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WORLD COMMUNICATIONS YEAR

Development of Communications Infrastructures

1983

The General Assembly,

. . . . .

Recognizing the fundamental importance of communications infrastructures as an essential element in the economic and social development of all countries,

Convinced that a World Communications Year would provide the opportunity for all countries to undertake an in-depth review and analysis of their policies on communications development and stimulate the accelerated development of communications infrastructures,

1. Endorses the proposal made by the Economic and Social Council in paragraph 1 of its resolution 1981/60 and proclaims the year 1983 World Communications Year: Development of Communications Infrastructures, with the International Telecommunication Union serving as the lead agency for the Year and having responsibility for co-ordinating the interorganizational aspects of the programmes and activities of other agencies;

2. Requests all States to participate actively in the attainment of the objectives of the World Communications Year;

. . . . .

Extract from United Nations General Assembly resolution 36/40 adopted on 19 November 1981

WCY News

Satellite Communications Users Conference to be held in conjunction with World Communications Year

No single telecommunications technology fits the theme of World Communications Year better than satellite communications. Global and regional satellite systems are bringing low-cost communications to even the most remote areas of the world. Developing nations are implementing their own satellite systems as the backbone for technically and financially efficient communications infrastructures. Developed nations rely on communications satellites for global interconnection, and many are considering the advantages of supplementing existing infrastructures with regional and domestic satellite systems.

But the communications satellite industry is exploding with new technologies and new service applications. Information diffusion is not sufficient for current and prospective users of communications satellites to keep up with an increasingly complex political, regulatory and business environment. The Satellite Communications Users Conference (SCUC) provides a unique opportunity for top decision-makers, suppliers and users to exchange information about this rapidly evolving international industry.

The Satellite Communications Users Conference is an annual event sponsored by *Satellite Communications* magazine, the first international trade journal for the industry, and Cardiff Publishing Company. The SCUC has nearly doubled in size since the first conference was held, reflecting the tremendous need for this kind of international forum. Last year, the SCUC hosted 2500 attendees from around the world. Forty-five operational earth stations brought a variety of satellite-delivered services to many of the 189 indoor exhibits displaying cutting edge technologies. More than 150 speakers of the highest industry stature addressed key user concerns. The SCUC'82 was the largest satellite communications industry conference/trade show ever held. SCUC'83 is expected to meet the information needs of even more satellite communications users and in view of the convergence of WCY, many SCUC speakers are already involved in World Communications Year activities through the United States Council and other committees.

For further information, please contact: "Mr. Stanley M. Searle, Chairman of the Board, Cardiff Communications, Inc., 6430 South Yosemite Street, Englewood, CO 80111 (United States)." Tel.: (303) 694-1522.

PTC'83: a success

The 5th Annual Conference of the Pacific Telecommunications Council assembled in January, in Honolulu, to examine new developments and new hopes for telecommunications serving the Pacific region.

More than 500 persons were present to hear Mr. R. E. Butler, Secretary-General of the International Telecommunication Union, inaugurate World Communications Year at the conference opening. "The United Nations General Assembly", he said in the keynote address, "selected the communications theme for 1983 in order to spotlight its importance in the development process".

"It must be the objective of decision-makers in all fields of telecommunications to translate our fascinating developments so that all may grasp the value and meaning of the new tools at the disposal of their authorities and communities," said Mr. Butler and he pointed out that in many instances, communications seldom rank as a national priority. "World Communications Year will mark the importance of developing communications infrastructures in achieving the objectives of the United Nations system". In that connection, Mr. Butler explained that the ITU Plenipotentiary Conference, in its efforts to promote an

accelerated and harmonious development of communications infrastructures, the main objective of WCY, decided to establish, during the Year an Independent International Commission for World-Wide Telecommunications Development consisting of the world's highest decision-makers. "Therefore," he concluded "technical co-operation in the ITU in the broadest sense is an absolutely indispensable agent of transition to a new global economic framework, to the structural changes required for a new international economic order, to the building of national and collective self-reliance, to the strengthening of technical, administrative and financial capacities and the upgrading of human infrastructures in developing countries, and to providing the catalytic force essential to sustain development progress at a time of near-revolutionary economic change and of severe constraint on development resources."

Another opening speaker was the Associate Director of the United States Information Agency (USIA), Mr. W. Scott Thompson, who reminded the participants that the information age is already here, but that to use information one must have access to it.

Mr. James A. Purdy, Vice-President of the International Telephone and Telegraph Corporation (ITT) and group executive for Asia-Pacific/Latin America Group, called for "partnership planning between telephone administrations, national policy-makers, suppliers, and institutional agencies such as the World Bank and the Asian Development Bank" as "the key to achieving the right telecommunications infrastructure for growth, development and regional co-operation." He pointed to the emerging concept of an integrated services digital network (ISDN) which will allow transmission of voice and non-voice data in an integrated international communication system.

From a third keynoter, International Business Machines Corp. (IBM) Vice-President Mr. Lewis M. Branscomb, came the reminder that "computers and communications are... the lifeline that sustains the peaks of modernization that are found in every nation, at whatever stage of development." Mr. Branscomb challenged the Council to organize a discussion of different countries' educational plans in both the social and technical aspects of telecommunications and information.

Other speakers also emphasized the importance of education. Mr. Michael Gardner, Chairman of the Board of the United States Telecommunications Training Institute, described the intent of that programme to provide training for non-Americans on an ongoing basis.

A principal discussion of the conference centered around ways to serve individual parts of the vast Pacific region. A group from Japan's Research Institute for Technology and Economics laid out a plan for a regional satellite operation that would provide various types of services to the countries in the area. From the International Telecommunications Satellite Organization (INTELSAT) came news of potential satellite services. A United States official who has worked with the Public Service Satellite Consortium pointed out that a study by that group suggests that the greatest telecommunication need in Pacific island nations is for telephone and data links. A concluding conference round table brought together varying views on the potential directions for further development.

Telexpo China 1983 organized in support of WCY 83

An international telecommunications event will be held at the Guangzhou Foreign Trade Centre (China) from 26 August to 3 September 1983. The conference and exhibition: Telexpo China 1983—International Telecommunications Scientific and Technical Expo-Conference, is organized by the Chinese Academy of Sciences, Guangzhou Academy, the China Guangzhou Scientific and Technical Exchange Centre with Foreign Countries, and AVP Expositions Co. Ltd., Hongkong.

The ExpoConference will be held in the Guangzhou Foreign Trade Centre, where the Chinese Export Commodities Fairs are staged twice a year. The 6000 m^2 venue will accomodate 250 exhibition booths. Over 100 manufacturers and suppliers of telecommunications equipment from the world are expected to participate in this event.

The ExpoConference is initiated under the strategic objectives formulated by the Government of China in the 12th National Congress, which has determined that an advanced and integrated telecommunications system is vital and indispensable to China's four modernization programmes. In view of China's progressive moves to upgrade its telecommunications facilities in recent years, advanced technologies and import of foreign equipment will accelerate and enhance development in China's communications industries.

Equipment on display and topics will include technologies in data switching, teleconferencing, business communications, rural telecommunications, communication terminals, data network testing, digital switching, fiber optics, television/radio broadcasting, cable transmission, domestic and international networks, telephone plant test equipment, satellite communications, microwave systems, defense communications, data processing and transmission, mobile communications and radio test equipment applied in various fields such as: land transportation, natural resources exploitation, aviation, education, banking and finance, radio and television, marine navigation, national defence, security and law enforcement, newspaper and publishing, space applications, medical applications, etc.

Besides the display of the latest state-of-the-art telecommunications equipment, the conference programme will feature plenary and topical sessions. Leaders of the world's major telecommunications manufacturers will have the opportunity of discussing and exchanging ideas with China's top officials, scientists and experts.

AVP Expositions Co. Ltd. in Hongkong is responsible for the participation of telecommunications equipment manufacturers and suppliers from Europe, America, Australia, Asia and other countries. For further information, please contact: "AVP Expositions Co. Ltd., Suite 13, 13/F, Block A, 221 Texaco Road, NT, Hongkong". Tel.: 0-239003. Telex: 40725 AVPEX HX. Telegram: AVPEX-MAN.

New international prize established: McLuhan Teleglobe Canada Award

The Commission for the United Nations Educational, Scientific and Cultural Organization (UNESCO) and Teleglobe Canada announced last January the establishment of an international prize in communications, the McLuhan Teleglobe Canada Award. In his statement, the Honourable Francis Fox, Minister of Communications of Canada, indicated that the establishment of the Award constitutes the first official event in Canada's contribution to World Communications Year.

The award, consisting of a cash prize of 50 000 canadian dollars and a commemorative medal, honours the work of University of Toronto English scholar and communications philosopher, the late Herbert Marshall McLuhan. The award was launched in Ottawa in the presence of the McLuhan family.

The award will be offered every two years. Recipients will be individuals or groups of individuals who have contributed to a better understanding of the influence of communications media and technology on society. The competition is open to candidates of all nationalities. "We are living in a communication age", observed Mr. Vianney Décarie, President of the Canadian Commission for UNESCO, "and if the communications revolution is transforming the economic and socio-cultural structures of our society, often to good effect, it can at the same time lead to numerous problems for which we must find solutions."

The McLuhan Teleglobe Canada Award is established by the Canadian Commission for UNESCO in association with Teleglobe Canada, the Crown corporation responsible for Canada's international telecommunications services. Teleglobe Canada is funding the award. Administered by the Canadian Commission for UNESCO, it will be presented for the first time during World Communications Year. The President and Chief Executive Officer of Teleglobe Canada, Mr. Jean-Claude Delorme, explained: "For Teleglobe,

the international dimension of the award is important. Teleglobe would like, in this way, to highlight the importance that Canada attaches to communications and the outstanding role that international telecommunications play in bringing peoples together. It is particularly appropriate" Mr. Delorme stressed, "that the award should be bestowed for the first time in 1983, World Communications Year."

A jury of five independent Canadian specialists will choose the winner from a list of candidates put forward by a network of UNESCO national commissions, or other organizations recognized by UNESCO as performing functions equivalent to those of a national commission. The deadline for submissions of nominees to the Canadian Commission is 31 July 1983.

Herbert Marshall McLuhan was born in Edmonton in 1911. He studied at the University of Manitoba and at Cambridge, where he received a doctorate in English Literature. Mr. McLuhan won world recognition as a scholar in both his chosen fields: English literature and communications. His analyses of the profound influence of the communications media in our electronic age placed him among the best thinkers of our time. His famous aphorisms, "the medium is the message" and "the global village", have become part of everyday thought and speech.

For further information, please contact:

Ms. Louise Beaulne, Chief, Information Section (Tel.: (613) 237-3400. Ext.: 450)

or Ms. Aline Sigurdson, Programme Officer (Tel.: (613) 237-3400. Ext.: 323)

Canadian Commission for UNESCO

or

Mr. Brian Townsley, Director, Information Services, Teleglobe Canada (Tel.: (513) 281-5215).

The new infrastructure for communications

As part of its efforts to promote World Communications Year, International Aeradio Limited (IAL), a British communications firm, has commissioned one of the United Kingdom's leading electronic writers, Roger Woolnough, to look at some aspects of developing communications infrastructures. His article of which an abridged version is published hereafter, appeared in the winter 1982 issue of *IAL Journal*:

"When archaeologists excavate man's past habitations, they find layer upon layer of the remnants of bygone civilizations. Shards and stones, coins and buttons, the remains of fire and decayed vegetation—each stratum reveals, to the expert eye, the manner of life at varying periods of history.

"If the archaeologists of future centuries ever have occasion to slice through today's towns and cities, they will uncover a strange sight indeed: beneath the surface will be found an extraordinary criss-crossing of pipes, cables and tunnels, of many sizes and kinds, constructed or laid over a period of a century or more.

"Some will relate to communications, others to gas and water supplies or other essential services. They represent the essential accessories of urban survival in the 20th century—what economists call, along with roads, railways and other permanent installations, the "infrastructure".

"It is the development of communications infrastructures which has been chosen by the International Telecommunication Union as the theme for World Communications Year 1983. The subject is an apt one. It is becoming increasingly clear that without communications the developed countries cannot continue to function efficiently, while for the developing nations communications is equally essential if they are to make progress towards greater prosperity.

"Along with this acceptance of communications as a vital resource, new technologies are arriving which will revolutionise it. The infrastructure, far from being something which everyone can take for granted, is about to go through such far-reaching changes that the economics of communications will be totally revised, and completely new services will become available.

"The underground communications system which a future archaeologist would expose are not, of course, the whole picture. Overhead cable systems thread the streets and fields, submarine cables cross the sea-bed to send telephone conversations and data between continents, mobile radio systems link road vehicles, ships and aircraft, and satellites are poised above the earth to distribute messages around the world or to serve scattered communities. All these facilities make up today's communications infrastructure, and they will all be touched by new technology.

Digital Transmission

"Basic to all developments in communications is digital transmission. The earliest form of telecommunications—electric telegraphy—was a form of digital transmission, but for most of the past century telephony and radio have communicated with analogue signals...

"... every type of signal can be converted for this type of transmission—voice, text, graphics, TV, music. Analogue signals have the disadvantage of being subject to distortion and interference, but digital transmissions do not suffer in the same way. Digital technology can also cope with the high rates of transmission which are being increasingly demanded for computer data.

"... optical fibres (which) are a natural medium for digital transmission, as signals are sent as pulses of light, rather than electrical signals. The hair-thin strands of glass which make up optical fibre cables have far more capacity than copper systems, and take up far less space: 2,000 simultaneous telephone calls can be carried on a single pair of fibres.

"Optical fibres are also likely to be used in long-distance submarine cables. Despite the availability of satellite communications, submarine cable systems have continued to grow...

"As digital technology spreads, telecommunications will be taken over more and more by these new systems. First the links between exchanges will become digital, then the exchanges will adopt digital switching. Telecommunications specialists are referring to this stage of development as the Integrated Digital Network (IDN)...

"[After INTELSAT] another piece of the new infrastructure is being supplied by INMARSAT, the International Maritime Satellite Organisation, which provides global satellite communications for shipping and the offshore industry...

"The next step will be revolutionary: the Integrated Services Digital Network (ISDN), which will complete the move towards digital technology by including the subscriber loop.

"Subscribers will have end-to-end digital working, and there will be no need to convert from analogue to digital and back again at any point. Once this has been achieved, a whole range of new subscribers' apparatus will appear. Voice will still play a large part in telecommunications traffic, and people will still use telephones for this purpose. But ISDN will also make it possible to attach all sorts of digital equipment to the network, just as the telephone is attached today: visual display terminals, transaction telephones, data printers, facsimile units, and much more.

"... To meet the apparent unquenchable thirst for international communications, satellites will continue to play an important part. INTELSAT, the International Telecommunications Satellite Organization with over 100 Member countries, has more than 200 earth stations equipped with more than 300 aerials, and 13 satellites in orbit...

"... Others are also entering the satellite communications business. A leading role is being played by the European Space Agency (ESA)...

"Back on earth, land mobile communications are being transformed by cellular radio. With this technology, a number of low-power transmitters are arranged in a honeycomb pattern. Adjacent transmitters use different

frequencies, but those which are far enough apart not to cause mutual interference can use the same frequency. Mobile receivers automatically switch from one frequency to another as the vehicle moves through the area covered by the network.

"Cellular radio brings two main benefits: it conserves the spectrum, and it makes it possible to accommodate many more mobile radio users... Using a cellular design it would be possible to provide 500 channels able to accommodate 150 000 subscribers.

"... As the new infrastructure in communications falls into place, will there not be a danger that capacity will outstrip demand, and that many of the cables and radio channels will lie idle? Apparently not. The tremendous upsurge in demand for communications over the past 30 years seems to continue unabated, even in a time of world economic recession. Some people believe that once all the new facilities are available, travel as we know it today will largely disappear, particularly for business purposes. This may be putting an extreme interpretation on current trends, but we are certainly at the beginning of major changes. And there can be no doubt that these will drastically affect business organization and social life during the next few decades."

News about the National Committees

The purpose of the National Committees is to formulate, co-ordinate and implement the programme of activities to be undertaken within the framework of WCY 83. The committees also constitute the basic mechanism for carrying out the effort of reflection and review of national communications policies, the main objective of the Year.

The necessity of their earliest establishment to ensure the attainment of these objectives can never be overemphasized. To date, 53 countries have responded positively to the appeal launched last year by the Secretary-General of the ITU, Co-ordinator of World Communications Year, and have established their committee.

Egypt

(Source: Telecommunications Organization)

The Chairman of the Board of Directors of the Telecommunications Organization, Mr. A. K. Mohamed, has announced the setting up of the Egyptian National Committee for World Communications Year. Although the membership has not yet been made known, indicated Mr. Mohamed, the Committee comprises representatives of the sectors concerned with the development and operation of communications infrastructures.

German Democratic Republic

(Source: *Ministerium für Post- und Fernmeldewesen*)

The Director of the International Affairs Division, Dr. W. Paubel, has informed the WCY Secretariat that his country has established a Central Commission for World Communications Year, headed by Dr. Heinz Aull, Deputy Minister of Posts and Telecommunications in the field of science and technology.

Oman

(Source: Omani WCY Committee)

Since the establishment of the Omani WCY Committee (see *Telecommunication Journal* of February 1983, page 71), 10 meetings were convened to draft a programme of action for World Communications Year.

His Excellency, Mr. Karim Ahmed El-Haremi, Minister of Posts, Telegraphs and Telephones, launched officially WCY 83 during a special television programme, broadcast on 1 January last. The Minister's address was followed by a documentary film showing the development of communications in the Sultanate. The written media also covered the event and published several articles on WCY.

The programme of activities so far includes the possibility of producing a documentary film that would stress the social effects of developing communications as well as the issuance of WCY 83 commemorative stamps. The Ministry of PTT has also produced and displayed throughout the country WCY posters and publications with a view to bringing into focus some aspects of communications on the occasion of World Communications Year. In addition, the Minister has authorized the use of a special WCY stamp on all official correspondence. Other activities are under discussion and will be reported later during the year.

Pilot projects

Afghanistan

To complement the programme previously published in the *Telecommunication Journal* (see October 1982 and February 1983 issues), the National WCY Committee of Afghanistan has approved a project proposed by the Ministry of Higher Education.

After the April revolution of 1978 and particularly after its new phase, Afghanistan decided to implement basic reforms in order to provide equal opportunity of education to the entire population and to set up structures that would facilitate the rapid development of the country through modern education.

Because of the vital role played by science and technology in all aspects of the national life a programme was designed to explain the latest achievements in this field and to teach a methodology for further investigations. This programme devotes considerable attention to the role of communications and particularly, the social aspects of mass communications. In that context, the Ministry of Higher Education and Vocational Training is seeking assistance for setting up a Media Centre. This Centre would have a fixed base where young people could come and receive basic information on career and training opportunities. This information would be available through films, video, slides, posters, brochures and other teaching aids. The Centre would also have a mobile unit that could go from one location to another, for agricultural, industrial or health extension services. In 1976/1977, a project was designed with the assistance of the United Nations Food and Agriculture Organization (FAO) in which local farmers were asked on which topics they needed expert advice. Appropriate material was prepared and extension agents travelled throughout the country addressing gatherings of peasants. The results have shown that the message got across most effectively because it was combined with interpersonal, face-to-face contact with a trained instructor or group leader, most of the time drawn from the same social group or area as the audience. This type of medium comes as a useful complement to other communications media such as radio/television broadcasting.

The Ministry of Higher Education and Vocational Training and the Afghan WCY Committee consider this project as a very important one for the success of a host of development objectives and accordingly is seeking financial assistance for the required equipment.

Ethiopia

The Ethiopian WCY Committee has submitted, for possible international financing, three pilot projects relating to telecommunications.

Rural telephony

Providing adequate telephone facilities to subscribers in rural and remote areas of Ethiopia and in particular subscribers who are scattered and far apart, has always been a formidable undertaking to the Ethiopian Telecommunications Authority. Where the terrain is rugged, underdeveloped or has a sparse population distribution, the cost of installing conventional open-wire telephone lines has been very prohibitive.

Several villages, State farms and a few of the factories in the country are located in such geographical locations and, hence, face serious difficulties with regard to the availability of telecommunications. Moreover, where some areas are served by conventional open-wire lines, maintenance costs become extremely high due to access problems, unfavourable weather conditions, forest fires and other natural handicaps.

The use of some form of radio, often a broadband UHF or microwave, while proving to be economical for trunk or long-haul applications, is a rather expensive solution for rural subscriber uses. Because it is relatively cheap and suitable for connecting rural subscribers to the central switching office without main and feeder cables, the use of radio system in the 150 and 450 MHz bands is being increasingly adopted by telecommunication administrations.

The Ethiopian Telecommunications Authority and the National WCY Committee, after careful examination, have decided to request the inclusion of this project in the list of proposed pilot projects for World Communications Year and is soliciting assistance to carry it out.

Mobile broadcasting facilities

Because *Voice of Revolutionary Ethiopia* does not have mobile equipment, 14 administrative regions do not enjoy live transmission of programmes. Programmes produced from tape-recorded material are gathered by journalists on mission and are broadcast from the national stations in Addis Ababa or the regional stations in Harar and Asmara. As a result, very few programmes cover news and activities taking place outside major urban centres, and when they do, they are often outdated at the time of transmission. Because the vast majority of the population of Ethiopia lives in rural areas, this means that it is virtually excluded from the national life. It is therefore proposed to provide the Voice of Revolutionary Ethiopia with outside broadcast vans to enable it to record and transmit live, in and from rural areas, economic, social and cultural events as well as activities of peasants's associations, co-operatives, or literacy campaigns. The cost of the project amounts to 200 000 US dollars.

Radio assembly

A third project proposed for financing by the Ethiopian National Committee for World Communications Year deals with local manufacturing of small radio sets used for education purposes.

The Ministry of Education, through its Department of Educational Mass Media, supports formal and non-formal education, using various mass media. The Department is assisted in this enormous task by two well-equipped recording studios located at the Department headquarters and 11 broadcasting stations located throughout the country.

The Department has until now distributed, free of charge, 18 000 radio sets to over 5000 schools and centres for literacy campaigns which can now receive educational radio programmes throughout the academic year. In order to reduce the costs of providing these radio sets with a view to increasing massively their dissemination in every corner of the country, the National Committee considers that it would prove to be cost-effective to produce locally a medium-wave radio set, with a frequency range of 525 to 1650 kHz, and for that purpose is seeking financial assistance to establish a manufacturing workshop. The Department of Educational Mass Media has already set up 10 regional maintenance centres in addition to the central maintenance at Addis Ababa, with two technicians per centre. Each maintenance centre has fully-equipped mobile vans for use in areas where the schools and other learning centres are sparsely located. The cost is estimated at 185 000 dollars.

A complete description of the projects is available on request from: "WCY Secretariat, ITU, Place des Nations, CH-1211 Genève 20, (Switzerland)". A self-addressed envelope would facilitate a prompt reply.

News in brief

Australian radio amateur participates actively in World Communications Year

The Orange Amateur Radio Club has initiated a number of activities to be organized within the framework of WCY. These are viewed as a community service and include a number of lectures and public forums.

Also, the Australian National Amateur Radio Teleprinter Society (ANARTS) has organized a world-wide contest: the "World Communications Year RTTY Contest". This competition is scheduled to take place from 11 to 13 June 1983 and winners will be awarded trophies at the Institution of Radio and Electronics Engineers (IREE) Convention to be held in Sydney (Australia) from 5 to 19 September. Two of the prizes have been offered by the ITU. Mr. R. E. Butler, Secretary-General of the Union and Co-ordinator of WCY, will be presenting the awards. In addition, all contestants will receive a certificate of participation signed by Mr. Butler on that occasion.

More information and rules of the contest may be obtained directly from the contest manager: "Mr. Bill Storer, Australian National Amateur Radio Teleprinter Society, PO Box 860, Crows Nest, NSW 2065 (Australia)".

Mexican television channel hails the proclamation of World Communications Year

Mr. Luis Rojas Moussong, Chief of Productions and Information of Channel 6 (Guadalajara, Jalisco), has developed a series of public information activities to promote WCY in Mexico.

As part of his efforts a 30-second television spot calling attention on World Communications Year was broadcast 6 times a day during the last three days of December 1982 and 20 times a day throughout January 1983. The spots pictured communications-related themes. A special programme of a duration of 5 minutes was also broadcast 4 times daily on the first and second day of January.

In addition, a flash with the WCY 83 logo has been shown at the beginning of each television programme from January to May 1983.

Just published

The United Nations Information Centre in Manama (Bahrain) has just published a booklet in Arabic on World Communications Year.

The booklet is based on information material already available in English, French and Spanish. Mr. Fathi Al-Sheikh, Director of the Centre, has informed the Secretary-General of the ITU, Co-ordinator of WCY, that 4500 copies had been distributed in the three countries served by his office, namely Bahrain, Qatar and the United Arab Emirates, including 3000 copies to schools.

This publication is available on request from the WCY Secretariat, ITU headquarters. To facilitate an early reply, a self-addressed envelope would be appreciated.