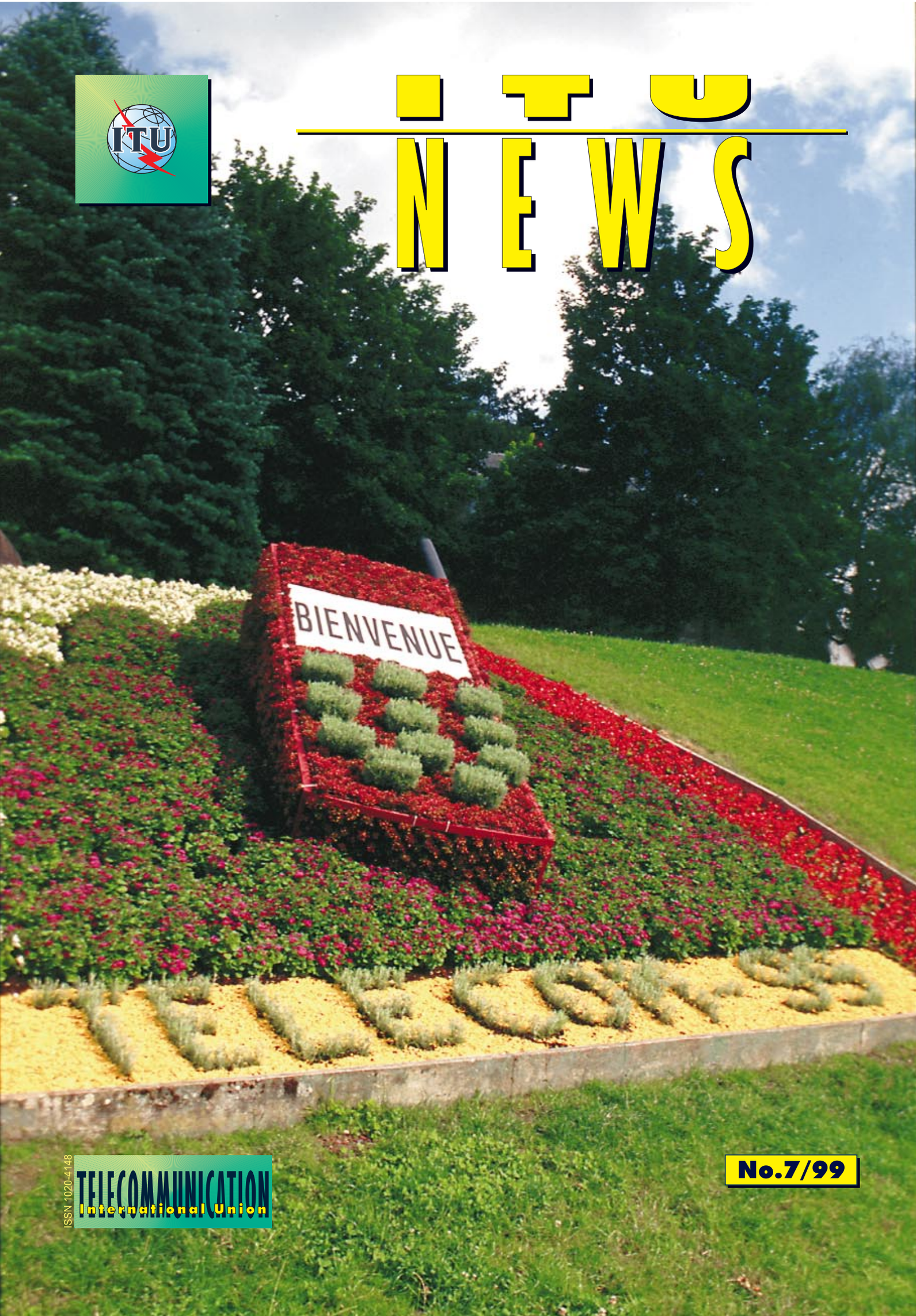
ITU NEWS



ISSN 1020-4148
TELECOMMUNICATION
International Union
No.7/99

Cover: Floral decoration representing mobile telephony in Grand-Saconnex, Geneva.
Source: ITU/A. de Ferron
(ITU 990049)

ITU News: ISSN 1020–4148
10 issues per year

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ITU NEWS

N°7 1999

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Join the world!

Every big event deserves a theme. The International Telecommunication Union has chosen "Join the world!" as the theme to celebrate TELECOM 99 + Interactive 99, which will open its doors at the Palexpo Exhibition and Conference Centre in Geneva from 10 to 17 October 1999. Major players and some of the most powerful figures in the infocommunications industry will gather in the city of Calvin to share their visions on the way the world will communicate in the 21st century.

The floral mobile phone on the cover page, located in Grand Saconnex only a few metres away from Palexpo, is very symbolic of our times. We will certainly see more mobile phones this time, than we did at TELECOM 95.

The World TELECOM exhibition and Forum are held every four years and are regarded as the world's most important event in the field of telecommunications. If only because of their size, they provide ITU with a key tool for accomplishing one of its most important missions: acting as a catalyst for the advance of technology and services, bringing together all areas of the industry to promote a better understanding and realization of the role of telecommunications as a basic national and international infrastructure.

For some, the event has quite simply become the Olympics of telecommunications. This time, the show will be even more glamorous with the addition of an interactive component first launched in 1997 as TELECOM Interactive. More than 1000 exhibitors and 200 000 influential visitors from government and industry, as well as the world's media are expected to participate in the last Olympics of the century.

The opening ceremony of the week-long event will take place on 9 October (14h00 to 16h30). Over 3000 representatives of industry and government from 150 countries are expected to attend this ceremony, which ICO Global Communications has been selected to sponsor. Ericsson, NEC Corporation and Hughes Network Systems are ICO's partners in sponsoring the ceremony.

Swisscom has been selected officially to provide telecommunication services throughout the event.

There is everything for everyone in the TELECOM 99 + Interactive 99 Forum programme, which includes four summits running from 10 to 15 October and an Internet weekend.

- *The **Policy and Regulatory Summit** promises to offer a top-level public exchange of ideas between policy-makers, regulatory authorities and industry leaders on issues of global convergence, competition, mobility, electronic commerce, global access to scarce resources, infrastructure investment and trade.*
- *The **Infrastructure Summit (network and systems)** will bring together researchers, managers, developers, integrators, investors and industry leaders from the world of telecommunications and information technology. At the heart of their debate will be questions on information infrastructure, new technologies, core and access networks, management issues, investments and mobile communications.*
- *The **Interactive Summit (services and applications)** promises to demonstrate a novel, human-centred approach to the information society and to assess the impact of the new infocommunication technologies on the way we live, learn, trade and entertain.*
- *The **TELECOM Development Summit** features the TELECOM Development Symposium. Better known as TDS, the symposium offers a fellowship programme drawn up in association with the Telecommunication Development Bureau (BDT) and will bring together fellows from 84 least developed and low income countries to discuss how current trends in telecommunications can speed up the overall development of the economy and people of an individual country. Here, the focus will be on Centres of Excellence, community access and accounting rates. Other sessions of the Development Summit will deal with questions of universal access, Internet, development models and private entrepreneurs in developing countries.*
- *Finally, the **World TELECOM Internet Days** will serve to end the show of the century. This Internet weekend will be marked by a mix of entertainment, debates and educational demonstrations, highlighting the role of the Internet and of the new infocommunication technologies in our lives today and in the future.*

Join the world at TELECOM 99 + Interactive 99 and witness some of the dazzling changes before they happen.

The Editor

Hong Kong, China, to host ITU TELECOM Asia 2000

ITU TELECOM Asia 2000 will be held in Hong Kong (China) from 4 to 9 December next year. The event will take place in the brand new Hong Kong Convention and Exhibition Centre, which is ideally located and offers advanced exhibition and Forum facilities.

As organizer, the International Telecommunication Union (ITU) received invitations with very attractive conditions from several countries in the region — it was not easy to decide on the venue. After many consultations and a series of negotiations, however, and taking into account the particular considerations of infrastructure, accommodation, transport, as well as conference and exhibition facilities, ITU Secretary-General, Yoshio Utsumi, accepted the offer of the Government of China to host TELECOM Asia 2000 in Hong Kong.

A signing ceremony was held at the ITU headquarters in Geneva on 24 June 1999, with His

The signing ceremony. From left to right (seated): Anthony Wong, representing the Government of the Hong Kong Special Administrative Region of China, Ambassador Zonghuai Qiao, Permanent Representative of the People's Republic of China to the United Nations Office at Geneva and other international organizations in Switzerland, Yoshio Utsumi, ITU Secretary-General, and Roberto Blois, ITU Deputy Secretary-General, and (standing): Xianguo Tong, First Secretary, Permanent Mission of China in Geneva, Benji Sun, Director of the Ministry of Information Industry, China, Wenchu Qu, Deputy Director-General of the Ministry of Information Industry, and Chinese Counsellor of ITU, Jean-Patrick Baré, President, TELECOM, Tom Dahl-Hansen, Senior Vice-President, TELECOM, and Head, Business Development and Marketing Division, and Zhenyi Hou, Counsellor, Permanent Mission of China in Geneva

Photo: A. de Ferron (ITU 990044)

Excellency Ambassador Zonghuai Qiao, Permanent Representative of the People's Republic of China to the United Nations Office at Geneva and other international organizations in Switzerland, representing the Chinese government and Mr Utsumi representing ITU. Mr Qiao said: "China is delighted to be hosting this prestigious event, which will help advance telecommunication development in all the countries of the Asia-Pacific region." Mr Utsumi said that he was very pleased that ITU was going, for the first time, to be organizing an event in China, and that he was confident that TELECOM Asia 2000 would be a great success for the region's people.

At the same ceremony, Mr Anthony Wong, the Director-General of Telecommunications representing the Government of the Hong Kong Special Administrative Region (HKSAR) of China, signed the Memorandum of Administrative Arrangements for the event. At the signing ceremony, Mr Wong said: "We welcome ITU's acceptance of the invitation from the People's Republic of China to hold TELECOM Asia 2000 in Hong Kong."

Hong Kong, promises to be an excellent venue for the TELECOM event, with a communications and transport infrastructure which reflects its importance as a business hub for the region.

The ITU's unique position as a specialized agency of the United Nations enables it to bring together in Hong Kong all the strategic players in the world of telecommunications, where visitors, exhibitors and speakers will have access to the technology and ideas that will shape the future for the Asia-Pacific region.

Following the remarkable success of Asia TELECOM 97, TELECOM Asia 2000 promises to be the biggest telecommunications event ever held in the region. With 64 000 m^2 of air-conditioned exhibition space available, it is expected to attract over 500 companies from more than 100 countries. Asia TELECOM 97 was attended by 476 exhibitors, 40 608 visitors from 104 countries, and 401 VIPs, comprising ministers of communications, directors-general, chairmen and chief executive officers.

We welcome ITU's acceptance of the invitation from the People's Republic of China to hold TELECOM Asia 2000 in Hong Kong, declared Mr Wong

Photo: A. de Ferron (ITU 990045)

The 49 countries of the Asia-Pacific region constitute the world's largest single market for telecommunication products and services. The regional average telephone density is just 6.6 per hundred people against a world average of 13.4. But the Asia-Pacific region is recovering fast after the 1998 recession, and several economies of the region continue to be the fastest growing in the world today.

China itself is not just one of the biggest telecommunication markets in the world today, but is also one of the fastest growing. At the beginning of June 1999, the country had more than 30 million mobile cellular subscribers in the world, ranking it third, behind the United States (70 million) and Japan (43 million).

TELECOM Asia 2000 will be the 23rd TELECOM event since World TELECOM was first held in Geneva in 1971. The regional events, which include Americas, Asia and Africa TELECOMs, were introduced in 1985 in order to address the more specific concerns of the individual regions. Since then, these events have grown in size and prestige and have become the most respected and authoritative in the world. The world event is held every four years, while the Asia and Americas regional events are now held every other year in order to ensure adequate global coverage across all 188 Member countries of the ITU. Each regional event has shown huge growth over its predecessors. Asia TELECOM 97 was nearly twice the size of Asia TELECOM 93, which was itself more than three times as big as Asia TELECOM 89, and six times larger than Asia TELECOM 85.

TELECOM Asia 2000 comprises an exhibition and a Forum. The exhibition will feature a vast range of telecommunication-related products and services, while the associated Forum will focus on the latest telecommunication developments and growth in the region and will provide a platform for telecommunication leaders to share their ideas on future trends and discuss appropriate strategies for the developing as well as the industrialized world.

The whole region will be represented at the event by means of a fellowship scheme, which brings two representatives from each of the countries across the region to participate in a development workshop as well as being able to share in the Forum and see the exhibition.

For additional information, please see the ITU TELECOM Web site, at "www.itu.int/telecom", or contact "Thomas Frankl, Head, Press and Public Relations for TELECOM 99 + Interactive 99 (Tel.: +41 22 730 0331. Fax: +41 22 730 0910/0911. E-mail: thomas.frankl@itu.int)" or "Jenny Bonnet, Media Relations Officer — Media, TELECOM 99 + Interactive 99 (Tel.: +41 22 730 0585. Fax: +41 22 730 0910/0911. E-mail: jenny.bonnet@itu.int)". ■

For whom the bell tolls

There is one poster that many of you may have seen which has a simple but profound message that I would like to share with you. It is the UNICEF [United Nations Children's Fund] poster in which a child is asked: "What would you like to be when you grow up?" The child responds: "Alive".

We cannot afford the luxury of wondering whether what is happening to millions of people around us has anything to do with us. Let us not wonder to whom the challenge by the children on the UNICEF poster is posed, it is posed to us. In these words, Lyndall Shope-Mafole, the first woman ever to chair the Council, opened the 1999 session of the Union's governing body (see "Editorial", *ITU News*, No. 5/99) — likening the task ahead to Ernest Hemingway's classic: *For whom the bell tolls*.

And so for ten days (16–24 June 1999), the Council ploughed through its heavy agenda with a sense of urgency, reaching important conclusions. One of them was the endorsement of the Secretary-General's new initiatives to strengthen the Union's policy role. These initiatives include:

— the organization of an annual strategic planning workshop whose purpose is to provide a focus on topics of high current interest to regulators, policy-makers and the ITU membership as a whole;

— conducting in-depth country case-study series of the changing telecommunication environment;

— the participation of ITU in international discussions and initiatives on the management of Internet domain names and addresses, in particular, the participation of the Telecommunication Standardization Sector in the Protocol Supporting Organization (PSO) of the Internet Corporation for Assigned Names and Numbers (ICANN) and the management by ITU of the .int top level domain name intended primarily for intergovernmental organizations. ITU is already participating in the ICANN Governmental Advisory Committee.

Two new groups were set up. One is a group of experts made up of 20 members with the mandate to assist the Secretary-General in the preparation of a study on the impact of changes in the regulation and operation of international telecommunication services on the International Telecommunication Regulations, which were last updated at the World Administrative Telegraph and Telephone Conference in Melbourne in 1988.

The other is a Working Group on ITU Reform open to both Member States and Sector Members with the mandate to not only review the management, functioning and structure of the Union and the rights and obligations of the entire membership, but also to consider ways of strengthening the Union's financial base. A 15-member bureau was approved to coordinate the work of the Reform Group and will be chaired by Ms Shope-Mafole.

On the question of cost-recovery, a schedule of fees for different classes of satellite network filings was approved. The status quo was maintained with regard to other products and services identified by the Union in recent years as possible candidates for cost-recovery. A number of global services (ITU ATM end system addresses, universal international premium rate numbers and universal shared cost numbers), for which a registrar function may be required in the not-too-distant future, were noted as the next candidates for cost-recovery.

On the holding of a World Summit on the Information Society the preliminary actions taken by the ITU Task Force were endorsed and a report on the outcome of a feasibility study will be submitted to the next session of the Council for a decision.

A cooperation agreement was endorsed between ITU and the United Nations Educational, Scientific and Cultural Organization (UNESCO). On the other hand, a framework was established for further negotiations for a cooperation agreement between ITU and the World Trade Organization (WTO).

As for the holding of the Radiocommunication Assembly (RA-2000) and the World Radiocommunication Conference (WRC-2000), the Council agreed to continue its consultations by correspondence to agree on the dates and venue.

"Mobile cellular communications: challenges and opportunities" was chosen as the theme to mark the year 2000 World Telecommunication Day.

The interviews published in this issue capture the mood of the Council. A more detailed report is available at http://www.itu.int/newsroom/press/council/pressreport99.html. For those without access to the Internet, a copy can be requested from the "ITU Press Office. Tel.: +41 22 730 6039. Fax: +41 22 730 5939. E-mail: pressinfo@itu.int". ■

Interview with Lyndall Shope-Mafole

Plenipotentiary Minister of Communications at the Embassy of South Africa in Paris

Chairperson, 1999 session of the ITU Council

Keith Allen
Head, Corporate Communication Section

■ ***Ms Shope-Mafole, this is the first time in the history of the ITU that a woman has been elected to chair the Council. What was the biggest challenge for you as the first woman at the helm of the Union's governing body?***

The biggest challenge for me was perception. All the delegates know that difficult and important issues are discussed at each Council session. So, on the one hand, there were many people wondering if I could do the job. But on the other hand, there was an even stronger expectation that I could rise to the occasion. Many people saw me as a role model for women, and for younger women in particular as I am only 41. Given my age, they really wanted me to succeed, which created tremendous pressure. Personally, I was very determined to answer people's perceptions whether they were positive or negative, to prove that I could do a good job and that people's trust and confidence in me were not misplaced.

■ ***Did you have any preconceptions about chairing the Council before you arrived in Geneva? If so, how did reality differ from your expectations?***

There were some difficult issues facing the Council. But I was pleasantly surprised at the level of cooperation between delegations, perhaps in spite of their wanting to fight for more. I was also pleasantly surprised at the number of expressions of support and the cooperative attitude I received from many of the male delegates. That surprised me a little, as some delegates love to remind the secretariat that it exists to serve them,

Lyndall Shope-Mafole Photo: A. de Ferron (ITU 990040)

and the Chairperson that he or she is there to chair the meeting, not to tell them what to do.

At first, many people were a little nervous about my position, and expressed that nervousness by offering lots of advice. Sometimes I seem younger than 41, so I guess they were concerned that such a young person was playing such a difficult and important role. In some cases, there was the assumption that I could never have handled anything like this before. In fact, I have worked for some time in the United Nations system, and have represented my country before. Defending a position is, therefore, nothing foreign to me. Let me just give you an example. I was once a regulator under South Africa's Regulatory Authority, and as many people know, our parliament can be aggressive, so I was not overawed by this new challenge. But as this is the first time I have been selected for such an eminent and visible position, while I was confident that I could manage from my experience, I was still a little humbled by this "new" experience.

■ ***In your opening address, you gave the Council a theme taken from a UNICEF poster in which a child is asked "What would you like to be when you grow up?" The child responds "Alive". How has the Council responded to this theme, and to the needs of the millions of children and adults who have never made a phone call?***

Initially, some people did not understand the relevance of this theme, but realized later in our discussions that that statement was indeed relevant to what we were doing. I was pleased when two councillors referred to the theme. No matter how hard we try to say that ITU is apolitical, it is up to us to decide whether something is political or not. What we do is very important. The ITU is an intergovernmental body that tries to play a role that will make life better for all people, even more so nowadays with the new services and technologies that could rapidly improve quality of life in the developing countries. That in itself is a political act which, in my view, brings an extra dimension into the Council's deliberations.

After all, I think that this is the first time a person who has been an exile has chaired a meeting of an international organization. So my being here is a political statement. There are so many children without a home, without a country, without a flag — but here was one chairing such an important meeting.

I mentioned in my acceptance speech at the Minneapolis Plenipotentiary Conference that, without the international support which South Africa received during its struggle, my country would not be what it is today. Also, I would not be Chairperson.

It was international solidarity that educated me in various countries while I was exiled. The years I spent in the Czech Republic, Tanzania and Cuba helped me to get here, and I hope that the delegations from those countries think that their support for my education was worthwhile.

■ ***Whilst the Minneapolis Plenipotentiary Conference may not have changed the ITU into the Union of the 21st century, it gave the necessary instructions and mandates to the Council. Do you think that this session of the Council has taken steps to make the Union fit for the next century?***

Absolutely. We have taken some steps in the right direction, and none of that would have been possible without the spirit and results of the Minneapolis Conference. You will have noticed in particular that delegates were consciously trying to make the meeting as efficient as possible. Speeches were kept short and the amount of documentation was kept to the essentials. At the same time, there is a feeling of impatience. A working group has been set up to look at ways of reforming the ITU, with myself as Chairperson.

Many delegates feel passionately about the need for the Union to take the leading role in the telecommunication sector. They have high expectations from this new working group. This session of the Council has taken decisions that will change the character and appeal of the ITU in a profound way.

■ ***As Chairperson, is there a message that you would like to send to the various parties involved in the Union's activities?***

To the Council, the ones with the power to move things forward, I would say "keep an open mind". In a way, I am lucky to come from a country that has witnessed so many changes and seen things which I never thought I would see happening. I am used to change and to seeing new ideas become reality. That is why it is important to keep an open mind. The Council needs to be sensitive, to take people seriously, to operate in an atmosphere of mutual trust, to evaluate contributions fairly, and not to assume that there is always a hidden agenda.

The Council will be receiving a lot of reports between now and the next Plenipotentiary Conference in 2002. It will need to comment on these reports and to adopt some of them — only an open mind will allow the ITU to move forward.

To the elected officials and the ITU management, I would say that they will need to restructure the ITU to meet the challenges of the future. In doing so, they should always remember that they are dealing with human beings, not with numbers. The best way to achieve change is to include people in discussions about the changes needed — employ good change management tactics and involve people.

To the staff, my message would be that they need to understand that change is the only constant. The ITU will change in the future, and everyone will need an open mind. The best strategy I can recommend towards change is to welcome it and adapt to it. In South Africa, we saw some very interesting things when changes started taking place. For example, when many companies were privatized. In those companies where the management worked with staff to make change work, there were fewer strikes, and the companies have flourished. Clearly, it is necessary to have an open mind, because change is not necessarily a bad thing. We need to understand that change is largely inevitable, but that it is possible to embrace it, and to survive and even thrive on it.

To Sector Members who perceive the ITU as slow and heavily bureaucratic, they must remember that with 188 Member States, it does take time to reach decisions. Many of our Member States are concerned about the changes which will result from the development of the global information economy. Member States from the developing world still have national laws which need to be respected. Understandably, many of them are nervous about the role to be played by Sector Members, many of whom are from the developed world. This reluctance is not because Member States do not like Sector Members; they are just reluctant to move too quickly, since we are talking about sovereign governments with their own ways of doing things. But it could be worse. The membership is moving, and has recognized that ITU needs to change to remain relevant in today's world. It is absolutely possible to create something special, within the UN system, out of today's ITU. We are fortunate to be in a "fashionable" industry. I am committed to finding a way for the public and private sectors to work together for the good of humanity and for mutual benefit.

To Sector Members who perceive the ITU as slow and heavily bureaucratic, they must remember that with 188 Member States, it does take time to reach decisions

The problem at the moment is that, even if we get more people involved in the ITU, there will always be those who need the ITU but who do not know it; and there will be those who know the ITU but do not think they need it. Our job is to make the ITU relevant to each section of society, be it in the private or public sector, and to meet the challenge of the global information society as technologies and industries converge.

On a general note to Member States and Sector Members, I would like to appeal to them to find ways of involving more women in the work of ITU — especially younger women. To the women themselves, I would encourage them to seize the opportunity to become involved. This requires work — not just following the activities of the ITU, but keeping up to date with developments in the industry as well. It does pay off. I am living proof of that. ■

Balancing the budget for the years 2000 and 2001

Interview with Bruce Gracie

Senior Adviser
International Organizations at Industry Canada

■ ***As the new Chairperson of the Council's Standing Committee on Finance, how would you describe the budget approved for the Union for the years 2000 and 2001?***

The Council approved a biennial budget of CHF 332.6 million for the years 2000 and 2001. This amount reflects exactly the ceiling of CHF 333.2 million established by the Plenipotentiary Conference (Minneapolis, 1998), taking into consideration the fact that the exchange rate between the United States dollar and the Swiss franc was different when that ceiling was established. That difference has been absorbed within the budget itself and the Council was able to approve a zero nominal growth budget in accordance with Decision 5 of Minneapolis, which deals with the expenditure of the Union for the period 2000 to 2003.

The decisions taken on cost recovery, as far as satellite network filings are concerned, was an important step in the process of stabilizing the financial base of the Union

Furthermore, efforts undertaken to diversify the income base of the Union, principally through the mechanism of cost recovery, have resulted in the lowering of the amount of the contributory unit for both Member States and Sector Members.

Unlike in previous years, the Union's budget for the years 2000 and 2001 was presented differently to the benefit of the ITU membership. In particular, the various components of the budget were laid out clearly, making it more transparent and more easily understood. The ITU's new management team has undertaken particular efforts, given in part as a result of the discussions that took place in Minneapolis, concerning the need for increased transparency in presenting the Union's financial situation.

Among the initiatives agreed in Minneapolis was the need to link the financial planning process with both operational and strategic planning. With this approach, we have a much clearer understanding of the need to establish the linkage between the priority activities and the financial credits that are available. So the onus, of course, is on the General Secretariat and on the three Sectors of the Union (Radiocommunication, Standardization and Development) to manage their budgets in such a way that the high priority activities are financed properly, but at the same time they will have to make decisions where the lesser priority activities may not receive the financing that they did in the past. This of course was the approach decided in Minneapolis and the way in which the budget was presented is fully consistent with that approach.

We need to congratulate the management team for taking the bull by the horns and presenting the membership with a much more transparent and balanced budget and with a realistic financial basis from which we can finance properly what we consider, as Members of the Union, to be the most important activities that need to be undertaken in the future.

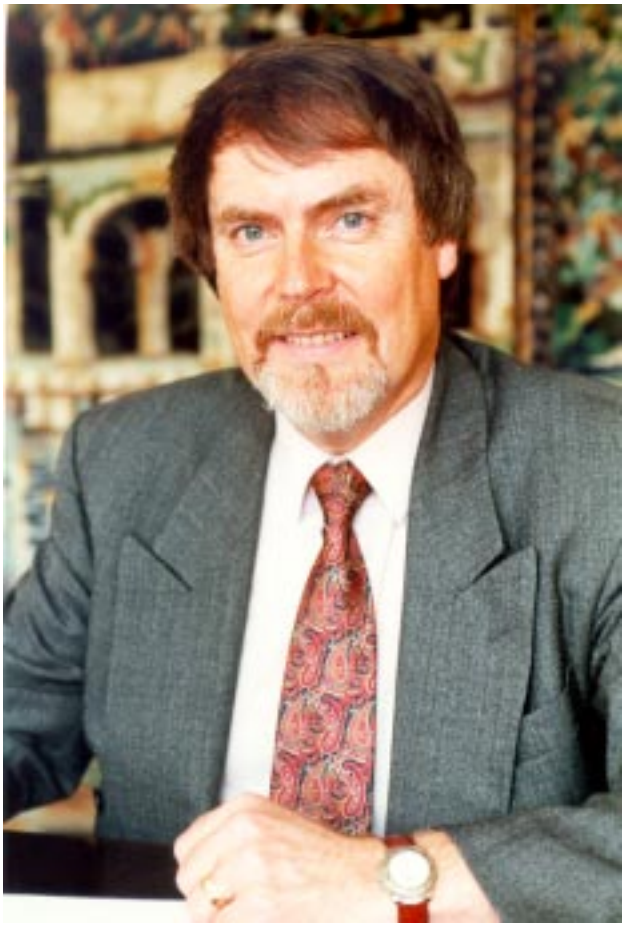
■ ***Is a zero nominal growth budget in step at all with the current growth of the telecommunications industry?***

It was very clear from the budget that a number of the new initiatives agreed in Minneapolis to reflect the changes in the telecommunication environment needed to be financed. There was also a clear indication as to how much those new initiatives would cost. At the same time, there was a presentation of the fact that some activities would need to be either down-scaled or even curtailed altogether to ensure that those new initiatives which were considered to be of high priority were financed properly. Again, I come back to the question of the linkage between financial, strategic and operational planning. With these management tools at the disposal of the new management team, it will be easier to make the kinds of decisions that will be necessary in order to maintain the zero nominal growth budget.

■ ***What are your thoughts on the new concept of cost recovery on certain ITU products and services as a way of strengthening the financial base of the Union?***

The introduction of this new concept in ITU is, in some sense, the culmination of a process that really began with the High Level Committee and evolved through the decisions taken by the Additional Plenipotentiary Conference in Geneva (1992) and the Plenipotentiary Conference in Kyoto (1994). We need to recall that Resolution 39 of Kyoto specifically focused on the need to find ways and means of strengthening the financial base of the Union and resulted in the establishment of an informal group and later, the ITU-2000 Group. I think this is a milestone, based on how the discussions that have taken place in the past have evolved.

Indeed, the decisions taken on cost recovery, as far as satellite network filings are concerned, was an important step in the process of stabilizing the financial base of the Union. There was a clear expectation at the Kyoto Plenipotentiary Conference and in its Strategic Plan that the contributions from Member States and Sector Members had reached a plateau and were likely to decline. The fact that those contributions declined by 3.4 per cent after Minneapolis is a clear testimony to that expectation.



Bruce Gracie *Photo: A. de Ferron (ITU 990041)*

So we really need to continue to explore ways and means of stabilizing the financial base of the Union in future. In this respect, the decision of the Council to establish a new Working Group on ITU Reform has recognized, within its terms of reference, the importance of considering ways of improving the budgetary system of the Union and strengthening its financial base, including the review of the contributions of both Member States and Sector Members. ■

Further moves to strengthen ITU's regional presence

Interview with Pape Gorgui Touré (Senegal)

Director and Counsellor to the Director-General of the *Société nationale des télécommunications* (Sonatel), responsible for relations with ITU

■ ***Mr Touré, you successfully chaired a working group on the regional presence. What were the issues involved?***

As you know, the Plenipotentiary Conference (Minneapolis, 1998) adopted Resolution 25 on strengthening the regional presence of the International Telecommunication Union (ITU). In this regard, the conference instructed the Council not only to define more clearly the role, functions and objectives of the regional presence but also to take the necessary measures to implement that resolution.

P. G. Touré

Photo: A. de Ferron (ITU 990042)

In particular, Resolution 25 instructs the Council to include the regional presence as an item on the agenda of each session of the Council, in order to examine its evolution and adopt decisions for its continuing structural adaptation and operation. The aim is to enable the regional presence to meet the requirements of both Member States and Sector Members, to give effect to the decisions adopted at meetings of ITU and its world conferences and assemblies, to improve coordination between ITU and regional and subregional telecommunication organizations and, finally, to ensure complementarity between the activities of the ITU and these organizations to avoid duplication and inefficient use of their resources. In the group set up by the Council and which I chaired, we devoted ourselves to considering each of these points with a view to interpreting them and finding specific responses to them.

■ ***What was the result of your negotiations?***

The result was quite encouraging. If I apply your question strictly to the work we were asked to do as a group set up to fulfil a precise mandate, we proposed a resolution that was adopted unanimously and without reservation as Resolution 1143 by the Member States of the Council. This resolution is based on the following considerations:

The regional presence is often confused with the establishment of regional ITU offices, whereas in fact this presence represents a global function, or indeed a global project, which includes both headquarters activities and those of the regional offices. In Resolution 1143 we stressed that the regional presence, as an integral part of the Union's overall activities, should reflect a "project management" approach based on operational processes that are coordinated between headquarters and the regional offices.

To this end, the regional offices must draw up their draft operational plans, taking account of the specific conditions of each region, within the framework of the operational plan and guidelines of the Telecommunication Development Bureau (BDT), and indeed of the ITU Tele-

communication Development Sector (ITU–D) in general. These guidelines are set out in Resolution 71 of Minneapolis, concerning the Strategic Plan for the Union for the period 1999–2003.

We decided that the functions of the regional presence stemming from ITU's dual role as a United Nations specialized agency and executing agency must be clarified. Similarly, the activities described in the Union's Strategic Plan for 1999–2003 must be made clear and implemented.

In the context of the regional presence, we want to see the enhancement of developing country and Sector Member participation in all the activities of the Union, including those of the Telecommunication Standardization Sector (ITU–T) and Radiocommunication Sector (ITU–R).

■ ***What are the Council's expectations with respect to BDT?***

Resolution 1143 instructs the Director of BDT, in collaboration with the Secretary-General and the Directors of the Radiocommunication Bureau (BR) and Telecommunication Standardization Bureau (TSB), to accomplish a number of tasks. Let me just highlight three of them.

One is to establish closer contacts with Member States, ITU–D Sector Members and various telecommunication operators from each region in order to gain a clearer understanding and take account of what they expect from the regional presence.

The second is to draw up and submit an action plan to the Telecommunication Development Advisory Group (TDAG), to give effect to Resolution 25. I would recall that this resolution instructs the Director of BDT to set the end of the year 2000 as the time-limit for strengthening of the regional presence, under an action plan for gradual adjustment of the existing structure of the regional presence, and to ensure a better balance of work between headquarters and the regional offices in accordance with the Valletta Action Plan.

The third is to make the necessary adjustments to BDT's structure, both at headquarters and in the field, in order to balance the strengthening of regional resources (including through the transfer of resources from headquarters to the regional offices) with improved competence in the areas of backstopping, monitoring and coordination at headquarters.

The Council also requests that the results of the work implemented be taken into account in setting the objectives for the year to come. This means that each year the Council will be able to monitor systematically the progress of the work of the regional presence as a whole.

BDT is doing a great deal, but perhaps communication to the Council is not always very clear. Drawing up the objectives and gearing action plans to them will now enable the Council to have a clearer picture of what has actually been achieved.

■ ***Can you describe some of the activities expected from the regional presence?***

Yes, gladly. We have defined a number of generic activities which are set out in an annex forming an integral part of Resolution 1143. In particular we expect the regional presence to:

❑ Inform policy-makers, regulatory bodies and telecommunication operators about world trends in telecommunication policy and management (e.g. organization of the regulatory framework and regulation of the telecommunication market, global mobile personal communications by satellite (GMPCS), electronic commerce, IMT-2000, impact of the Internet protocols and the General Agreement on Trade in Services (GATS)).

❑ Help telecommunication operators develop a better understanding of the administrative regulations (Radio Regulations and International Telecommunication Regulations).

❑ Promote more widespread use of new technical standards in appropriate institutions and organizations that may have an effect on telecommunication network development.

❑ Support telecommunication operators in the planning and the technical and commercial development of telecommunication networks and services, *inter alia*, by promoting technology transfer and promoting progressive industrialization; inform financial institutions with a view to their providing the necessary support for telecommunication projects which have social benefits.

❑ Support the efforts of regulatory bodies, appropriate institutions and organizations and telecommunication operators in introducing accounting and tariff systems for telecommunication services (e.g. separating accounts, cost allocation, universal service and interconnection).

❑ Promote operating and maintenance standards for new telecommunication networks among telecommunication operators and appropriate institutions and organizations.

❑ Act locally as executing agency and resource mobilizer for regional and local projects.

❑ Participate in preparatory work for ITU conferences and assemblies, taking account of the specific needs of each region.

■ ***What budget appropriation has been passed by the Council for all of these activities?***

Overall, the amount earmarked for the 2000–2001 biennium is CHF 11.3 million. This is a small increase by comparison with the previous biennium which does not allow all the decisions already taken in the context of strengthening the regional presence to be implemented. However, I think that we are fortunate to have a new team at ITU headquarters which has shown great willingness and a firm intention to optimize resources and ensure that those concerned are able to do a lot more with the resources available.

The Director of BDT has already made a start, by giving greater responsibility to the regional offices, asking them — for example with regard to Centres of Excellence and other activities — to draw up projects themselves including joint projects with the Members from their respective regions, international, subregional and regional organizations, and submit them as an integral part of the plans that BDT is implementing, in particular the Valletta Action Plan.

Although Resolution 1143 makes no claim to being revolutionary, it does define an effective mechanism which will allow an activity report on the regional presence to be placed before the Council each year.

The definition of this new mechanism coincides with the entry into office of an ambitious and hard-working new team. This gives ITU a great opportunity to enhance its leading role at the forefront of global telecommunications. ■

European telecommunication operators welcome ITU Council decisions

The European Public Telecommunications Network Operators' Association (ETNO), which represents 46 telecommunication operators from 33 European countries, has welcomed the initiatives taken by the ITU Council and the Secretary-General, Yoshio Utsumi, to enact a number of the resolutions passed by the Plenipotentiary Conference (Minneapolis, 1998). Examples include the introduction of greater transparency in the 2000–2001 budget, and the transfer of financial resources from the General Secretariat towards the individual Sectors of the Union (notably the Telecommunication Standardization Sector). In addition, the Council has agreed to establish a working group to examine further reforms.

The value of these initiatives will of course depend on the final results. ETNO as an organization, and its individual members, intend to play a constructive role in a number of areas, particularly in the Working Group on ITU Reform. As part of this effort, close liaison will be maintained with other interested organizations representing both Member States and Sector Members.

The continued reform of the ITU is considered by ETNO as vital for the future of the Union, as it and its membership face up to the challenges of the next decade, not to mention the next millennium. To further strengthen the relationship between ITU and ETNO, a meeting is to take place between ITU's elected officials and ETNO representatives in September 1999. — *ETNO press release, 4 August 1999.*

Gender perspective in the work of ITU*

Angela E. V. King

Special Adviser to the United Nations Secretary-General on Gender Issues and Advancement of Women

A. E. V. King

Photo: A. de Ferron (ITU 990043)

I would like to extend my best wishes to the ITU Council in its deliberations on the issue of integration of a gender perspective in its work and pay tribute to Yoshio Utsumi, ITU Secretary-General, and Roberto Blois, Deputy Secretary-General, for their support and personal commitment to gender issues.

It is encouraging to see that ITU is on the right course in mainstreaming gender in its activities. A strong political commitment was made at the Plenipotentiary Conference [Minneapolis] and the World Telecommunication Development Conference [Valletta] in 1998. An institutional framework has been created: a Group on Gender Issues established, and a Focal Point appointed.

For the first time, in 1999, ITU participated in the fourth meeting of the Inter-Agency Committee on Women and Gender Equality (IACWGE) of the Administrative Committee on Coordination (ACC), which I chair. ITU's initiatives in mainstreaming a gender perspective in its work related to community telecentres, telecommunications and rural development and the gender impact of telecommunication policies deserve special attention.

[...] One of the greatest divides in the world today — between rich and poor — is that developing countries, especially the least developed ones and their peoples not only lack capital but lack the knowledge and information required to climb out of poverty.

Barriers continue to confront women and girls seeking training in science and technology. In the North and the South, women are excluded from the design and shaping of information technology.

Bearing in mind the importance of advances in technology which created an instant global communication network with a direct impact on the lives of women and men of all ages, the Beijing Platform for Action set a number of targets in the area of telecommunications. These include: women whose skills, knowledge and information technology need enhancement; whose participation in decision-mak-

* This message was delivered to the ITU Council on 22 June 1999, on behalf of Ms King, by Hanne T. Laugesen, Chief of the Conferences Department and Focal Point for Gender Issues in ITU.

ing in new technologies should be encouraged and expanded, and whose educational and training programmes on the use of new technologies of communication, cyberspace and satellite should be developed.

Gender equality means equal empowerment, access and participation of both sexes in all spheres of public and private life. Although *de jure* gender equality heralds equal rights, opportunities and treatment, it does not automatically lead to *de facto* equality. We need to adopt an approach focussing on women's and men's roles and responsibilities as an integral part of policy analysis.

Within the United Nations the systematic application of a gender perspective in all policies and programmes is the primary strategy for ensuring that women's as well as men's concerns and experiences are integral to the design, implementation, monitoring and evaluation of policies and programmes in all spheres.

The Beijing Platform for Action calls on governments and other actors "to promote an active and visible policy of mainstreaming a gender perspective in all policies and programmes, so that before decisions are taken, an analysis is made of the effect on women and men respectively". Gender mainstreaming is thus the process of analysing women's and men's socially ascribed roles and responsibilities — their gender roles — to see an impact on their enjoyment of rights, access to opportunities and resources, and participation in decision-making at all levels.

The Economic and Social Council (ECOSOC) took this policy a step further in 1997 highlighting several aspects. It emphasized the responsibility and accountability of senior managers, the importance of adopting mainstreaming policies and strategies and institutional directives, and encouraged the improvement of tools for gender mainstreaming, such as gender analysis, data desegregated by sex and gender-sensitive budgeting.

The mainstreaming approach to gender is increasingly apparent throughout the work of the United Nations system. At its 1999 session [July], for example, ECOSOC [was to consider], in its high level segment, the role of employment and work in poverty eradication: the empowerment and work and advancement of women.

At the interorganizational level, in its 1998 Commitment for Action on Gender Equality and Mainstreaming — the ACC, comprising heads of agencies under the Secretary-General, as chair — committed itself to ensure that organizational policies, budgets and resource allocations reflect their commitment to gender equality. Thus, the responsibility for translating gender mainstreaming rests at the highest level.

The gender mainstreaming approach and gender issues were discussed in depth by ITU on International Women's Day (8 March 1999), marked for the first time in the Union's 134-year long history. A candid dialogue on ITU's achievements and challenges set the stage for future action. What are the needs of women in telecommunication? What are the targets and expected results? What are the most suitable policy areas? How do we use tools such as gender analysis and planning, sex desegregated statistics, surveys and forecasts, gender impact assessments, performance indicators, etc.? How do we hold management and staff accountable?

This brings us to a critical issue of resources for gender mainstreaming. No matter how enthusiastic staff and management are about gender mainstreaming, without sufficient resources, such an undertaking would be impossible.

Gender mainstreaming should guide all stages of the policy and wide-ranging programme of ITU activities. It is probably impractical to begin in all programmed areas at the same time. It might diffuse resources and weaken the process. The starting area or areas must be well chosen so as to ensure a strategic focus and lead to a successful completion. Sufficient resources and capacity building are essential conditions for success. The benefits, however, of empowering women, who represent half of the world's population, greatly outweigh the initial investments and the efforts involved in gender mainstreaming. ■

ITU Secretary-General honours Ambassador Anthony Hill

ITU Secretary-General, Yoshio Utsumi, has awarded the ITU Silver Medal to Anthony Hill, the outgoing Ambassador and Permanent Representative of Jamaica to the Office of the United Nations and its Specialized Agencies in Geneva.

Ambassador Hill received this award, at the ITU headquarters on 12 August 1999, for his outstanding leadership as Chairman of the Focus Group on Accounting Rate Reform. The Group was set up by the Second World Telecommunication Policy Forum (Geneva, March 1998) under the auspices of Study Group 3 of ITU's Telecommunication Standardization Sector, which deals with tariff and accounting principles, including related telecommunications, economic and policy issues. The mandate of the Focus Group was to help accelerate the reform of the international accounting and settlement system.

The Forum, on the topic of "Trade in Telecommunication Services", brought together more than 600 senior telecommunication officials and regulators from around the world. The Forum recognized that while the accounting rate regime had served the world well, it would not be sustainable without a move towards cost-oriented rate levels in the new international telecommunication environment, which is marked by trends such as market liberalization, privatization, increasing competition and globalization. Opinion C, which laid the foundation of the Focus Group, was one of the three landmark opinions endorsed by the Forum in a bid to ease the transition to the new environment.

The Focus Group completed its mandate in November 1998, with a set of proposals on transitional arrangements to cost-orientation. Thanks to these proposals and other studies, Study Group 3 was able to agree, in June 1999, on a set of guidelines for bilateral negotiations of transitional arrangements towards cost-orientation between 1999 and 2001 (and perhaps beyond).

Presenting Mr Hill with the medal, Mr Utsumi said: "The proposals developed by the Focus Group, which you so ably chaired, have contributed greatly to achieving new guidelines that will go a long way in ensuring that all countries, big and small, are able to play their full role in any decisions made on the reform of the accounting rate system."

Mr Yoshio Utsumi and Ambassador Anthony Hill

Photo: A. de Ferron (ITU 990048)

Ambassador Hill declared: "I take this opportunity to express, in my official capacity and personally, my sincere appreciation for the full cooperation and support of the International Telecommunication Union in promoting the interests of the international community. We have benefited from your leadership and commitment."

For more information on the work of the Focus Group, please see the website at: http://www.itu.int/intset/focus/index.html. ■

Texte Membres: 2 pages face-à-face

Texte Membres: 2 pages face-à-face

From official sources

INSTRUMENTS AMENDING THE CONSTITUTION AND THE CONVENTION OF THE ITU (GENEVA, 1992), KYOTO, 1994

The Government of **Bulgaria** has ratified the above-mentioned Instruments amending the Constitution and Convention.

The instrument of ratification was deposited with the General Secretariat of the Union on 7 June 1999.

NEW MEMBERS

Development Sector

AULM S.A. (Geneva, Switzerland), Hispano-American Association of Research Centres and Telecommunications Enterprises (AHCIET) (Madrid), Instituto Nacional de Investigación y Capacitación de Telecomunicaciones (INICTEL) (Lima), International Bar Association (IBA) (London), Japan Telecom Co., Ltd. (Tokyo), Japan Telecommunications Engineering and Consulting Service (Tokyo), Kazakhtelecom (Almaty City, Kazakstan), SimplyTV (New York, NY) and *Telecom Egypt (Cairo)* have been admitted to take part in the work of this Sector.

Radiocommunication Sector

International Bar Association (IBA) (London), Microsoft Corporation (Long Valley, NJ), RFC Holdings, Inc. (San Francisco, CA), Society of Motion Picture and Television Engineers (SMPTE) (White Plains, NY), StarHub Pte Ltd. (The Cuppage, Singapore), World Broadcasting Unions — Technical Committee (WBU-TC) (Toronto, Canada), Telecom Egypt (Cairo) and *World DAB Forum (London)* have been admitted to take part in the work of this Sector.

Standardization Sector

Burr-Brown Corporation (Tucson, AZ), Excess Bandwidth Corporation (Santa Clara, CA), Facilicom International (Washington, D.C.), International Bar Association (IBA) (London), Orckit Communications Ltd. (Tel-Aviv, Israel), StarHub Pte Ltd. (The Cuppage, Singapore) and *Telecom Egypt (Cairo)* have been admitted to take part in the work of this Sector.

New denominations

Bosch Telecom, Inc. (Richardson, TX), which participates in the work of the Radiocommunication Sector has changed its name. The new denomination is: **Spectrapoint Wireless LLC.**

GPT Limited (Coventry, United Kingdom), which participates in the work of the Standardization Sector has changed its name. The new denomination is: **Marconi Communications Limited.**

Optical Fibres (Deeside, United Kingdom), which participates in the work of the Standardization Sector has changed its name. The new denomination is: **Corning Optical Fibres.**

VACANCY NOTICES

Circular letters (via facsimile) which have been sent to all Member States and Sector Members of the Union announce the following vacancies:

• one post of **Specialist in new information and communication technologies/services (Valletta Action Plan (VAP 3): rural development and universal service/access), grade P.4,** to be filled in the Telecommunication Development Bureau (BDT), Policies, Strategies and Programming Department (PSP), as soon as possible for a period of two years with possibility of extension (circular letter No. 018 of 7 July 1999; vacancy notice No. 11–1999 ITU; final date for submission of applications: 7 September 1999);

• one post of **Head, Validation Group, grade P.3,** to be filled in the Radiocommunication Bureau (Space Services Department (SSD)), as soon as possible for a period of two years with the possibility of conversion to a Managed Renewable Term (MRT) appointment (circular letter No. 019 of 7

From official sources *(continued)*

July 1999; vacancy notice No. 12–1999 ITU; final date for submission of applications: 7 September 1999);

• one post of **Head of the ITU Regional Office for Africa, grade D.1,** to be filled in the Telecommunication Development Bureau (BDT), Field Operations Department (FOP) as soon as possible for a period of one year with possibility of extension (circular letter No. 020 of 15 July 1999; vacancy notice No. 13–1999 ITU; final date for submission of applications: 15 September 1999);

• one post of **Helpdesk Supervisor, grade P.2,** to be filled in the Information Services Department (IS), as soon as possible for a period of one year with the possibility of extension (circular letter No. 021 of 15 July 1999; vacancy notice No. 14–1999 ITU; final date for submission of applications: 15 September 1999);

• one post of **Head, Registration Group, grade P.3,** to be filled in the Radiocommunication Bureau, Space Services Department (SSD), as soon as possible for a probationary appointment (circular letter No. 022 of 15 July 1999; vacancy notice No. 15–1999 ITU; final date for submission of applications: 15 September 1999).

Detailed applications with ITU personal history form should be submitted to the General Secretariat of the ITU, Place des Nations, CH–1211 Geneva 20 (Switzerland), no later than the final dates mentioned above.

Vacancy notices and personal history forms are available on the ITU Web site, under the "ITU General Secretariat" section: http://www.itu.int/.

Publications

The following letters indicate the languages in which documents are published:

F for French
E for English
S for Spanish
R for Russian
C for Chinese
A for Arabic

Prices are in Swiss francs (CHF).

A comprehensive list of all the publications of the Union will be supplied, free of charge, from the ITU Sales and Marketing Service, Place des Nations, CH-1211 Geneva 20 (Switzerland). Fax: +41 22 730 5194.

Final Acts of the Plenipotentiary Conference (Minneapolis, 1998) — Instruments amending the Constitution and the Convention of the International Telecommunication Union (Geneva, 1992) as amended by the Plenipotentiary Conference (Kyoto, 1994) — Rules of Procedure, Decisions, Resolutions
(92-61-07641-6)
Separate editions in F, E, S, (CHF 48)

Telecommunication Standardization Sector

ITU–T Recommendation F.600 (09/98)
Service and operational principles for public data transmission service
Separate editions in F, E, S (CHF 9)

ITU–T Recommendation G.826 (02/99)
Error performance parameters and objectives for international, constant bit rate digital paths at or above the primary rate
Separate editions in F, E, S (CHF 17)

ITU–T Recommendation G.852.6 (03/99)
Enterprise viewpoint for trail management
Separate editions in F, E, S (CHF 12)

ITU–T Recommendation G.852.10 (03/99)
Enterprise viewpoint for pre-provisioned link connection management
Separate editions in F, E, S (CHF 9)

ITU–T Recommendation G.852.12 (03/99)
Enterprise viewpoint for pre-provisioned link management
Separate editions in F, E, S (CHF 9)

ITU–T Recommendation G.853.6 (03/99)
Information viewpoint for trail management
Separate editions in F, E, S (CHF 9)

ITU–T Recommendation G.983.1 (10/98)
Broadband optical access systems based on Passive Optical Networks (PON)
Separate editions in F, E, S (CHF 49)

Publications *(continued)*

ITU–T Recommendation I.322 (02/99)
Generic protocol reference model for telecommunication networks
Separate editions in F, E, S (CHF 17)

ITU–T Recommendation I.359 (02/99)
Accuracy and dependability of ISDN 64 kbit/s circuit mode connection types
Separate editions in F, E, S (CHF 9)

ITU–T Recommendation I.432.3 (02/99)
B-ISDN user-network interface — Physical layer specification: 1544 kbit/s and 2048 kbit/s operation
Separate editions in F, E, S (CHF 12)

ITU–T Recommendation I.432.4 (02/99)
B-ISDN user-network interface — Physical layer specification: 51 840 kbit/s operation
Separate editions in F, E, S (CHF 12)

ITU–T J-series Recommendations Supplement 2 (11/98)
Guidelines for the implementation of Annex A of Recommendation J.112, "Transmission systems for interactive cable television services"
Example of Digital Video Broadcasting (DVB) interaction channel for cable television distribution
Separate editions in F, E, S (CHF 17)

ITU–T Recommendation J.1 Amendment 1 (11/98)
Terminology for new services in television and sound-programme transmission
Separate editions in F, E, S (CHF 12)

ITU–T Recommendation J.112 (03/98)
Transmission systems for interactive cable television services
Separate editions in F, E, S (CHF 96)

ITU–T Recommendation K.37 (02/99)
Low and high frequency EMC mitigation techniques for telecommunication installations and systems — Basic EMC Recommendation
Separate editions in F, E, S (CHF 12)

ITU–T Recommendation Q.763 Addendum 1 (05/98)
Signalling System No. 7 — ISDN user part formats and codes
Separate editions in F, E, S (CHF 9)

ITU–T Recommendation Q.1220 (09/97)
Q.1220-series Intelligent Network Capability Set 2 Recommendation structure
Separate editions in F, E, S (CHF 17)

ITU–T Recommendation X.36 Amendment 3 (09/98)
Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for public data networks providing frame relay data transmission service by dedicated circuit
Amendment 3: Frame discard priority, service classes, NSAP signalling and protocol encapsulation
Separate editions in F, E, S (CHF 17)

ITU–T Recommendation X.292 (09/98)
OSI conformance testing methodology and framework for protocol Recommendations for ITU–T applications — The Tree and Tabular Combined Notation (TTCN)
Separate editions in F, E, S (CHF 96)

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- by cheque;
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A bookstall is open at ITU headquarters in Geneva from 08h30 to 12h00 and from 13h30 to 17h00.

Annonce BDT

❑ **BT's ADSL order to boost information society.** The United Kingdom is poised to enter rapidly into the information society, following BT's multi-million pound order for asymmetric digital subscriber line (ADSL) equipment from its strategic suppliers *Fujitsu* and *Alcatel.* The order, which was placed in early July 1999, will enable ordinary telephone lines to be transformed into high-speed digital channels to the Internet and multimedia services at up to ten times the speed achieved across normal telephone lines.

This order marks the next step in BT's previously-announced GBP 5 billion investment programme to revolutionize communications and electronic commerce. Equipment supplies began in July and will continue through the spring of 2000 to cover the first phase of BT's plan to provide ADSL services across the United Kingdom. Deployment is initially for 400 exchanges, covering nearly 6 million households and businesses.

Sir Peter Bonfield, the company's chief executive, said: "BT intends to be at the heart of the information society, making it possible for a wide range of independent service providers to connect their customers over our world class networks." — *BT.*

❑ **Fujitsu and Westell expand strategic alliance.** Westell Technologies, Inc. and Fujitsu Telecommunications Europe Limited (FTEL) have announced that they have entered into a broad strategic agreement on the development and manufacturing of asymmetric digital subscriber line (ADSL) and high-speed digital subscriber line (HDSL) products. As part of the agreement, FTEL will fund Westell's future development of ADSL, and the two companies will continue working together to enhance and develop new products for both ADSL and HDSL applications. In particular, FTEL will receive a long-term licence of Westell's intellectual property for ADSL and HDSL deployment in its products. — *Fujitsu.*

❑ **INTELSAT employee runs 3000 miles across America to benefit children's cause.** A satellite engineer of the International Telecommunications Satellite Organization, Earl Main, is running across the United States to achieve his goal of USD 300 000 for the Children's National Medical Center in Washington, D.C., so that disadvantaged children can receive needed medical attention.

Earl Main, who began his journey on Memorial Day (30 May 1999) from San Francisco (California), will pass through 13 States and is expected to return to his home base in Washington, D.C. on Labour Day (6 September 1999), where other INTELSAT employees will greet him. They will join him in the various stages of the run in the metropolitan area and finally to Ocean City (Maryland).

INTELSAT is supporting Main's lifelong dream to run across the United States and to benefit children's causes, by allowing him the time required to complete his run and making donations to the cause. Main is personally funding the trip, which costs some USD 15 000. — *INTELSAT.*

❑ **Convergys and IBM form global alliance for billing and customer care.** Convergys Corporation has announced that it is teaming up with IBM to market and deliver comprehensive, integrated billing and subscriber management solutions for the wireless industry. These solutions combine Convergys' wireless billing and customer care applications with IBM's global services and systems integration capabilities. Working together, the two companies plan to give wireless service providers functionality such as real-time client/server architecture and high scalability in a wireless billing and customer care market expected to grow into a USD 5 billion industry in 1999. — *Convergys.*

❑ **Eastern Europe at the gate of electronic business.** Driven by information technology (IT) market growth, the electronic commerce wave in Eastern Europe is expected to grow steadily, according to speakers at the Eastern European IT Forum organized in Prague by the International Data Corporation (IDC). As a region in transition, Eastern Europe is currently in a period of consolidation, featuring market stagnation.

According to IDC, the value of the total IT market in the region is expected to remain unchanged for the period up to 2000. However, 2001 is forecast to experience high growth, reaching the levels achieved in 1997 by Western Europe. The Russian market alone is expected to grow from just under 1 million to more than 3 million users. Sources of IT market growth in Eastern Europe include economic reform and growth, foreign direct investment, IT technology change, and telecommunication development. Major obstacles to

growth are a small home market, high access costs, and security issues. — *IDC.*

❑ **SingTel and StarHub sign interconnect agreement.** The Telecommunication Authority of Singapore (TAS) has announced that it has received a complete interconnect agreement signed by Singapore Telecom and StarHub. As a first step, the two companies had submitted the main interconnect agreement to TAS on 31 March 1999. Both companies have now completed their discussions for the operational details relating to interconnection capacity requirements and provisioning, interoperator billing and settlement procedures, interworking test specifications and testing, as well as the leasing of the local loop. These details have been included as annexes to the main agreement.

Efficient and effective interconnection between Singapore's two fixed network operators will enable consumers to enjoy transparent and seamless telecommunication services, regardless of the networks to which they are connected directly. Consumers can all look forward to a wider range of services at more competitive prices when competition in the country's basic telecommunication market starts from 1 April 2000. — *TAS.*

❑ **Iridium withdraws from Claircom acquisition.** Iridium LLC has announced that it has reached agreement with AT&T Wireless Services and Rogers Cantel to terminate the contract announced in late 1998 for the purchase of Claircom Communications Group, Inc. Although Iridium remains confident regarding the future of Claircom's aeronautical communications business, the company determined that acquisition would not be consistent with current commercial priorities. Iridium became the world's first global satellite phone and paging company on 1 November 1998. — *Iridium.*

❑ **Teledesic signs launch contract with Lockheed Martin.** Under this contract, Lockheed Martin will use two heavy-lift launch vehicles, the *Proton-M* and the *Atlas-V* to launch a significant portion of Teledesic's constellation of low-Earth orbit satellites.

The contract calls for three Proton and three Atlas launches, with options for five additional launches on each vehicle. In addition to Proton-M and Atlas-V, the company is evaluating other launch vehicles from leading providers around the world.

Meanwhile, Teledesic has completed and signed its system agreement with Motorola, the company's prime contractor, after more than a year of close collaboration and detailed design work. Motorola is responsible for leading the engineering and construction of the Teledesic Network, the world's first advanced telecommunications network designed to provide high-speed data connections to businesses, institutions and individuals on a global basis. Details of the agreement and the enhanced system design will be made public once Teledesic and Motorola complete their ongoing three-month high-level review and finalize the programme's major domestic and international subcontractors.

Motorola has made a USD 150 million cash payment to Teledesic, following the completion of the

Sarajevo: Internet and information systems

The Faculty of Electrical Engineering, University of Sarajevo, will organize an International Symposium on "Internet and information systems" from 4 to 6 October 1999.

The symposium will be held in Sarajevo under the high sponsorship of the Prime Minister of the Government of the Federation of Bosnia and Herzegovina, Edhem Bicakcic.

The aim of this event is to present new Internet-related techniques and technologies. The programme includes:

Internet today — Architecture and services
- Hardware and software engineering over the Internet
- Interaction: Internet-telecom
- Distance learning
- Standards and legislation

Internet development trends

Internet and business information systems
- Distribution versus integration

Internet in Bosnia and Herzegovina
- State of the art
- Development trends
- Informatics and computing centres

For more information, please contact: "Diana Protic, Faculty of Electrical Engineering, Skenderija 70, 71000 Sarajevo (Bosnia and Herzegovina). Tel./fax: +387 71 654 972. E-mail: diana@utic.net.ba".

system agreement, as part of its previously-announced investment in the company. Teledesic has made a down payment of 250 million to Motorola for its work as prime contractor. The privately owned Teledesic company has raised additional equity investments, bringing the total amount raised to more than 1.5 billion. — *Teledesic.*

❑ **Marconi signs SDH contracts in Bahrain.** The Bahrain Telecommunications Company (BATELCO) has purchased synchronous digital hierarchy (SDH) transmission equipment from Marconi Communications in contracts estimated at some USD 5 million. These contracts will double the number of sites which offer SDH connections, extending significantly BATELCO's capabilities for traffic management. The network upgrade follows the growing volume of Internet traffic in Bahrain and increased demand for intelligent network functionality to support the explosive growth of the pre-paid calling card, GSM and other services. — *Marconi.*

❑ **EPPA and ERMES merge for future of paging industry.** The future of the European paging industry looks brighter following the merger of its leading associations: the ERMES MoU Association and the European Public Paging Association. Following meetings of the two associations in Prague, both parties agreed unanimously that their members would be best served by creating one strong voice for European paging.

This unification and concentration of resources is expected to provide a powerful driving force in taking paging markets forward by introducing the services needed to attract new customers and maintain the current user base. For too long, the growth of the European paging industry had been inhibited by internal wrangling. With the merger, technical developments in paging can be implemented more quickly, bringing increased benefits to operators, manufacturers and customers. — *EPPA.*

❑ **Cap Gemini and INTERSHOP to jointly market electronic commerce solutions.** Cap Gemini, a systems integration and management consultancy, and INTERSHOP Communications Inc., a developer and distributor of software for business-to-business and business-to-consumer solutions, have announced a joint marketing agreement where the two companies will share sales opportunities worldwide on a non-exclusive basis. Earlier collaborative work which the two companies have undertaken for some of their Internet service provider clients include a project in which Cap Gemini and INTERSHOP integrated virtual navigation features into an on-line directory service, ticket-purchasing, publishing of government communications, and the creation of a regional gateway for Internet retailers.

According to Cap Gemini, telecommunication operators must provide more than communications bandwidth to electronic commerce players. They need to provide value-added services such as electronic commerce site hosting and content aggregation, either by building infrastructure themselves, or by partnering with service providers. Through the agreement, the two companies will help telecommunication operators and service providers define their electronic commerce strategies, and design their online services by providing them with the expertise to integrate INTERSHOP's technology into their information systems. The INTERSHOP software suite is designed to meet requirements of single store merchants as well as those of large Internet service providers hosting thousands of online stores. — *Cap Gemini/ INTERSHOP.*

❑ **The Netherlands: Nozema selects ECI Telecom for its digital terrestrial television network.** ECI Telecom Ltd. has announced that it has signed a contract with *Nozema N.V.* (Netherlands) to supply a trial network for digital terrestrial television in that country. Under the terms of the agreement, ECI Telecom will supply its *Hi-TVTM* systems and asynchronous transfer mode (ATM) switches. Hi-TVTM is an integrated television over an ATM gateway that enables television professionals to transport studio quality television between sites in compressed, uncompressed, real-time and non real-time forms over permanent or dial-up wide-area network connections.

Hi-TVTM systems are designed for applications that require high-quality television to be transported over broadband networks. These applications include television contribution and distribution systems operated by telecommunication service providers or by television broadcasters. ECI Telecom's Hi-TVTM systems are located in Hilversum and Lopik for testing and will be brought into service in 2000 in Hilversum,

Amsterdam and Haarlem, the densely populated western part of the Netherlands. — *ECI Telecom.*

❑ **Motorola makes world's first GSM-connected Internet call.** At a conference organized in London by Motorola Inc.'s Network Solutions Sector (NSS) and attended by more than 180 GSM network operators from 75 countries, the company gave participants a glimpse of the future. Motorola NSS customers were able to place the world's first voice calls via Internet Protocol (IP) links using a Motorola GSM cellular phone.

The first test call was made from Motorola's worldwide GSM headquarters in Swindon (United Kingdom) to a research and development centre in Chicago (United States), using the company's data intranet. The IP backhaul network was used to transmit both GSM signalling and voice packets within the GSM base station subsystem. Mobile voice and data signals are currently carried using circuit-switched bearers, with a channel set-up and maintained for the duration of a call. IP translates voice and data into a number of "packets", each sent separately.

The convergence of GSM and Internet technology is expected to have perhaps the greatest impact on the mobile market the world has yet seen, offering unlimited and rapid access to a wealth of information and services. Network operators will see the opportunity for numerous new revenue streams, and subscribers will experience total mobility. — *Motorola NSS.*

❑ **Reuters, Sun and TIBCO expand their strategic business relationship.** Reuters Group PLC, Sun Microsystems, Inc., and TIBCO Software Inc. have announced a series of global initiatives aimed at accelerating the momentum for on-line delivery of financial solutions and data. As part of the expanded strategic relationship, Reuters named Sun as a preferred vendor for its hardware, infrastructure and data delivery systems, which distribute information to nearly 500 000 people every day. TIBCO also named Sun as a preferred platform for its*Tibco.net* Web hosting service.

Sun meanwhile agreed to take a minority stake in the form of common stock at TIBCO's initial public offering and licensed an array of TIBCO products for possible inclusion in the Sun and Sun-Netscape Alliance product lines.

This expanded relationship should allow the three partners to meet many of the technical challenges behind delivering network-based information services at a time when the entire financial services market is racing to "dot-com" their industry. — *Reuters/Sun/TIBCO.*

❑ **France honours Project Oxygen Vice-Chairman, Pekka Tarjanne.** The President of the French Republic, Jacques Chirac, has conferred the title of Commander of the *ordre de la Légion d'honneur* on Pekka Tarjanne, Vice-Chairman of Project Oxygen Ltd., the Bermuda-based company building the global optical fibre undersea cable network known as Project Oxygen Network.

This very high distinction, the rough equivalent of a British peerage, refers in particular to the worldwide achievements of Mr Tarjanne during his nine-year tenure (November I989–January 1999) as Secretary-General of the International Telecommunication Union. The insignia of this decoration was presented by the French Consul General in New York, Richard Duque, at the residence of the French Honorary Consul in Bermuda, Edgar Humann.

Receiving the award, Mr Tarjanne stated: "This great honour is particularly meaningful to me because I have received it for work I believe in so strongly, such as the realization of a truly universal information society. I am happy to be able to continue my efforts in this area at Project Oxygen and am deeply grateful to President Chirac and the French nation for conferring this honour upon me." — *Project Oxygen.*

❑ **Quintessent releases industry-first XML-based message adapters.** Quintessent Communications Inc. has announced the availability of its eXtensible Markup Language-based message adapters. XML is a technology standard that is endorsed by the World Wide Web Consortium (W3C), a group of technologists who develop Internet-related specifications. XML is considered as the language for Internet electronic commerce by the industry. It standardizes the description and inter-exchange of data describing electronic commerce documents.

XML allows developers to separate content from presentation and can store metadata (information about the content) along with the data itself. This enables developers to create self-describing data documents, providing a more powerful way to search key information in electronic commerce transactions. The

XML-based message adapters are the first to utilize XML as a meta-language to define and generate the electronic data interchange for trading partners and are expected to improve significantly the way carriers build, translate, validate and modify their electronic commerce data transmissions. — *Quintessent*.

❑ **The ITU meeting hosted by INTELSAT concludes with new draft recommendation.** The International Telecommunications Satellite Organization has announced that the meeting of Working Party 5/11, Study Group 11, of the ITU's Telecommunication Standardization Sector (ITU–T) concluded successfully with the development of a new draft recommendation concerning the convergence of traditional telephony and Internet protocol-based networks. Initiated by INTELSAT, the meeting was intended to extend a key broadband signalling protocol to allow the efficient operation of traditional public switched telephone network applications over the Internet, extranets and intranets. Commenting on the proceedings, Michel Garreau, Vice-President of Engineering and Programme Management at INTELSAT, stated: "We believe that the adoption of this recommendation will help ensure the continued viability of satellite-based telephony, conferencing, intelligent network, and transaction processing applications."

According to Kurt Waber, Chairman of Working Party 5/11 and Head of Engineering at *Swisscom*, "this recommendation will help bridge the gap between ITU and the Internet communities by streamlining the emerging Internet network protocols". Mark Neibert, Director of Technology and Standards at COMSAT Corporation, added: "This is a milestone agreement that will expand access to IP-based networks worldwide." — *INTELSAT*.

❑ **WTO agrees on Director-General succession.** Member governments of the World Trade Organization have agreed that Mike Moore, former Prime Minister of New Zealand, be appointed as Director-General for a term of three years, beginning on 1 September 1999. The General Council, WTO's executive body, further agreed that Mr Moore would be succeeded by Supachai Panitchpakdi, currently Deputy Prime Minister and Minister of Commerce of Thailand, also for a three-year term beginning 1 September 2002.

The decision on the successor to departing Director-General Renato Ruggiero was agreed by 134 member governments and comes after a year-long effort to appoint Mr Ruggiero's successor. Member governments have stressed that this unprecedented term-sharing arrangement does not constitute a precedent for future appointments of the Director-General and have agreed to work towards establishing "a comprehensive set of rules and procedures for such appointments" by the end of September 2000. — *WTO.*

❑ **Alcatel signs a contract with i-21 for a pan-European network.** *Alcatel* has concluded a contract worth USD 1.5 billion with new European operator *i-21 Future Communication* for the provision and integration of a pan-European optical fibre telecommunication network. Alcatel will provide i-21 with a full turnkey solution and will be responsible for all aspects of integration of the network, the greater part of which will be completed by December 2000.

Using Alcatel's dense wave division multiplexing (DWDM) technology, the 20 900 km network will connect 70 cities in 17 European countries, with 200 points of presence and over 8 million km of the latest generation of optical fibre. It will constitute a major broadband infrastructure for Europe and will offer operators and Internet service providers with a full range of services, including "dark" fibre, managed fibre and managed bandwidth. — *Alcatel*.

❑ **EUTELSAT and SES coordinate their satellite systems.** The European Telecommunications Satellite Organization and the *Société européenne des satellites* have concluded a comprehensive agreement for the coordination of their systems that will make for optimal use of the frequency spectrum for satellite broadcasting in Europe. The agreement, signed with the active participation of *Deutsche Telekom AG*, covers the current and planned use of certain orbital positions in the Ku frequency bands allocated to the two companies for transmissions over Europe.

The aim of this coordination is to create new markets for the two European satellite operators while continuing to ensure interference-free broadcasting over Europe for the enhanced benefit of millions of users. — *EUTELSAT/SES*.

❑ **Nokia paves the way to the mobile information society.** *Nokia* has announced excellent results for the second quarter of 1999 thanks to rapid and sustained growth. Net sales totalled EUR 4493 mil-

lion, an increase of 45 per cent compared to the second quarter of 1998. Operating profit increased by 56 per cent to EUR 881 million, resulting in an operating margin of 19.6 per cent. Net sales for the first half of this year totalled EUR 8363 million. Sales continued to grow rapidly in all geographic regions, with Europe accounting for 56 per cent of net sales, Asia Pacific for 23 per cent and the Americas for 21 per cent.

Orders for Nokia's infrastructure products have developed positively with increasing demand for its broadband and data transmission solutions. To keep up with the demand associated with strong GSM subscriber growth, operators have continued to expand the capacity of their networks and to upgrade them in order to offer emerging value-added data services.

At the same time, strong demand for Nokia's range of mobile phones has continued. Moreover, the *Connecting people* approach, an essential element of the Nokia brand, appears to have been very well accepted by the markets. — *Nokia*.

❑ **Telemedicine — a regional first in Caen (France).** A gynaecologist guiding a midwife from a screen located several kilometres from the ultrasound room, students in a lecture hall following the birth in real time — telemedicine is taking its first steps in Normandy. Known as *Topnorm*, the project to network all maternity units takes off in 1999 in six units and is due to be extended to 19 others in 2000.

France Télécom is participating in this step forward by providing the *Numéris* lines and two videoconferencing studios connected by means of a 384 kbit/s Numéris link. Such equipment could ultimately facilitate teleconsultation, online meetings of medical teams, telesurgery and teletraining on haematology and dermatology. — *France Télécom*.

Bill Long, in memoriam

William G. Long Jr. (United States), a long time participant in many activities of the International Telecommunication Union, passed away on 10 August 1999.

❑ Structural changes

in the Congo

The Ministry of Posts and Telecommunications announces the establishment of the *Direction générale de l'administration centrale des postes et télécommunications* (DGACPT), in accordance with Law No. 14-97 of 26 May 1997 and Decree No. 98-86 of 25 February 1998. This entity has taken over all the regulatory functions previously exercised by the *Office national des postes et télécommunications* (ONPT).

in Costa Rica

The *Instituto Costarricense de Electricidad* (ICE) was designated as the official representative of the Government of Costa Rica to the ITU.

in Malaysia

Malaysian Communications and Multimedia Commission, the new regulatory agency for the telecommunications, broadcasting and information technology sectors has been established. The regulatory functions of the former *Jabatan Telekomunikasi Malaysia* were transferred to the Commission.

in Russia

The State Committee for Communications and Informatization of Russia has been transformed into the *State Committee for Telecommunications*.

in Slovakia

On the basis of structural changes in the Ministry of Transport, Posts and Telecommunications, the former Telecommunications Division and Posts Division were put together. The name of the new division is *Post and Telecommunications Division*.

❑ Personnel changes

in Armenia

Mr Ruben Tonoyan has been appointed Minister of Post and Telecommunications. Mr Hayk Mnatsakanyan has been appointed Head of the International Relations Department, Ministry of Post and Telecommunications.

in Cape Verde

Mr António Joaquim R. M. Fernandes has been appointed Minister of Infrastructure and Housing.

in the Congo

Messrs Julien Epola and Vianney Ntsaa have been appointed General Director and Director for Telecommunications, *Direction générale de l'administration centrale des postes et télécommunications* (DGACPT), respectively.

in Costa Rica

Messrs Rafael Sequeira and Roger E. Echeverría have been appointed Executive President and Adviser, Technological Affairs (Coordinator, relations with the ITU), *Instituto Costarricense de Electricidad* (ICE), respectively.

in Djibouti

Mr Rifki Abdoulkader Bamakrama has been appointed Minister of Communication and Culture, responsible for Posts and Telecommunications, Government Spokesman.

in El Salvador

Ms María Eugenia Brizuela de Ávila has been appointed Minister of Foreign Affairs.

in Iceland

Mr Sturla Bodvarsson has been appointed Minister of Communications.

in Israel

Mr Binyamin Ben Eliezer has been appointed Minister of Communications.

in Jordan

Mr Yusuf Mansur has been appointed Director General, *Telecommunications Regulatory Commission* (TRC).

in Liberia

Mr S. Bedell Fahn has been appointed Acting Minister of Posts and Telecommunications.

in Malaysia

Mr Syed Hussein Mohamed has been appointed Chairman, *Malaysian Communications and Multimedia Commission*.

in Mali

Messrs Samba Sow, Kaffa Dicko and Diadie Touré have been appointed Executive President, Deputy Director-General and Secretary-General, *Société des télécommunications du Mali* (SOTELMA), respectively.

in Moldova

Mr Victor Cheibash has been appointed Minister of Transport and Communications.

in Nepal

Mr Purna Bahadur Khadka has been appointed Minister of Information and Communications.

in Niger

Mr Mahamadou Danda has been appointed Minister of Communication, Culture, Youth and Sports, Government Spokesman. Messrs Abdou Djibrilla and Maliki Amadou have been appointed Secretary-General and Director of Regulation, Ministry of Communication, Culture, Youth and Sports, respectively.

in Paraguay

Mr José Alberto Planás has been appointed Minister of Public Works and Communications. Messrs Numas Alcides Arellano Cabral and Francisco Delgado have been appointed Chairman and Director, *Comisión Nacional de Telecomunicaciones* (CONATEL), respectively.

in Russia

Mr A. Ivanov has been appointed Chairman, *State Committee for Telecommunications*.

in Slovakia

Mr Milan Luknár has been appointed Director-General, Post and Telecommunications Division, Ministry of Transport, Posts and Telecommunications.

in South Africa

Ms Ivy Matsepe-Casaburri has been appointed Minister of Posts, Telecommunications and Broadcasting.

in Suriname

Ms Iris M. Struiken-Wijdenbosch has been appointed Acting General Manager, *Telecommunicatiebedrijf Suriname* (TELESUR).

in Turkey

Mr Enis Öksüz has been appointed Minister of Transport.

in Venezuela

Mr Julio Montes has been appointed Minister of Transports and Communications. — *ITU Notification Nos. 1379 and 1380.*

The "Eagle" has landed

30th anniversary of first lunar landing*

"The Eagle has landed", declared Neil Armstrong as the *Apollo* lunar module "Eagle" touched down on the Moon, marking the most spectacular conquest of space by humankind — a conquest many claim would never have been possible without the radio.

Thirty years ago, on 20 July 1969, at 20 h 17 min 40 s, explorers from Earth, Neil Armstrong and Edwin E. ("Buzz") Aldrin, landed on the Moon. In lunar orbit in the ferry spacecraft which would return them to Earth, was Michael Collins.

Less than seven hours later, at 02 h 56 min 19 s UT on 21 July, Armstrong cautiously placed his foot on the Moon as he stepped off the Eagle.

"That is one small step for a man, one giant leap for mankind."

Minutes later Aldrin joined Armstrong on the surface. They spent more than two hours on the lunar surface, taking photographs, collecting rock and soil samples and deploying scientific instruments; 21 kg of the Moon were collected for return to Earth.

The mission to the Moon began in May 1961, when President John F. Kennedy pledged to place a man on the Moon and return him safely to Earth before that decade was out.

At that time, only one American had even approached the threshold of space. Astronaut Alan Shepard on 5 May 1961 in a 15-minute sub-orbital flight reached an altitude of 187 km.

One Soviet spaceman, cosmonaut Yuri Gagarin, earlier on 12 April 1961, had completed a single orbit of the Earth.

"That is one small step for a man, one giant leap for mankind."
Photo: NASA (ITU 760583)

Six *Mercury* flights between 1961 and 1963 proved human beings could survive in space; ten manned Earth-orbiting *Gemini* flights in 1965 and 1966 proved human beings could work in space, that they could control spacecraft to rendezvous and dock with another, that they could stay in space for up to two weeks and that they could work outside the spacecraft and do meaningful work on these "space walks".

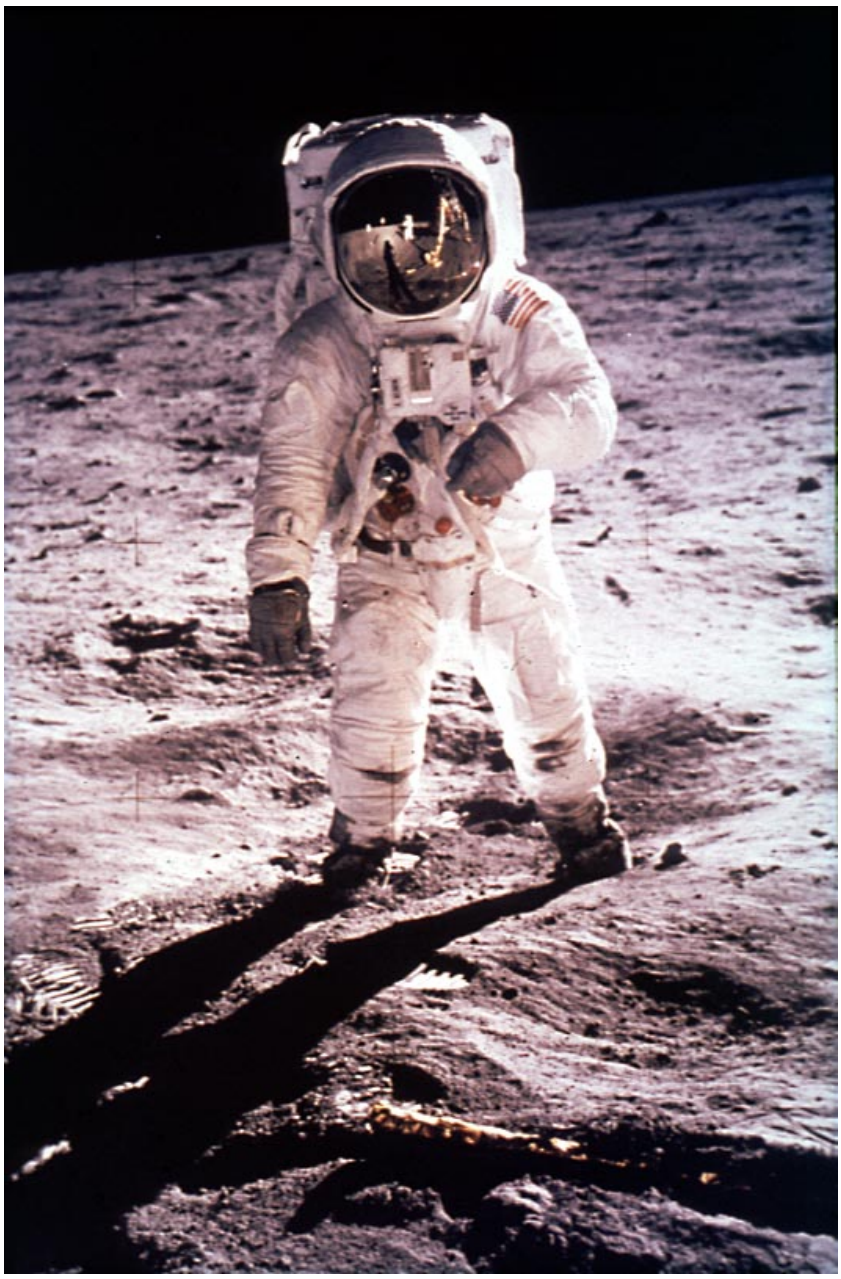
Three unmanned flights, testing the *Saturn-1B* rocket

* This text is adapted from a story from the United States National Aeronautics and Space Administration (NASA), published in August 1979 in what was then the *Telecommunication Journal*, Vol. 46, No. VIII, pages 464–465.

and Apollo command and service modules, were also conducted.

Each flight built on the experience and knowledge of the previous flight. Government and industry learned to organize and manage the ground-based facilities and human resources needed to support this national effort.

Unmanned Apollo flights were made to test the *Saturn-5* Moon rocket and the lunar module. Manned flights began with *Apollo-7* when astronauts Walter Schirra, Don Eisele and Walter Cunningham orbited the Earth in an Apollo command module for ten days beginning 11 October 1968.



Neil Armstrong, the first man on the Moon

Photo: NASA (ITU 760584)

In December 1968, on the first manned flight of the Saturn-5, following only two unmanned flights of the rocket, astronauts Frank Borman, James Lovell and William Anders became the first men to go out to the Moon. Their mission, flown without the lunar module, completed ten orbits of the Moon on 25 and 26 December.

Two more manned Apollo-Saturn-5 flights — *Apollo-9* with astronauts James McDivitt, David Scott and Russell Schweickart which tested the full Apollo spacecraft and rendezvous and docking techniques in Earth orbit and *Apollo-10* with astronauts Thomas Stafford, John Young and Eugene Cernan which tested the system in orbit about the Moon — paved the way for *Apollo-11*.

Objective of Apollo-11 was stated simply: "Perform a manned lunar landing and return".

Nearly 400 000 people in industry and government had worked towards this moment. At 13 h 32 UT, 16 July 1969, the world watched as Apollo-11, with its crew of Armstrong, Aldrin and Collins, lifted off Earth.

Four days later Apollo-11 was circling the Moon. Armstrong and Aldrin entered the lunar module Eagle, and Collins was left alone in the command module *Columbia*.

A few minutes later, the Eagle began the two-hour descent to the surface.

Armstrong and Aldrin were on the Moon for 21 hours and 36 minutes. They lifted off at 17 h 54 UT on 21 July. After joining command module pilot Collins in the Moon-orbiting Columbia, the Apollo-11 crewmen set out for their home planet.

Landing was in the Pacific Ocean at 16 h 50 min 35 s UT on 24 July. President Richard Nixon, who had talked by telephone to Armstrong and Aldrin while they were on the Moon, was aboard the recovery ship *USS Hornet* to greet the Moon explorers.

The national goal established by President Kennedy was met. Twice before the end of the 1960s, humankind explored the lunar surface.

Those two landings and the four that followed in the early 1970s gave lunar scientists around the world a variety of sample material, photographs, and electronic data that are still being studied to learn yet more about the Moon.

Apollo, in early planning, was scheduled for ten landing attempts; but one and then two more were cancelled because of cuts in NASA funding. Apollo's final cost was USD 25 billion. Some of the preliminary findings from Apollo include:

— a reliable lunar history time scale;
— general agreement that the dark mare or "sea" regions are extensive lava flows and that most of the craters are projectile impacts;

The team of Apollo-11: from left to right, Neil Armstrong, Michael Collins and Buzz Aldrin

Photo: NASA (ITU 760593)

— a much stronger than expected and variable magnetic field and a hotter than expected interior;
— distinct differentiation between the chemical composition of the Moon and that of Earth, a significant constraint on the theory that the Moon originally was a part of Earth.

End-of-Apollo data did not rule out any of the three major theories on the Moon's origin: separation, capture from circumsolar orbit, or formation from a dust cloud surrounding Earth. ■

Ilija Stojanovic: 50 years of scientific work

Mohamed Harbi

Special Adviser to the ITU Secretary-General in charge of External Affairs and Corporate Communication

Celebrating two anniversaries in the same year is quite an achievement in itself. And doing so as a tireless "Master Class Chairman" must surely add special value to that achievement. On 31 August 1999, Ilija Stojanovic celebrated his 75th birthday and fifty years of scientific work.

As an outstanding expert in telecommunications, Mr Stojanovic has closely associated his professional career with ITU activities, a link from which ITU has benefited greatly. There is something symbolic in this association: Mr Stojanovic was born in the vicinity of Nikola Tesla's birthplace, and ITU largely exploits the benefits of the wireless transfer of energy, one of the numerous undertakings of Mr Tesla.

Ilija Stojanovic

Photo: A. de Ferron

Mr Stojanovic first participated in an ITU conference in Stockholm in 1961 (European VHF/UHF Broadcasting Conference), participation which can be placed in a symbolic context. The plan and the associated provisions for television broadcasting, established by that conference, are still in force as a rare example of a long-standing international instrument which has remained relevant in an environment characterized by rapid technological change. In fact the change is so rapid that, in some cases, no sooner has a decision been taken than it becomes obsolete.

Mr Stojanovic's path to becoming a Master Class Chairman can be traced back to 1984, when he brilliantly chaired the Planning Committee of the Regional Administrative Conference for FM sound broadcasting in the VHF band (for Region 1 and certain countries in Region 3), held in Geneva. This is the conference that modified the part of the Stockholm Agreement (1961) dealing with VHF/FM sound broadcasting.

In 1985, he was elected Chairman of the First Session of the World Administrative Radio Conference (WARC) on the use of the geostationary-satellite orbit and the planning of the space services utilizing it. Better known as WARC ORB-85, this conference adopted the broadcasting-satellite service (BSS) plan and the associated BSS feeder links plan for Region 2. These plans are still in force and are still responding to the needs of the user community, despite the new challenges emerging almost every day.

In 1988, he was elected Chairman of the Second Session of the World Administrative Radio Conference on the use of the geostationary-satellite orbit and the planning of the space services utilizing it. More popularly known as WARC ORB-88, this conference had numerous tasks: to adopt a BSS feeder links plan for Regions 1 and 3, as well as an allotment plan for the fixed-satellite

service for all three regions in several frequency bands. It also had to establish the associated regulatory framework to govern the use of the relevant frequency bands with a view to guaranteeing to all countries, in practice, equitable access to the geostationary-satellite orbit and the frequency bands allocated to space services.

These subjects were so complex that, at one moment, it seemed unlikely the conference would come up with results. However, Mr Stojanovic's tact made it possible to reach decisions on all subjects to the great satisfaction of the ITU membership.

As a university professor teaching the fundamentals of telecommunications for nearly forty years, he participated in many meetings of the International Radio Consultative Committee (CCIR), which became ITU's Radiocommunication Sector (ITU–R) in 1993.

In 1986, he was elected Chairman of the XVIth Plenary Assembly of the CCIR held in Dubrovnik. If some of the participants in ITU–R activities today still remember the radiance of this jewel of the Adriatic, it is thanks, in part, to the efficiency of the Chairman who succeeded in handling all the issues on the agenda professionally and expeditiously, leaving time for participants to explore the secrets of the local gastronomy and to enjoy the magic of the Dalmatian coast.

As a man with a vision, he took part in several activities dealing with the structural reforms of the Union. Firstly, as Chairman of the ITU Panel of Experts on the long-term future of the International Frequency Registration Board (IFRB) from 1986 to 1988, known today as the Radio Regulations Board (RRB). Secondly, as a member of the High Level Committee on the review of the structure and functioning of ITU (1990–1991).

Some of the recommendations of these two bodies culminated in the adoption, by the Additional Plenipotentiary Conference (Geneva, 1992), of structural changes to the Union. In fact, as an ongoing process, the functioning and structure of the Union are under permanent review. A recent example of this is the decision by the 1999 session of the ITU Council (14–25 June) to set up a new working group to continue the review process.

▲ *The author of this article announcing the football teams during a match at the Geneva stadium between the ITU staff and delegates to WARC ORB-88. Mr Stojanovic ready for the kick-off*

From left to right: Alberto Méndez (Radiocommunication Bureau), Dusan Schuster (Strategic planning and external affairs unit), Celso Azevedo (ex-IFRB), Roberto Blois (presently Deputy Secretary-General of the ITU) and Jorge De Angelis (Radiocommunication Bureau) ▲

As a proven analyst with an in-depth knowledge of radiocommunication services and their evolution, he participated in the Voluntary Group of Experts (VGE) on the simplification of the Radio Regulations (1991–1994). The VGE reviewed the overall concept of the international radio regulatory arrangement and proposed recommendations that have been implemented through the decisions of the 1995 and 1997 World Radiocommunication Conferences (WRC).

Here again, new developments require permanent review and the Plenipotentiary Conference (Minneapolis, 1998) in its Resolution 86 requested WRC-2000 and all subsequent WRCs to continually review and update the elements of the ITU radio regulatory framework dealing with the coordination of satellite networks.

Mr Stojanovic's activities in other international forums dealing with telecommunications are equally impressive. He is renowned for his active role in the United Nations Committee on the Peaceful Uses of Outer Space (particularly the 1978 and 1979 sessions of the committee in New York) and in the Inter-governmental Conference (Paris, 1982) for establishing the European Telecommunications Satellite Organization (EUTELSAT).

As Chairman of the Frequency Allocations Committee (Committee 5) of WARC-79, the marathon conference that lasted three months (September–December 1979), I had the opportunity to experience personally, the expertise, competence and kindness of Mr Stojanovic. At the Regional Administrative Conference for broadcasting in 1984 and WARC ORB-85 and ORB-88, I was delighted to work with him directly, as technical secretary of these three major ITU conferences and appreciated his professionalism, tact and diplomacy.

A toast to you Mr Stojanovic for devoting so much of your time to telecommunications and to steering ITU activities deftly and diligently.

Best wishes for a long and happy continuation both in your private and professional activities. ■

Disaster management using satellite technology: Europe stands ready

On 22 July 1999, on the occasion of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), held in Vienna from 19 to 30 July, the Director-General of the European Space Agency (ESA), Antonio Rodotà, and the Director-General of the *Centre national d'études spatiales* (CNES), Gérard Brachet, announced their intention to establish a satellite system operators' charter with a view to contributing more effectively to disaster management.

Such disasters result not only in tremendous human suffering, but also in major losses and damage for society as a whole

As was emphasized many times in the course of the efforts which led to the adoption in June 1998 of the Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations (Tampere, Finland), our planet is constantly subject to the unforeseen effects of natural disasters (such as floods, earthquakes, volcanic eruptions, forest fires and tropical storms) or of human activity (for example, hydrocarbon emissions). Such disasters result not only in tremendous human suffering, but also in major losses and damage for society as a whole.

Earth observation satellites, particularly ESA's *ERS-1* and *ERS-2* and CNES's *SPOT-1*, *SPOT-2* and *SPOT-4*, within the framework of a cooperative arrangement with Belgium and Sweden, provide the authorities responsible for disaster management with reliable information which com-

plements the data obtained by conventional ground-based and aerial observation systems.

In recent years, many initiatives have been taken by space agencies, working with disaster management authorities, to demonstrate the value and potential of space technology for enhancing the management of natural or man-made disasters.

When a disaster occurs, the signatories to the above-mentioned charter will support the bodies responsible for rescue and assistance by providing them with space observation resources in the form of satellites, on-board instrumentation, the Earth segment and archived image banks. Such assistance will be provided at the request of the disaster management authorities of the signatory countries.

Among other things, ESA and CNES have made a specific commitment to pool their satellite resources for the purpose of observing the geographic areas affected by disasters in order to ensure the rapid provision of relevant data concerning those areas. Any space agency or satellite operating company in any part of the world may become a co-signatory to the charter. — *ESA/CNES*.

BT launches millennium education initiative

BT launched in mid-June 1999, a major education initiative aimed at helping more than one million children improve their communication skills. Called *FutureTalk,* the initiative aims to promote more effective speaking and listening skills amongst children and to help them recognize how traditional communication skills will still be essential in the next century.

Seen as one of the biggest initiatives ever by a British company, FutureTalk will run until July 2001. It will include drama performances and workshops in 3500 schools across the United Kingdom, with curriculum material for teachers available to every school in the country.

Speaking at the launch of this new education programme, Estelle Morris, Minister for School Standards, said: "Communication skills are essential skills for learning. Good communication skills will benefit children for the rest of their lives. FutureTalk emphasizes these core skills, and will reinforce our initiatives to raise standards in our schools."

Sir Iain Vallance, Chairman of BT, said: "Children are not in the least bit fazed by the new communications technologies. But they also need to understand how to communicate with other people effectively face to face. Both sets of skills are essential and highly valued by employers. FutureTalk is BT's way of helping a generation of schoolchildren prepare for the next century by acquiring the skills they need for success."

Good communication skills will benefit children for the rest of their lives

Part of the idea for the initiative came from the research which BT commissioned MORI to undertake. This research revealed that 84 per cent of those surveyed thought the nation could be better communicators, but only 38 per cent had ever had any relevant training. In adition, 86 per cent thought schools should do more to teach children to be good communicators.

However, the good news for teachers was that they came top of the class when people were asked to nominate the profession which was best at communicating. — *BT.*

Telecommunication leaders discuss satellite communications in Africa

At AFCOM '99 held in early June, the Director-General and CEO of the International Telecommunications Satellite Organization (INTELSAT), Conny Kullman, joined other industry executives and policy-makers to discuss the future of satellite communications in Africa. AFCOM '99, which was the eighth All Africa Telecommunications, Information Technology, and Broadcasting Conference, also brought together 20 African ministers in charge of communications and information.

Some 50 African countries use the system for international communications and 25 of them depend on it for their domestic links

In a panel focusing on international satellite communication developments, Mr Kullman provided African leaders with an update on the organization's progress towards restructuring into a fully commercial entity. He assured participants that a privatized INTELSAT would continue to meet its lifeline connectivity obligation, protecting service provision to countries with no alternative for global connectivity except via the INTELSAT system.

Many African countries still depend entirely on this system for their global connectivity. Some 50 African countries use the system for international communications and 25 of them depend on it for their domestic links. More than 40 African telecommunication entities have a voice in INTELSAT, as part owners of its system, with combined investment currently valued at over USD 115 million.

Mr Kullman explained that under a timetable endorsed by INTELSAT owners, a single commercialization proposal would be submitted by the organization's Board to a meeting of INTELSAT member governments in Malaysia in October 1999. Final approval is expected in the fourth quarter of 2000, putting INTELSAT on target to become a fully privatized entity by early 2001. — *INTELSAT.*

Asia-Pacific

Digital broadcasting: managing the transition

Digital television, which has began to expand in the United Kingdom and the United States since November 1998, promises to open a range of new opportunities, including an abundance of new programme channels and high-quality services. Digital technology is expected to reinvent television as a medium very different from the one we know from the past.

Having recognized the urgent need to help broadcasters in the Asia-Pacific region to make the digital transition as smoothly and cost effectively as possible, the Asia-Pacific Broadcasting Union (ABU) and the Asia-Pacific Institute for Broadcasting Development (AIBD) jointly organized an international seminar in Kuala Lumpur (5–8 July 1999).

The event was attended by some 200 delegates from the engineering, programming, and management streams of broadcasting organizations. Speakers from the world over included those who have had a direct role to

play either in the development of digital technology and its applications or in the actual implementation of digital services in Europe and elsewhere.

Among the topics discussed in the seminar's eight sessions were:

— understanding the technicalities surrounding digital television and the factors that are important in making choices among the available delivery and production systems;
— business drivers for digital television, including multiple choices of programming, widescreen and high definition television services;
— interactivity and multimedia broadcasting;
— the production environment suitable for digital services;
— the possible regulatory and policy options that are likely to best serve the interests of broadcasting in the digital age;
— ways to make the digital transition efficiently and without disenfranchising the existing audiences;
— ways in which finances can be raised to establish a digital broadcasting infrastructure and ways in which digital technology can be employed to generate increasing revenues;
— ways in which the existing human resources can be redeveloped to meet the requirements of a digital environment.

This is the first time that a seminar has been organized in the Asia-Pacific region which aims to address comprehensively all important aspects of the migration from analogue to digital television services. — *ABU.*

Asian trunking operators report regulatory successes...

... and are working with regulators to lift remaining restrictions

According to Asian trunking operators, despite fierce competition for spectrum and users, they have had many regulatory successes in recent times, which have created a more positive environment for the industry and a more level playing field. This report was made at the 2nd Asia Pacific Congress on commercial trunked radio (Singapore, 20–21 June 1999), organized by the International Mobile Telecommunications Association (IMTA).

However, there are still many issues that need to be resolved and operators are working with regulators to abolish regulations that restrict industry growth.

In India, commercial trunked radio operators face a range of restrictions. For example:

— operators must provide, primarily, group communications;
— interconnectivity between sites is not permitted;
— initially, only five channels are allotted per operator, and subsequent channel additions are also in multiples of five, depending upon loading, traffic and blockage;
— interconnectivity between operators is not allowed, neither is interfacing to the public-switched telephone network;
— foreign ownership is restricted to 49 per cent.

However, the Mobile Trunked Radio Operators Association of India has been working with regulators to develop a more positive environment for the industry. In particular, the regulatory body *TRAI*, which was formed in 1998 to act as an independent regulator has initiated interactions with the commercial trunked radio industry to develop a more positive framework. Service providers can now get a tax break for five years.

Import tariffs on radios have been reduced from 58.65 per cent to 47.9. Import tariffs on infrastructure have been reduced from 58.65 per cent to 53.82. Additionally, according to the National Telecom Policy 1999, licence tenure is to be extended to twenty years, from the current five, and will be renewable subsequently for every ten years.

In China, the industry faces numerous challenges, despite its large and growing market. On the regulatory front, there is a long approval process for type approval and site commissioning. Although there are more than 2.5 million commercial trunked radio users in China, the overall penetration is low. One reason is that unlike in the United States, commercial trunked radio came after cellular and paging.

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This has presented a difficult marketing challenge for operators who are competing with these other wireless services. In addition, due to lack of resources, operators are inactive in promoting commercial trunked radio services and customers are unaware of their benefits.

In Japan, despite its success as one of the largest markets for commercial trunked radio in the world, operators have faced numerous regulatory challenges. By working with the Ministry of Posts and Telecommunications, many of these obstacles have been removed. For example, the user's radio operator's licence has been eliminated. This rule required users to obtain a licence if they wanted to use commercial trunked radio services.

There was no such requirement for cellular or paging users, which made trunking unattractive to many potential users. After months of negotiations, this restriction has been removed. In addition, operators are now allowed to implement site networking by a dedicated line, obtain individual telephone numbers for each radio, provide services to taxis, buses, trains, and local government, establish a fleet licence system for future expansion, and offer users a free trial of the system, which previously was forbidden.

In the Philippines, the Trunked Radio Operators of the Philippines Association (TROPA) has realized several accomplishments working with the National Communications Commission. These include allocating 13 MHz of additional frequencies for trunked radio, deregulating tariffs, and developing an interconnection template with the industry. However, TROPA still faces a number of challenges, including implementing channel loading standards, convincing regulators to encourage the use of spectrum-efficient technologies, and developing better rules regarding interconnection.

All in all, while operators still face regulatory challenges, it is encouraging that regulators in many of these countries are responding to industry needs and have lifted many restrictions. IMTA has expressed the hope that an even more positive environment will be created as trade associations which represent the industry in these countries continue to work with regulators in the region. — *IMTA*.

Whose shot is it?

Hamid Radjy

Head, Department of Common Services, ITU

It is "common wisdom" that diversity of views between managers is natural, and also enriching for the enterprise[1], be it private or public. However, when such diversity manifests itself as strong divergences of opinion or disputes, the consequences for the enterprise become counter-productive. This may be a significant risk when the enterprise is going through a pivotal transformation[2], which has been typical for many telecommunication enterprises due to evolutions of technology and economic conditions. Attention to management relations and behaviour thus becomes particularly important during periods of significant change.

Dealing with disputes between subordinate managers is an integral part of the responsibilities of general managers[3]. Such disputes may arise for a variety of reasons, but there are two situations that may be particularly critical for the enterprise, and often delicately challenging for the general manager.

In one scenario, each manager typically blames the other for what has gone wrong, often *after* the action. Another situation corresponds to the "turf war" scenario, with each manager claiming responsibility for a project or undertaking. This usually happens *before* the action. The general manager who is forced to act as the referee/umpire may wonder why this has to happen, or why this keeps happening between these two managers.

A case study

Let us consider two specific examples, involving two competent managers Eric (Publications Manager) and Mark (Information Technology Manager) who report to Miriam (General Manager). The context is the catalytic role of the Internet in creating new opportunities and challenges.

Scenario 1 (after the action)

"Our customers are very unhappy with the system that your department designed for our Web-based sale of publications", says Eric. "It is confusing and very slow. So much for software development by your department!"

"I remind you that the specifications were made by your staff and the system we have delivered corresponds to your specifications. The Web-based system is not working because your specifications were inadequate", replies Mark.

Scenario 2 (before the action)

"Marketing and sales of publications is the responsibility of my department", says Eric. "Therefore it is evident that developing the Web-based marketing should be done by my department."

"You are forgetting that software development is the responsibility of my department",

[1] In this article, "enterprise" is used as a generic term and refers to a private company, a public company or an international organization.

[2] A pivotal transformation is any change that may dramatically affect the future of the enterprise. See "Only the paranoid survive", by A. S. Grove (1996). Mr Grove (then President and CEO of Intel Corporation) gives a lucid presentation in this book of "strategic inflection points" which corresponds to the starting point in a pivotal transformation.

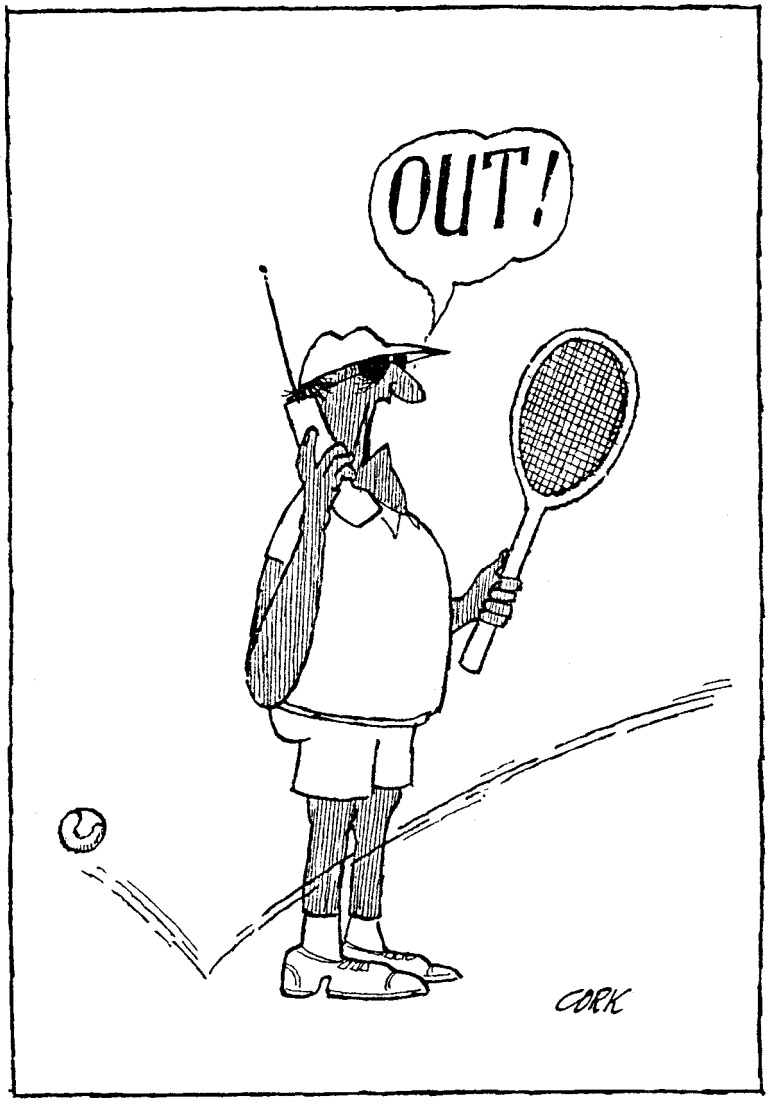
[3] In the assumed model for the enterprise, the managers report to general managers who report to the chief executive. However, the examples and analyses are valid at all levels of hierarchy.

replies Mark. "Web is software, and must be done by my department."

Whilst the above scenarios are of course fictitious, they are inspired by a variety of real events. Do these scenarios sound familiar? And have such scenarios ever involved or affected your responsibilities?

In some cases Miriam, the General Manager, may of course find simple answers to her thoughts. For example, one manager may be "trespassing" on and interfering with the responsibilities of the other (first scenario). However, circumstances often occur in large enterprises when two or more managers need to cooperate in order to achieve a common goal, or in order to implement a joint project. The umpire's task is often delicate and more challenging in such situations, particularly when dealing with competent managers.

The management issue may be better illustrated by considering an analogy with tennis. Let us imagine a doubles game: Eric and Mark are playing Piotr and Alexis. Piotr plays the ball in the space between Eric and Mark: they both try to take the shot, they bungle and lose the point. Each accuses the other as being responsible for losing the point. Whose fault is it?



It is the same question that Miriam has to answer. And if she does, she will probably make a management error.

In the tennis game, either Eric or Mark could have anticipated their joint bungling by calling "your shot"[4]. In the enterprise Scenario 1, better communications between the managers, *before* implementing the Web-system, would have similarly increased the likelihood of success in the joint undertaking[5].

However, the "your shot" solution *assumes* that both Eric and Mark are playing to win (against Piotr and Alexis), which is the game objective. Or is it? It is possible, for example, that Eric and Mark both want to play the maximum number of shots and winning is a lesser objective for each. In the context of game theory, this would then be a different "zero-sum game"[6] in which Eric is playing Mark, the game objective (or "pay-off" in game-theory jargon) being *who can play more shots*. It is evident that the

attitude and personal objectives of the players can create a sub-game thus changing the real game as distinct from the formal game.

Game theory also applies to the management context in the enterprise. In Scenario 2, the *enterprise* objective, for the new project, is to increase the market by providing a better service to the customers. However, the terms of the dispute between Eric and Mark indicate that their *personal* objectives are different: each wants to increase his own scope of responsibility by fighting for ownership of the new project. The zero-sum game is thus internal, played between Eric and Mark, instead of being external against the competition.

Let us stay with Scenario 2 and address Miriam's dilemma. The real issue is the divergence between the enterprise *objectives* and the *personal* objectives of the managers.

A manager's importance in any enterprise grows with his scope of responsibility. Even if this does not bring monetary rewards, there is the tangible reward of increased social and status recognition. This tends to create an internal zero-sum game between the managers with *importance* as the "pay-off". On the other hand, relatively few enterprises have mechanisms for recognizing and rewarding *teamwork*, at least not directly. But major undertakings and projects often need teamwork as a prerequisite for success. If the "pay-off" for large projects is at best limited, it is not surprising that their success may be overshadowed by conflicting games with larger pay-offs. In such a culture, the enterprise/competition game may sometimes degenerate into the "turf-war" scenario. Thus, the general manager's real challenge is to motivate a change of the enterprise culture.

Let us return to the tennis game. Whilst Eric and Mark have lost the point, they should recognize that the game is not over and that the situation may occur again. If they take time to agree on a convention or mechanism to avoid a repeat bungling, they will increase the chances of winning both in the formal game and in their sub-game (e.g. by increasing the number of shots in the game).

In Scenario 1, Miriam's challenge is to make both Eric and Mark aware that they are *partners* playing against the external competition and that the game is not over. They need to work as a team not only to resolve the current problem but also to bring future and timely improvements to the new Web-system ahead of the competition.

Conclusion

Each enterprise has its own distinct culture which motivates the attitudes of its managers, and of its other employees, and which influences the management behaviour. A re-examination of the enterprise's culture and values may be essential to sustain important new projects or pivotal transformations[7]. This may be particularly pertinent for many telecommunication enterprises, private or public, that continue to face major adaptation challenges due to evolving technologies and market economics.

In the context of the simplified case study in this article, it would normally be a management error for Miriam to blame one of her competent managers, and it would be an error for the enterprise to continue its culture of not rewarding good teamwork.

It is another "common wisdom" that anticipation is a key part of good management. Let us *imagine* that the ball is in your court. Whose shot is it? ■

[4] The risk of both players making the *same* call is much less than both taking the shot.

[5] A richer, and more complex case study could be made from the selected scenarios. However, that would go beyond the scope of this article.

[6] In game theory, a zero-sum game is defined as a game in which the total pay-offs add up to zero, i.e. the gain of one player is balanced by the loss of other players.

[7] See "Leading change: why transformation efforts fail", by J. P. Kotter, *Harvard Business Review*, 1995, Vol. 72, No. 2, pages 59–68. According to this article, one of the main reasons for failure of transformations is "not anchoring changes in the corporation's culture".

African Centres of Excellence receive sponsorship

The International Telecommunication Union (ITU), Nortel Networks*, and The Acacia Initiative of the International Development Research Centre announced on 14 June 1999, their intent to provide solutions to the challenges of universal access and rural connectivity in Africa.

Nortel Networks intends to be a principal private sector partner in the development of the two African Centres of Excellence, a major development initiative of ITU. The Centres, to be located in Dakar and Nairobi, will focus on human resources development in the critical information and telecommunications sector and will serve all countries of sub-Saharan Africa. Other partners will include the Canadian International Development Agency (CIDA), Industry Canada and the Telecommunications Executive Management Institute of Canada (TEMIC).

The ITU African Centres of Excellence initiative is an innovative approach to train policy-makers and regulators in the development of national sector priorities and regulations conducive to private sector investment, as well as senior corporate managers in the management of telecommunication networks and services

Africa represents a large market which is still too often hampered by the world's highest costs, shortages of critical skills and stymied policies that, together, foil teledensity goals and adequate infrastructure. The ITU African Centres of Excellence initiative is an innovative approach to train policy-makers and regulators in the development of national sector priorities and regulations conducive to private sector investment, as well as senior corporate managers in the management of telecommunication networks and services. Canadian rural telecommunications experience and Nortel Networks expertise and leadership in wireless solutions can be major factors in helping the countries of the region unleash their full potential for the benefit of the 500 million Africans living in rural or remote areas.

Its aim is to prepare those who will shape the future of the new Africa to embrace market innovations that have proven successful in bringing better telecommunications to more people and in making a lasting difference, even in countries that had very low teledensities.

The financial and in-kind contributions of the partners are estimated to exceed USD 4 million over a three-year period including an expected USD 1.4 million from Nortel. The contributions will include world class tools and training materials to solve critical business management issues, senior executive programmes including spectrum management, and technology awareness programmes to

support improved network planning. Equipment will also be donated to the Centres to demonstrate the cost-effective solutions which are now available to rural communities.

"African executives, like their global counterparts, are under such pressure that they cannot be expected to be fully aware of the technologies available to them. The Centres of Excellence in Dakar and Nairobi will go a long way to solving this", said Ian Sugarbroad, Vice-President, Wireless Solution, Nortel Networks. "In fact, one way Nortel Networks is planning on attacking this is by donating a complete GSM cellular PicoNode system to each centre as part of its contribution when the overall project plan is approved", he added.

The technology, training materials and support which Nortel Networks is providing will enable the programme to be launched in the second half of 1999.

From left to right (seated): Gaston Zongo, Executive Director of The Acacia Initiative (IDRC), Peter MacLaren, Vice-President, Strategic Market Relations, Wireless Solutions (Nortel Networks), and Hamadoun Touré, Director of the Telecommunication Development Bureau (ITU), and (standing): Michael Binder, Assistant Deputy Minister, Spectrum, Information Technology and Telecommunications (Industry Canada), Tony Zeitoun, Director, Technology Development, Asia Branch (CIDA), Grant Thomas, The Acacia Initiative (IDRC), Bruce Gracie, Senior Adviser, International Organizations (Industry Canada), Pierre Derome, Managing Director and Chief Executive Officer (TEMIC), Roy Mills, Director, Standards (Nortel Networks), and Bob Brett, Senior Consultant (Nortel Networks)

Photo: A. de Ferron (ITU 990046)

Hamadoun Touré, Director of ITU's Telecommunication Development Bureau (BDT), recalled the long history of successful partnerships that exist between Canada and ITU and stressed that partnership arrangements with strategic partners were certainly one of the most promising potential avenues for telecommunications development.

"The Centres of Excellence collaboration builds on Canada's telecommunications innovation, expertise and experience and its role in African development", he said. "It is an important example of public/private partnership which will serve as a model for other ITU initiatives. We welcome the leadership of Nortel Networks", he added.

"It is an important example of public/private partnership which will serve as a model for other ITU initiatives", declared Mr Touré

Photo: A. de Ferron (ITU 990047)

"Information and communication technologies are fundamentally important to Africa's development. We recognize Canada's leadership in this effort as we build our human capacity and skills. Nortel Networks partnership in this process confirms its commitment to helping Africa solve its telecommunications challenges", stated Gaston Zongo, Executive Director of Acacia.

Nortel Networks expressed confidence that this initiative will have immediate and ongoing impact, not just within the immediate vicinities of the two Centres of Excellence, but also throughout the entire continent where important telecommunication decisions are being taken on an accelerating basis.

■ Nortel Networks delivers value to customers around the world through Unified Networks solutions, spanning mission-critical telephony and IP-optimized networks. Customers include public and private enterprises and institutions; Internet service providers; local, long-distance, cellular and PCS communications companies; cable television carriers; and utilities. The company had 1998 revenues of USD 17.6 billion and has approximately 75 000 employees worldwide.

■ The Acacia Initiative is an international effort to empower sub-Saharan communities with the ability to apply information and communication technologies to their own social and economic development. Conceived by the International Development Research Centre (IDRC), Acacia supports Canada's contribution to the goals of the African Information Society Initiative, which was endorsed by African governments in 1996 as an action framework to build Africa's information and communication infrastructure.

For further information, please contact: "Pierre Gagné, Administrator, Special Development Programme, ITU Telecommunication Development Bureau (Tel.: +41 22 730 5784. Fax: +41 22 730 5484. E-mail: pierre.gagne@itu.int)" or "Ravi Lal, Manager, Media and Analyst Relations, Nortel Networks (Tel.: +33 1 3944 3373. Fax: +33 1 3944 5009. E-mail: ravilal@nortelnetworks.com)".

Telemedicine

Tbilisi citizens to receive 24-hour cardiologic medical care

In Georgia, patients with heart disease will, for the first time, receive 24-hour medical care, following the inauguration of a telemedicine pilot project on 22 June 1999. The project, to be partly funded with excess revenues generated by ITU TELECOM exhibitions, offers a trans-telephonic electrocardiogram for both diagnostic and emergency services.

Patients can now use a state-of-the-art device to record heartbeats whenever needed and transmit the recordings by telephone to a monitoring centre staffed with cardiologists round-the-clock and located at the Guli Cardiac Clinic in Tbilisi.

"We expect pilot projects to serve as test beds for other developing countries interested in using telecommunications to extend and improve access to health-care services for their population. The Tbilisi project is one of several projects which we are implementing in selected developing countries as part of our strategy to use information technology to help health professionals solve some of the most acute health care problems in developing and emerging economies", said Hamadoun Touré, Director of the Telecommunication Development Bureau (BDT) of the International Telecommunication Union.

Recommendation 9 of the Valletta Action Plan adopted by ITU in 1998 calls for the implementation of pilot projects with a view to helping countries define a telemedicine policy and strategy for an optimized use of limited health-care services in developing countries.

"It is already the second telemedicine pilot project which has been successfully implemented in Georgia with BDT's assistance", said Professor Todua, Director-General of the Institute of Radiology and Interventional Diagnostics. The first project was brought into service in September 1998 when the Institute of Radiology in Tbilisi was connected through Internet to the Diagnostics Imaging Centre in Lausanne (Switzerland) for medical second opinion.

Professor Melia, Director-General of the Guli Cardiac Clinic expressed his gratitude to BDT for its role in helping countries to introduce telemedicine services, stressing that time was of the essence in heart attack treatments. "By quickly identifying the problem, the patient can be promptly and efficiently treated, thus minimizing hospitalization and associated costs and, in many cases, saving lives", Professor Melia said. In recent years, the number of heart patients has been increasing steadily and the number of fatalities caused by heart diseases has hit a very high level, mainly because of the time between the first signs of the attack and the medical assistance provided.

Teimuraz Berishvili, formerly Director-General of *Georgia Telecom*, has been a driving force behind the realization of the project, which would not have been possible without his untiring efforts and his personal commitment to the use of technologies for the betterment of people.

The Tbilisi project was officially inaugurated by Doctor Amiran Gamkrelidze, Deputy Minister of Health, who said that the time would soon come when advanced telecommunication technologies, including Internet and interactive television, will give doctors the convenience of home visits.

The facilities will also be available to provide related medical care, including the monitoring

of blood pressure, asthma control and foetal monitoring.

Partners in the project include the Guli Cardiac Clinic in Tbilisi, the Telecommunication Company of Georgia, and the Telemedicine Foundation of Russia.

For more information, please contact: "Leonid Androuchko, Telecommunication Development Bureau, International Telecommunication Union (Tel.: +41 22 730 5433/5469. Fax: +41 22 730 5484. E-mail: androuchko@itu.int)". ■

The following missions have recently been undertaken by ITU experts

- **Angola (Luanda)**
  Stanev I. (Bulgaria)
  Senior expert in network planning — PLANITU
  (16.7.99–2.8.99)
- **Bangladesh (Dhaka)**
  Sharma N. (India)
  Consultant — Optical fibre communication project
  (31.7.99–13.8.99)
- **Bolivia (La Paz)**
  Rofe C. (France)
  Consultant on basic technical tariff plans
  (31.7.99–29.8.99)
- **Burkina Faso (Ouagadougou)**
  Diawara A. (Senegal)
  Senior expert in cost accounting
  (16.7.99–24.7.99)
- **Costa Rica (San José)**
  Sorrentino G. (Argentina)
  Consultant on accounting rates
  (24.7.99–1.8.99)
- **Honduras (San Pedro Sula)**
  Ávila Andrade A. (Honduras)
  National supervisor in electromechanical engineering
  (28.6.99–27.11.99)
  Carpio J. (United States)
  Senior expert in administration for the engineering and construction of the Tres Palos monitoring station
  (28.6.99–27.10.99)
  Funez Alemán A. (Honduras)
  National supervisor in civil engineering
  (28.6.99–27.11.99)
- **Honduras (Tegucigalpa)**
  Puerto J. (Colombia)
  Consultant on financial systems
  (20.6.99–19.9.99)
  Campoblanco Ore A. (Peru)
  Consultant on human resource systems
  (10.7.99–11.9.99)
- **India (Ghaziabad)**
  Hara M. (Japan)
  Senior expert in telematics/broadband ISDN
  (25.7.99–26.9.99)
- **India (Jabalpur)**
  Kaunismaa J. (Finland)
  Senior expert in course development
  (13.6.99–14.8.99)
- **Mali (Bamako)**
  Marczak M. (Poland)
  Consultant on Year 2000 compliance
  (7.6.99–26.6.99)
- **Mauritania (Nouakchott)**
  Mayher R. (United States)
  Consultant on spectrum management
  (2.6.99–11.6.99)
  Racine T. (Canada)
  Consultant on spectrum management
  (2.6.99–11.6.99)
  El Hasnaoui A. (Morocco)
  Consultant on Year 2000 compliance
  (1.7.99–8.7.99)
  Loudiyi S. (Morocco)
  Consultant/Specialist in computerized telecommunication for the Year 2000
  (1.7.99–8.7.99)
- **Myanmar (Yangon)**
  Welz R. (Switzerland)
  Senior expert in telemedecine
  (3.7.99–18.7.99)
- **Palestinian Authority (Gaza)**
  Erlevent A. (Turkey)
  Consultant on frequency management
  (5.7.99–5.8.99)
- **Paraguay (Asunción)**
  Bonifaz Fernández L. (Peru)
  Consultant on universal service projects
  (11.7.99–18.7.99)
- **Peru (Lima)**
  Legarraga Duchesne J. (Chile)
  Consultant on tariff policies and planning
  (13.6.99–26.6.99)
  Osuna Suárez C. (Colombia)
  Consultant on numbering plans
  (13.6.99–26.6.99)
- **Senegal (Dakar)**
  Carrier C. (France)
  Training consultant
  (7.7.99–17.7.99)
- **Somalia (Hargeysa)**
  Reijonen P. (Finland)
  Senior expert in numbering and interconnection
  (23.7.99–31.7.99)
- **Suriname (Paramaribo)**
  Ringling F. (Germany)
  Consultant on telecommunication restructuring
  (5.7.99–20.8.99)
  Furminger M. (United Kingdom)
  Consultant on distance education
  (13.7.99–28.7.99)
- **Switzerland (Geneva)**
  Pavliouk A. (Russia)
  Senior expert in Win BASMS
  (13.6.99–17.6.99)
  Nasser A. (Jordan)
  Consultant on telecommunications
  (22.6.99–30.6.99)
- **Thailand (Bangkok)**
  Morse M. (United Kingdom)
  Senior expert for Centre of Excellence development
  (1.7.99–11.7.2000)
- **Togo (Lomé)**
  Marczak M. (Poland)
  Consultant on Year 2000 compliance
  (27.6.99–10.7.99)
- **Viet Nam (Hanoi)**
  Ward K. (United Kingdom)
  Senior expert (technical, economics and policies) for telecommunication business course
  (3.7.99–17.7.99)
- **Yemen (Sana'a)**
  Abu-El-Haija A. (Jordan)
  Consultant on Year 2000 compliance
  (11.6.99–24.6.99)
- **Zimbabwe (Harare)**
  Álvarez Falcón C. (Peru)
  Senior expert in telecommunication economics and finance
  (30.7.99–31.10.99)

ITU Conferences

The calendar for all ITU conferences and meetings can be found on the Web at: http://www7.itu.int/events-public

1999

• 10–17 October (Geneva)
TELECOM 99 + Interactive 99

2000

• 10–15 April (Rio de Janeiro)
Americas TELECOM 2000

• 1–5 May (Istanbul, Turkey)
Radiocommunication Assembly (RA-2000)

• 8 May–2 June (Istanbul)
World Radiocommunication Conference (WRC-2000)

1999

Telecommunication Development Sector

• 13–14 September (Geneva)
Second meeting of the Telecommunication Development Advisory Group (TDAG)

• 14–17 September (Caracas)
Meeting of regulators and operators in the Americas

• 15–16 September (Geneva)
Second meeting of the TDAG subgroup dealing with private-sector issues

• 20–22 September (Niamey)
Regulatory workshop for French-speaking Africa

• 20–24 September (Libreville)
Workshop on the use of information technology for distance learning for French-speaking African countries

• 27–29 September (Cairo)
Second meeting of the AR-RTDC-96 Coordination Committee

• 5–7 October (Czech Rep.)
Subregional seminar on price-setting for universal access for countries of the Central and Eastern Europe

• 25–27 October (Bahrain)
Subregional workshop on costing and tariffs for Gulf countries

• 1–5 November (Nairobi)
Workshop on marketing of telecommunication services for English-speaking African countries

• 7–11 November (Damascus)
Regional seminar on the impact of new technologies and ITU teletraffic planning

• 9–12 November (Morocco)
Regional seminar for the Arab States on reform and regulation

• 15–19 November (Cairo)
Meeting on sources of financing, resource mobilization and private-sector involvement

• 29 November–2 December (Tunis)
Concluding seminar on costing and tariffs for Arab countries

Radiocommunication Sector

• 13–17 September (Geneva)
RRB (Radio Regulations Board)

• 15–17 September (Geneva)
Task Group 10/6 (Digital sound broadcasting at frequencies below 30 MHz)

• 27 September–1 October (Geneva)
Group of technical experts (fourth meeting)

• 4–8 October (Geneva)
Working Party 7A (Time signals and frequency standard emissions)

• 4–8 October (Geneva)
Task Group 11/5 (Interactive television broadcasting system)

• 4–8 October (Geneva)
Joint Task Group 10-11 (Multimedia broadcast evolution and common content format)

• 18–27 October (Geneva)
Joint Working Party 10-11S (Satellite broadcasting)

• 25 October–5 November (Helsinki)
Task Group 8/1 (International Mobile Telecommunications-2000 (IMT-2000))

• 1–5 November (Geneva)
Task Group 1/6 (Development of method(s) for the determination of the coordination area around Earth stations)

• 8–10 November (Geneva)
Working Party 9C (HF systems)

• 8–12 November (Geneva)
RRB (Radio Regulations Board)

• 9 November (Geneva)
Working Party 8D (All mobile satellite services and radiodetermination satellite service)

• 10–12 November (Geneva)
Study Group 8 (Mobile radiodetermination amateur and related satellite services)

• 15–26 November (Geneva)
CPM (Conference Preparatory Meeting)

• 26 November (Geneva)
CVC (Radiocommunication Study Group Chairmen and Vice-Chairmen Meeting)

• 29 November–3 December (Geneva)
Inter-conference Representative Group — fifth meeting

• 6–8 December (Geneva)
Task Group 10/6 (Digital sound broadcasting at frequencies below 30 MHz)

• 15–17 December (Geneva)
Joint Study Groups 10 and 11 meeting

2000

• 6–14 January (Geneva)
Task Group 1/5 (Unwanted emissions and the modification of Recommendation ITU–R SM.328.8 concerning out-of-band emissions)

• 17–21 January (Geneva)
RAG (Radiocommunications Advisory Group)

• 17–21 January (Geneva)
Working Party 7B (Space radio systems and radio astronomy)

• 17–21 January (Geneva)
Working Party 7C (Earth exploration satellite systems and meteorological elements)

• 17–21 January (Geneva)
Working Party 7D (Radio astronomy)

• 2–8 February (Munich, Germany)
Working Party 3K (Point-to-area propagation)

• 7–9 February (Geneva)
Working Party 11A (Television systems and data broadcasting)

ITU Conferences *(continued)*

• 7–9 February (Geneva)
Task Group 11/5 (Interactive television broadcasting system)

• 7–9 February (Geneva)
Joint Task Group 10-11 (Multimedia broadcast evolution and common content format)

• 10–11 February (Geneva)
Study Group 10 (Broadcasting service (sound))

• 10–11 February (Geneva)
Study Group 11 (Broadcasting service (television))

• 21–29 February (Geneva)
Working Party 4A (Efficient orbit/spectrum utilization)

• 28 February–10 March (Geneva)
Working Party 8A (Land mobile service excluding IMT-2000; amateur and amateur-satellite services)

• 5–9 June (Istanbul)
CPM (Conference Preparatory Meeting)

• 5–9 June (Istanbul)
CVC (Radiocommunication Study Group Chairmen and Vice-Chairmen Meeting)

• 28 June–11 July (Geneva)
Working Party 3J (Propagation fundamentals)

• 28 June–11 July (Geneva)
Working Party 3K (Point-to-area propagation)

• 28 June–11 July (Geneva)
Working Party 3L (HF propagation)

• 28 June–11 July (Geneva)
Working Party 3M (Point-to-point and Earth-space propagation)

• 12–13 July (Geneva)
Study Group 3 (Radiowave propagation)

• 12–18 July (Geneva)
Working Party 1A (Engineering principles and techniques, including computer-aided analysis for effective spectrum management)

• 12–18 July (Geneva)
Working Party 1B (Principles and techniques for spectrum planning and sharing)

• 12–18 July (Geneva)
Working Party 1C (Techniques for spectrum monitoring)

• 12–18 July (Geneva)
Task Group 1/5 (Unwanted emissions and the modification of Recommendation ITU–R SM.328-8 concerning out-of-band emissions)

• 19–20 July (Geneva)
Study Group 1 (Spectrum management)

• 4–6 September (Geneva)
Working Party 10C (Audio-frequency characteristics of sound broadcasting signals)

• 4–8 September (Geneva)
Working Party 10A (Sound broadcasting at frequencies below 30 MHz and antennas for sound broadcasting)

• 4–8 September (Geneva)
Working Party 10B (Terrestrial sound broadcasting at frequencies above 30 MHz)

• 4–8 September (Geneva)
Joint Task Group 10-11 (Multimedia broadcast evolution and common content format)

• 4–8 September (Geneva)
Joint Working Party 10-11Q (Audio and video quality assessment)

• 4–8 September (Geneva)
Working Party 11C (Terrestrial television (emission and planning parameters))

• 4–8 September (Geneva)
Task Group 11/5 (Interactive television broadcasting system)

• 7–15 September (Geneva)
Joint Working Party 10-11S (Satellite broadcasting)

• 11–15 September (Geneva)
Working Party 11A (Television systems and data broadcasting)

• 11–15 September (Geneva)
Working Party 11B (Digital television (source coding))

• 11–15 September (Geneva)
Joint Working Party 10-11R (Recording for broadcasting)

• 18–20 September (Geneva)
Study Group 10 (Broadcasting service (sound))

• 18–20 September (Geneva)
Study Group 11 (Broadcasting service (television))

• 18–26 September (Geneva)
Working Party 9D (Sharing with other services (except for the fixed-satellite service))

• 19–26 September (Geneva)
Working Party 9A (Performance and availability, interference objectives and analysis, effects of propagation, and terminology)

• 19–27 September (Geneva)
Working Party 9B (Radio-frequency channel arrangements, radio system characteristics, interconnection, maintenance and various applications)

• 27–29 September (Geneva)
Working Party 4SNG (Satellite news gathering (SNG). outside broadcast via satellite)

• 27–29 September (Geneva)
Working Party 9C (HF systems)

• 27 September–5 October (Geneva)
Working Party 4A (Efficient orbit/spectrum utilization)

• 27 September–5 October (Geneva)
Working Party 4-9S (Frequency sharing between the fixed-satellite service and the fixed service)

• 29 September–5 October (Geneva)
Working Party 4B (Systems, performance, availability and maintenance)

• 6 October (Geneva)
Study Group 4 (Fixed-satellite service)

• 9–17 October (Geneva)
Working Party 7A (Time signals and frequency standard emissions)

• 9–17 October (Geneva)
Working Party 7B (Space radio systems and radio astronomy)

• 9–17 October (Geneva)
Working Party 7C (Earth exploration satellite systems and meteorological elements)

• 9–17 October (Geneva)
Working Party 7D (Radio astronomy)

• 9–20 October (Geneva)
Working Party 8A (Land mobile service excluding IMT-2000, amateur and amateur-satellite services)

• 16–27 October (Geneva)
Working Party 8D (All mobile satellite services and radiodetermination satellite service)

• 17–27 October (Geneva)
Working Party 8B (Maritime mobile service including Global Maritime Distress and Safety System (GMDSS); aeronautical mobile service and radiodetermination service)

ITU Conferences *(continued)*

• 18–19 October (Geneva)
Study Group 7 (Science services)

• 30–31 October (Geneva)
Study Group 8 (Mobile radiodetermination amateur and related satellite services)

1999

Telecommunication Standardization Sector

• 13–17 September (Geneva)
Study Group 9 (Television and sound transmission) and its Working Parties

• 20–24 September (Geneva)
Study Group 6 (Outside plant) and its Working Parties

• 21–30 September (Geneva)
Study Group 12 (End-to-end transmission performance of networks and terminals) and its Working Parties

• 22–29 September (Stockholm)
Working Party 1/2 (Numbering, routing and global mobility)

• 24 September (Maidenhead, United Kingdom)
Study Group 8 (Characteristics of telematic systems)

• 24 September (Eningen, Germany)
Working Party 2/4 (Performance and system maintenance)

• 30 September (morning) (Geneva)
Study Group 16 (Multimedia services and systems)

• 4–8 October (Valladolid, Spain)
Working Party 3/2 (Traffic engineering)

• 11–12 October (Turin, Italy)
Working Party 3/13 (Layer 1, access/transport and architectures, ATM layer and OAM)

• 25–29 October (Geneva)
TSAG (Telecommunication Standardization Advisory Group)

• 29 October (Boulder, CO)
Working Party 4/13 (Performance)

• 11–19 November (Geneva)
Study Group 10 (Languages and general software aspects for telecommunication systems)

• 22 November–10 December (Geneva)
Study Group 11 (Signalling requirements and protocols) and its Working Parties

• 13–17 December (Geneva)
Study Group 3 (Tariff and accounting principles including related telecommunications economic and policy issues) and its Working Parties

2000

• 24 January–4 February (Geneva)
Study Group 4 (TMN and network maintenance) and its Working Parties

• 2–10 February (Geneva)
Study Group 8 (Characteristics of telematic systems)

• 7–18 February (Geneva)
Study Group 16 (Multimedia services and systems) and its Working Parties

• 21–25 February (Geneva)
Study Group 5 (Protection against electromagnetic environment effects) and its Working Parties

• 28 February–10 March (Kyoto, Japan)
Study Group 13 (General network aspects) and its Working Parties

• 7–17 March (Geneva)
Study Group 2 (Network and service operation) and its Working Parties

• 20–31 March (Geneva)
Study Group 7 (Data networks and open system communications) and its Working Parties

• 3–14 April (Geneva)
Study Group 15 (Transport networks, systems and equipment) and its Working Parties

• 5–14 April (Geneva)
Study Group 3 (Tariff and accounting principles including related telecommunications economic and policy issues) and its Working Parties

• 8–12 May (Geneva)
Study Group 6 (Outside plant) and its Working Parties

• 9–19 May (Geneva)
Study Group 12 (End-to-end transmission performance of networks and terminals) and its Working Parties

• 15–19 May (Geneva)
Study Group 9 (Television and sound transmission) and its Working Parties

• 6–14 June (Geneva)
TSAG (Telecommunication Standardization Advisory Group)

Conferences external to the ITU

1999

• 13–14 September (London)
Speech recognition and the telephony market
Tel.: +44 171 252 2222
Fax: +44 171 252 2272
E-mail:
customer_services@smiconferences.co.uk

• 15–16 September (London)
Telecoms pricing
Tel.: +44 171 252 2222
Fax: +44 171 252 2272

• 20–21 September (London)
Calling cards
Tel.: +44 171 252 2222
Fax: +44 171 252 2272

• 20–21 September (London)
TeleCommodities 99 — Trading international telecoms traffic and bandwidth
Tel.: +44 171 242 2324
Fax: +44 171 242 2320
http://www.aic-uk.com

• 21–24 September (New Orleans, LA)
WCNC '99 — IEEE Wireless Communications and Networking Conference
Tel.: +1 212 705 8942
Fax: +1 212 705 8999
E-mail: wcnc99@comsoc.org
http://www.wcnc99.com

• 27–28 September (Canberra)
Communications Research Forum

Conferences external to the ITU *(continued)*

Tel.: +61 2 6271 1132
Fax: +61 2 6271 1144
E-mail: cru.mail@dcita.gov.au
http://www.dcita.gov.au/crf/forum/register.html

• 27–29 September (Amsterdam)
Global Mobile Carriers '99
Tel.: +44 171 242 2324
Fax: +44 171 242 2320
http://www.aic-uk.com

• 30 September–1 October (Budapest)
International Conference on InfoCommunication Trends '99 — Towards the third millennium
Tel.: +36 1 457 7275
Fax: +36 1 457 7171
E-mail: szathmary.gabor@hif.hu
http://www.hif.hu

• 3–6 October (Santa Clara, CA)
POWER '99 — The Seventh Annual International Conference on power requirements for mobile computing and wireless communications
Tel.: +1 781 792 2669
Fax: +1 781 871 4871
E-mail: conferences@gigaweb.com
http://www.gigaweb.com/events/POWER99.htm

• 4–6 October (Sarajevo)
International Symposium on Internet and Information Systems
Tel./fax: +387 71 654 972/443 419
E-mail: diana@utic.net.ba
musarajl@utic.net.ba

• 5–6 October (Paris)
Interconnexion 99
Tel.: +33 1 5324 3343
Fax: +33 1 5324 3334
E-mail: icad@icad.fr

• 6–8 October (London)
Next generation switching strategies for telecos
Tel.: +44 171 839 8391
Fax: +44 171 839 3777
E-mail: booking@visibis1.demon.co.uk
http://www.visibis.com

• 13–15 October (Nis, Yugoslavia)
TELSIKS '99 — 4th International Conference on telecommunications in modern satellite, cable and broadcasting services
Tel.: +381 18 529 302
Fax: +381 18 46180
E-mail: telsiks@elfak.ni.ac.yu
info@telsiks.org.yu
http://www.telsiks.org.yu

• 18–19 October (London)
ECC '99 — European cable communications
Tel.: +44 122 578 3466
Fax: +44 122 578 3206
E-mail: simonbond1@compuserve.com

• 18–20 October (Newport, RI)
22nd Annual Newport Conference on Fiberoptics Markets
Tel.: +1 401 849 6771
Fax: +1 401 847 5866
E-mail: info@kmicorp.com
http://www.kmicorp.com

• 26 October (Paris)
14th France Télécom Research Forum — Databases and information systems
Tel.: +33 1 4529 4949
Fax: +33 1 4529 6678
E-mail: sylvie.fabre@cnet.francetelecom.fr
http://www.cnet.fr

• 27–29 October (Cartagena de Indias, Colombia)
XIV National and Andean Telecommunication Congress and ANDICOM 99
Tel.: +57 1 620 8307
Fax: +57 1 214 4121
E-mail: afcintel@impsat.net.co
http://www.cintel.org.co/congreso.htm

• 9–12 November (Vienna)
EuroCarriers '99
Tel.: +44 171 242 2324
Fax: +44 171 242 2320
http://www.aic-uk.com

• 9–12 November (Malaga, Spain)
CWM winter 99 — Carrier wholesale market
Tel.: +44 143 874 2424
Fax: +44 143 836 5713
E-mail: enquiries@cwmexpo.com
http://www.cwmexpo.com

• 11–12 November (Martlesham Heath, United Kingdom)
Human factors in telecommunications — Implications for the aged and disabled
Tel.: +46 46 222 8772
Fax: +46 46 222 4223
E-mail: Clemens.Weikert@psychology.lu.se
http://www.ppsw.rug.nl/cov/hfesec/hfesec.htm

• 17–19 November (Miami Beach, FL)
TelecomLatina 99 — Globalization, innovation, convergence
Tel.: +1 303 741 2901
Fax: +1 720 489 3165
http://www.telecomlatina.com

• 23–24 November (London)
Service management in IP networks
Tel.: +44 171 839 8391
Fax: +44 171 839 3777
E-mail: stefan@visibis1.demon.co.uk

• 23–24 November (New Delhi)
TASKnet: towards a South Asian knowledge network
Tel.: +91 11 371 1401
Fax: +91 11 371 0717
E-mail: tasknet@in.britishcouncil.org
http://www.tasknet.nic.in

• 24–26 November (Berlin)
Online Educa Berlin — 5th International Conference on technology supported learning
Tel.: +49 30 327 6140
Fax: +49 30 324 9833
E-mail: sylke.sedelies@icef.com
http://www.online-educa.com

• 8–10 December (New Delhi)
BCS India '99/CommsIndia '99 — Convergence India '99
Tel.: +91 11 463 8680
Fax: +91 11 462 3320
E-mail: exhibind@nda.vsnl.net.in
http://www.exhibitionsindia.com

• 14–17 December (Bangalore, India)
IRSI-99 — International Radar Symposium
Tel.: +91 80 524 1959
Fax: +91 80 524 2860
E-mail: irsi@lrde.ernet.in
http://www.radarsymp-99-india.com

2000

• 18–20 January (Bordeaux, France)
ICIN 2000 — 6th International Conference on intelligence in networks
Tel.: +33 5 5615 1158
Fax: +33 5 5615 1160
E-mail: icin2000@adera.fr
http://www.adera.fr/icin2000

• 25–28 March (Beirut)
ARABCOM 2000 — Congress and exhibition on telecommunication development for the Arab States
Tel.: +961 5 450212
Fax: +961 5 455477
E-mail: ktayar@arabcom.com
http://www.arabcom.com

• 10–13 July (Guildford, United Kingdom)
Eighth International Conference on HF radio systems and techniques
Tel.: +44 171 344 5471
Fax: +44 171 240 8830
E-mail: hf2000@iee.org.uk
http://www.iee.org.uk/Conf/