parole à débit réduit
- traitement numérique des images
- circuits de communications
- communication spatiale par paquets

Dispositifs électroniques et applications

- transistors et circuits silicium
- transistors et circuits III-V
- senseurs, transducteurs et dispositifs à OES (SAW)
- circuits et dispositifs supraconducteurs
- circuits hyperfréquences
- filtres - capacité commutée
- convertisseurs A/N et N/A
- processeurs intégrés de signal numérique

Dispositifs optiques et applications

- lasers et photodétecteurs
- fibres et composants associés
- optique intégrée
- systèmes de communication optiques

CAO des circuits et des dispositifs

- modélisation de dispositifs
- CAO des circuits intégrés.

Soumission des communications

Les résumés, de 4 pages environ, des communications proposées (correspondant à une présentation orale de 20 minutes) devront être adressés en 4 exemplaires au Secrétariat de la Conférence. Les membres du Comité scientifique décideront de l'acceptation en tenant compte de l'originalité et de l'adéquation au thème.

Pour assurer une classification et relecture appropriées des communications, les auteurs devront mentionner sur une feuille unique séparée: le titre de la communication, le nom de l'auteur et son adresse et le domaine d'intérêt - choisi dans les thèmes ci-dessus - où se classe la communication (si nécessaire, un thème supplémentaire pourra être défini).

Publication des communications acceptées

Les auteurs de communications acceptées recevront des instructions pour préparer leur manuscrit définitif sur des feuilles spéciales permettant la reproduction par "camera-ready" dans les Actes de la Conférence.

Calendrier

15 décembre	1988	envoi des propositions de communication
mars	1988	notification de l'acceptation ou du rejet
30 avril	1989	envoi des manuscrits définitifs à inclure dans les Actes de la Conférence.

Pour de plus amples informations, veuillez vous adresser à la Secrétaire de la Conférence:

Madame U. Arnold, Lehrstuhl für Nachrichtentechnik
Universität Erlangen-Nürnberg
Cauerstrasse 7
D - 8520 Erlangen, R.F. d'Allemagne.

Téléphone: (49) 9131/857100
Télex : TFERL 629 755

INTERNATIONAL SCHOOL ON ATMOSPHERIC RADAR (ISAR)

The First International School on Atmospheric Radar will be held in Kyoto, Japan, from 24 to 28 November 1988. It is co-sponsored by URSI Commissions F and G. The Chairman of the Organizing Committee is Professor S. Kato.

Outline and Lecturers

I. Historical Aspects of Radar Atmospheric Dynamics
Lecturer: Prof. S. Kato (Kyoto Univ., Japan)

II. Radar System, Control and Signal Processing

(a) Radar principles
-- Pulse radars, transmitted and received signals, radar cross-section, targets, radar equations, Dopller-beam-swing and spaced antenna-drift methods.
Lecturer: Dr. B.B. Balsley (NOAA, USA)

(b) Radar hardware and control
-- System configuration, antennas, transmitters, receivers, controllers, digital processing, pulse compression.
Lecturer: Dr. J. Röttger (EISCAT Scientific Association, Sweden)

(c) Radar echo characteristics
-- Scattering mechanism, signal statistics, estimation of intensity, resolution, volume weightinh, correlation of echoes in range and sample time, clutter, noise, interference.
Lecturer: Dr. R.F. Woodman (JRO, Peru)

(d) Data acquisition and processing
-- Detection, sampling, integration, spectrum taking, signal-to-noise ratio, range and frequency aliasing.
Lecturer: Dr. T. Tsuda (Kyoto Univ., Japan)

(e) Spectral and correlational analysis
-- ACF, periodgram, Blackman-Tukey method, pulse pair, MEM, spectral distortion, accuracy, moment method, curve fitting.
Lecturer: Prof.P.K. Rastogi (Case Western Reserve

Univ. USA)

(f) Target parameter estimation
-- Estimation of velocity vector, turbulence intensity, atmospheric stability, data screening, data validation.
Lecturer: Dr. W.K. Hocking (Univ. of Adelaide, Australia)

III. Theory, Practice and Applications

(a) Lower and middle atmosphere
Lecturer: Dr. D.C. Fritts (Univ. of Alaska, USA)

(b) Meteorological research applications
Lecturer: Dr. R.J. Doviak (NSSL, USA)

(c) Ionosphere
Lecturer: Prof. T. Hagfors (NAIC, USA).

IV. Conclusion and Discussesion

Chairman: Prof. R.A. Vicent (Univ. of Adelaide,Australia)

Note: Not all Lecturers yet confirmed.

For information and registration materials, write to the Conference Secretary:

Prof. Shoichiro Fukao
Secretary to ISAR
Radio Atmospheric Science Center
Kyoto University
Uji, Kyoto 611, Japan.

HANDBOOK ON RADIO PROPAGATION FOR TROPICAL AND SUBTROPICAL COUNTRIES

The *Handbook on Radio Propagation for Tropical and Subtropical Countries* is the outcome of a recommendation made by URSI, through its Committee for Developing Countries. The book was edited by an international team of distinguished scientists, including A.P. Mitra, B.M. Reddy, S.M. Radicella, J.O. Oyinloye and S. Feng. It is expected to serve as a reference document for countries located in tropical and subtropical regions. This Handbook incorporates fairly representative data on troposphere and ionosphere that have been collected for a number of years in African, Latin American, Indian and Chinese regions. The book deals extensively with propagation in ionized and non-ionized media and should serve as a guide for System Engineers while designing radio links in MF, HF, VHF, UHF and microwave bands.

CONTENTS

Printed on art paper, hard board bound with dust jacket in crown quarto size, 299 pages.

Price: $20.00; Postage extra: Seamail: $5.00;
Airmail: $10.00.

Payment should be made in favour of Director, National Physical Laboratory, New Delhi by bank draft.

Orders for copies, along with payment, should be sent to

Director
(Attention: Dr. D.R. Lakshmi)
National Physical Laboratory
New Delhi 110012
India.

Books Published by URSI Personalities

A.G. TIJHUIS

Electromagnetic Inverse Profiling: Theory and Numerical Implementation

VNU Science Press, 1987; xvi + 466 pages
ISBN 90-6764-093-X.

List of Future Symposia and Meetings

Amendment to List published in
"URSI Information Bulletin" No 243

Page 123, correct entry as follows:

International Geoscience and Remote Sensing Symposium (IGARSS'89), URSI Commission F and 12th Canadian Symposium on Remote Sensing

Vancouver, Canada, 10-14 July 1989.

Contact address: Dr. J.S. MacDonald
MacDonald Dettwiler and Associates
3751 Shell Road
Richmond, B.C.
Canada V6X 2Z9.

Telephone: (604) 278-3411.

List of URSI Officers and Officers of Member Committees: Amendments

Amendments to the List published in No 243 (December) of the "URSI Information Bulletin" are listed below.

1. Member Committees

NEW ZEALAND

President: Prof. W.J. Baggaley, Physics Department, University of Canterbury, Christchurch, New Zealand.

2. Commissions

Commission A on Electromagnetic Metrology

Finland: Ass. Prof. P. Wallin, Helsinki University of Technology, E.E. Department, Laboratory of Electronic Measurements, Otakaari 5 A, SF-02150 Espoo,Finland.

Commission D on Electronic and Optical Devices and Applications

Finland: Dr. M. Leppihalme, Technical Research Centre of Finland, Semiconductor Laboratory, Otakaari 7 B, SF-02150, Finland.

Commission F on Wave Propagation and Remote Sensing

Finland: Prof. M. Hallikainen, Helsinki University of Technology, E.E. Department, Space Technology Otakaari 5 A, SF-02150 Espoo, Finland.

Commission G on Ionospheric Radio and Propagation

Finland: Dr. T. Turunen, Geophysical Observatory, SF-99600 Sodankylä, Finland.

Commission J on Radio Astronomy

Finland: Dr. S. Urpo, Helsinki University of Technology, Metsähovi Radio Research Station, Otakaari 5 A, SF-02150 Espoo, Finland.

3. Change of Address

FRATER, Prof. R.H., Director, Institute of Information and Communications Technologies, P.O.Box 93, North Ryde, N.S.W. 2113, Australia.

HALLIKAINEN, Prof. M., Helsinki University of Technology, E.E. Department, Space Technology, Otakaari 5 A, SF-02150 Espoo, Finland.

TIURI, Prof. M., Helsinki University of Technology, E.E. Department, Radio Laboratory, Otakaari 5 A, SF-02150 Espoo, Finland.

4. Addition

The address of Dr. R.M. Bevensee, representative of Commission B on the URSI-CCIR-CCITT Liaison Committee, is now available. It is as follows:

BEVENSEE, Dr. R.M., L-156, Lawrence Livermore Laboratory, P.O.Box 5504, Livermore, CA 94550, USA.