Global Communications Newsletter

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A New Step for the Liberalization of the Telecommunications Market in Spain

by Joan Garcia-Haro, Spain

Under the deregulation and liberalization process established and boosted within the European Union, new telecommunications opportunities are appearing in Spain. Spain is the eleventh largest market in the world for telecommunications equipment and services and may be the eighth largest by the year 2000. However, the country does not have a major domestic telecommunications manufacturer, and is therefore very attractive to many international telecom manufacturers. Until competition began to arise in Spain with the authorization of the second mobile telephony operator, TELEFONICA de España ran the market in a monopolistic way and had complete control of the information technology industry. Now TELEFONICA is almost totally privatized and will face a new competitor, RETEVISION SA, which holds the second telecommunications license to operate in Spain.

A 60 percent stake in RETEVISION was recently sold by the Spanish Government as part of the effort to open this interesting market. Also, RETEVISION provides a foothold in Europe's carved up telecom market. RETEVISION was the public entity in Spain responsible for the transmission of public and private radio and TV signals, having a coverage close to 100 percent of the population. It was also in charge of the public telecommunication system and gave other services such as business networks.

RETEVISION has an important experience and operational infrastructure. It owns a terrestrial wideband digital network of 140 Mb/s able to transport all types of signals. It is the main operator of the Spanish satellite system (HISPASAT). It is going to deploy a terrestrial digital video and audio broadcasting system. Likewise, RETEVISION is diversifying its activities, increasing the non-audiovisual ones, renting transmission capacity, and giving data services over frame relay and ATM to mobile telephony operators, news agencies, banking firms, and other communications companies. Since its creation in 1989, RETEVISION has obtained economical benefits that are increasing each year.

In this frame three company consortia submitted bids to control RETEVISION. One was made up of Banco Central Hispanoamericano (one of the biggest banks in Spain), France Telecom, and Sprint Corp. Another was led by ENDESA (the major electricity company in Spain) and the Italian operator Stet (Union Fenosa, Euskaltel, and six saving banks are also in this consortium). The third was the German group Mannesmann.

The best economical offer for 60 percent of RETEVISION was a key issue, and the ENDESA-Stet group was the winning consortium by offering 116,359 million pesetas in front of the 84,000 million pesetas of the BCH, France Telecom, and Sprint Corp. consortium, even though they presented the best technological proposal. This second operator created around RETEVISION will start operating this year, and the competition with TELEFONICA should lower the tariffs, having a positive impact on the user and on the Spanish economy.

RedIRIS is the Spanish academic network for research and development. It receives public funds from the National Plan for R&D, and it is managed by a communications center depending on the National Scientific Research Council. RedIRIS connects and provides service to about 250 institutions, mainly universities and R&D centers. The services RedIRIS offers to the Spanish academic and research community are supported by means of a basic communications transport infrastructure, and they are provided in collaboration with other academic networks and international fora. This communications infrastructure provides network services and application support mainly using the TCP/IP protocol suite. Several communication services are supported by the RedIRIS to its connected centers, such as:

- LAN interconnection
- Internet access
- Access to the network through the public switched telephone network
- Complete electronic mail service, including X400 and SMTP gateway
- Directory service for organizations, departments, people, and URLs based on the X.500 standard
- News service (connection to USENET)
- Information service (ftp, archie, Web, etc.)
- CERT-security services for early detection and solving of security incidents affecting the network
- Internet domain registering in Spain (ES-NIC)

Also, the RedIRIS is used for pilot experiments over the network such as deployment of IPv6, multicast video and audio network support, and developing and trial of new applications and experiences. The RedIRIS network infrastructure is in constant development; therefore, its topology, capacity, and technology are dynamically changing and updated regarding budgetary limitations. The network backbone interconnects a set of nodes conveniently scattered over the national territory. The node interconnection is done by ATM links using 34/155 Mb/s ATM accesses. ISDN primary and basic accesses are also used as backup mechanisms. At the present time there are 17 nodes. A node consists of a set of communications equipment that allows the multiplexing of access lines of the connected centers over the trunk transmission media. Concerning international access, RedIRIS participates in the

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The Birth of the Technical Committee on Information Infrastructure (TCII) and Status of Its Activities

By Veli Sahin, TCII Chair

TCII is a new IEEE ComSoc Technical Committee, and it was created by modifying the name and charter of the existing Data Communications Systems Committee. At its GLOBECOM '94 Meeting, the Committee established a subgroup to draft a new charter. Mehmet Ulema of Bellcore (now with Daewoo Telecommunications) and Veli Sahin of NEC America (now with Samsung Telecommunications America) were volunteered to handle transitional matters until the new officers are elected.

Mehmet Ulema, Chair of the Drafting Committee, presented the new charter prepared by the Committee at ICC '95 on June 20, 1997. After some discussion and minor changes, the group agreed to adopt the new charter and renamed it "Technical Committee on Information Infrastructure (TCII)." I was elected to be the first Chair of TCII at our GLOBECOM '95 meeting on November 14, 1995 in Singapore.

TCII's vision is to enrich human life in the coming 21st century by making communications simple and underlying technology invisible and easy to use for people all over the world. Through national and global information infrastructures (NII/GII), we can share experts in many fields (e.g., engineering, medicine, education,) and resources all over the world to improve our lives, increase productivity, and reduce the cost of production.

The scope of this Committee consists of the interrelated set of technical, regulatory/policy, business, and, most important, social/cultural issues implicit in the development of NII/GII. The Committee identifies and exchanges knowledge on these interrelated issues and provides liaison to bodies inside and outside the IEEE responsible for NII/GII standards and testbeds. It stimulates interdisciplinary conferences (sessions, panels, tutorials), workshops, publications, and standards activities, and offers leadership and support to ComSoc in furthering its own use of NII/GII. The technical issues addressed by the TCII include interoperability at various levels, standard services and user interfaces, worldwide naming and addressing, the international mobility of persons and services, integration of wireline and wireless networks and services, and integrated management of different technologies such as SONET, SDH, ATM, and wireless. The policy issues addressed by the Committee are those with a large technical element, including protection of intellectual property, privacy and security, international use of encryption technology, commercial protocols, and standards vs. proprietary technologies. The TCII is specifically interested in sharability, ubiquity, equal access, ease of use, cost effectiveness, standards, and architectural openness.

In 1996 and 1997, we first spent our time educating our members and others on TCII's new charter and established contacts with related organizations all over the world in Korea, Japan, China, Italy, Germany, France, Australia, and elsewhere. Second, TCII officers and members actively participated in organizing national and international conferences, symposia, and workshops: ICC '97, GLOBECOM '97, MILCOM '97, NOMS '98, and the Second International Conference on Information Infrastructure (ICII '98). I would like to thank the TCII officers, Salah Aidarous (Vice Chair), Mehmet Ulema (Technical Program Chair), Cengiz Akgun (Publicity Chair), and Guy Omidyar (Secretary), for doing an excellent job for the last two years.

TCII's first major activities took place at ICC '97, where we organized a One-Day Workshop, two Panels, and 13 Sessions. TCII officers V. Sahin as General Chair, S. Aidarous as Tutorial Chair, and M. Ulema as Treasurer have major roles in organizing the 1998 Network Operations and Management Symposium (NOMS '98), to be held February 15–20, 1998 in New Orleans, LA. Please access the NOMS '98 home page at http://www.comsoc.org/confs/noms/98 for more information.

We also participated in organizing GLOBECOM '97 and MILCOM '97, and cosponsoring ICII '98 April 26–29, 1996 in Beijing, China. As TCII Chair, I am representing IEEE ComSoc in ICII '98 TPC responsible for organizing Forum B (TRAC B) on "Problems, Advances, and Trends in Technology."

If you need more information and/or wish to participate in TCII activities, please contact me or access the TCII home page at: http://ain2.kyungpook.ac.kr/tcii. Hope to hear from all of you.

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TCCC: What it is, What it is for

By Roch Guerin, TCCC Chair

The acronym TCCC stands for Technical Committee on Computer Communications. TCCC is a technical committee of the IEEE Communications Society. The Committee carries out its activities through three major vehicles:

- The TCCC home page, http://www.comsoc.org/~tccc
- The TCCC mailing list, tccc@ieee.org
- Meetings being held at the three major conferences we sponsor or co-sponsor: INFOCOM, ICC, and GLOBECOM

The primary goal of the Committee is to provide its members with a forum that promotes technical discussions and interactions on topics in the general area of computer communications, as well as give them the opportunity to broaden their professional contacts through interactions with peers. The area of computer communications is clearly a broad one, and also a continuously changing one because of the pace at which the underlying technology is progressing. The goals of TCCC, therefore, are both to enable our members to keep abreast of the latest trends and results in the field of computer communications, and also, and probably more important, to provide them with a vehicle through which they can contribute to and influence the direction of research and engineering in this field.

Achieving these goals takes many forms. Through our conference representatives, we participate in the paper review process and session organization of the different conferences and workshops we sponsor, and also play an active role in proposing tutorials as well as organizing special sessions on hot or emerging topics. During our meetings, we exchange views on how we can further promote the topics of interest to

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Communications Society Oakland/East Bay Chapter

Oakland-East Bay Receives Communications Society's Chapter of the Year Award

Edited by Tetsuya Miki

In an effort to recognize chapters with outstanding services to its members, the IEEE Communications Society has selected the Oakland-East Bay Chapter to receive the Chapter of the Year Award. Oakland-East Bay Chapter Chair Dr. Ali Zolfagharin received the award from Communications Society's President on behalf of his Chapter at the GLOBECOM '97 Awards Luncheon in St. Louis. The award consists of a framed certificate and a check for $500.

Chapter of the Year Award recipients are selected for their achievements during the previous year in the technical, educational, public affairs, student activities, and advancements and nominations programs.

Chapter Profile

The Oakland/East Bay Chapter of the IEEE Communications Society, commonly known as the OEB ComSoc, was founded in 1988. It is the youngest of the three Communications Society Chapters in the San Francisco Bay Area Council (SFBAC). The other two are the San Francisco Chapter and the Santa Clara Chapter. This Chapter is one of the strongest chapters with solid, sustained performance and growth. This achievement is possible through the active participation of its members and the hard work and dedication of the volunteers on its Executive Committee (the ExCom).

Chapter Chair Dr. Ali Zolfaghari attributed the success of his chapter to its highly motivated members who drive long distances to attend meetings, and especially to a group of dedicated volunteers who willingly donate their time in the spirit of volunteerism. They enjoy, in return, the opportunity to meet and serve other engineers in the diversified field of communications, and to enhance their technical expertise. The Chapter's Executive Committee consists of nine officers: Chapter Chair, two Chapter Vice Chairs, Secretary, Treasurer, Membership Chair, Education Chair, Award Chair, and Student Activity Chair. All officers are practicing engineers and consultants in the field of telecommunications. The Chapter Chair is in charge of the overall operation of the Chapter. Other officers are in charge of various activities, some of which are described below. In addition, volunteers who are not members of the Executive Committee regularly attend meetings and contribute their ideas and talents.

The Chapter has 526 members, including 357 Members, 49 Student Members, 39 Associate Members, 23 Senior Members (including Life Senior Members), 9 Fellows (including Life Fellows), 8 Life Members, and 41 in the remaining grades. This is an increase of 22 members from the previous total of 504. For many years, the Chapter has been active in providing services to its members in the technical area. During 1996, the Chapter conducted nine meetings, one each month except in July, August, and December, on technical subjects of interest to its members. The meetings, each of which has been reported to the IEEE, were widely advertised in the *IEEE Grid*, the monthly publication of the San Francisco Bay Area Council of the IEEE with a circulation of some 24,000, as well as in other printed and electronic media. The meetings are also open to interested nonmembers, and provide a forum for attracting new members. In addition, the Chapter offered one tutorial seminar for the educational benefit of its members and the general public.

In 1996, the Chapter completed its fourth membership survey to better understand its members and their areas of interest. This helped the Chapter design and implement programs to serve the current needs of its members. The Chapter has been active in supporting student chapters at the University of California–Berkeley and California State University–Fresno in their activities to promote engineering as a profession, as well as providing financial help toward needed purchases. In 1996, we began development work on a student scholarship for these two schools. We also recognized that handling the full range of student support needs and maintaining membership as students transition into the work force is an ongoing challenge for the IEEE and its chapters. Therefore, we established this year the position of Student Activities Chair to oversee and coordinate our efforts in this area. The Chapter actively promoted membership in the IEEE and the Communications Society at each of its meetings. Despite a slight drop in the membership of the Oakland-East Bay Section and the IEEE as a whole, our Chapter membership increased in 1996 by 4 percent over the previous year.

We have also begun work on establishing a Chapter Web site. A temporary site was established in 1996 to allow development to proceed while a permanent home was found. This year, we will migrate to the recently announced ComSoc servers.

Finally, the Chapter continues its focus on membership advancement and nominations, coordinated by our Membership and Awards and Recognition Chairs.

(Headquarters announced that they will support chapter Web sites, so we are migrating our site to ComSoc's server. That site is at http://www.comsoc.org/~oebc/.)

ComSoc Activities in Israel Are Growing MELECON '98 to be held in May

By Jacob Baal-Schem, Israel

Israel, with 5 million inhabitants, has more than 1200 IEEE Members of all grades and more than 200 ComSoc members. The Israel IEEE Section was founded back in 1953, and the Communications Chapter was established in 1977 and is growing steadily. The Chapter regularly holds seminars and workshops with 80–100 participants, and monthly lectures on specific subjects for smaller audiences. At the 1996 Convention of Electrical and Electronics Engineers in Israel (organized every second year by the IEEE Israel Section), three Sessions were dedicated to Communications. The Section Chair is Prof. Anthony Weiss, and the Chair of the Communications Chapter is Dr. Adam Livne.

Israel has been approved by IEEE Region 8 (Europe, Middle East, and Africa) to host IEEE MELECON '98, 18–20 May, 1998 at the Dan Panorama Conference Center in Tel-Aviv. The Section and the ComSoc Chapter are very proud that the Communications Society has accepted being a Technical Cosponsor to MELECON '98, the major international meeting of researchers and practitioners from countries facing the Mediterranean Sea. This Conference will be held while the State of Israel celebrates its 50th anniversary, and many touristic and artistic attractions will be available to participants and their

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Report on the 1997 IEEE International Conference on Personal Wireless Communications (ICPWC '97) Mumbai, India, 17–19 December, 1997

By Vijay Bhargava
ICPWC '97 Conference Chair, Canada

The conference attracted 200 delegates from 28 countries. Besides India, a large number of delegates originated from the United States, Korea, Germany, Japan, and Finland A total of 110 papers were selected for presentation at the conference. These were grouped in sessions entitled "Secure and Reliable Wireless Communications," "Comparison of Cellular Systems," "Wireless Data Networks," "CDMA," "Random Access Packet Radio Networks," "System Evolution," "Personal Communications Networks," "Wireless Local Loops," Mobile Computing," "Multi-Carrier and Wideband CDMA," Mobile Satellite Systems," "Power Control," "IMT-2000/UMTs," "Smart Antennas," "Code Acquisition and Tracking," "Mobility Management," "Interference Suppression," "RF and Transmitter/Receiver Design," "MAC and Channel Assignment," "Handover Algorithms," "Modulation and Coding," and "Signal Processing."

Copies of the 540-page Conference Proceedings are available from IEEE Operations Center (e-mail: customer.service@ieee.org).

The next ICPWC is scheduled for February 1999 in the fabled pink city of Jaipur, India. Details may be found on the CITR Web site located at http://www.citr.ece.uvic.ca.

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ComSoc Activities in Israel/*Continued from page 3*

guests. Among the 450 abstracts received for MELECON '98, more than 60 papers are on communications and vehicular technology topics. This will enable us to hold a series of Technical Sessions dedicated to these themes. Several tutorial lectures to be presented by eminent scientists will deal with communications subjects. Tel-Aviv is the center of Israel's high-tech industry, and Tel-Aviv University is a major center of technological research and education. Tours to Jerusalem and around Israel will also be scheduled. As General Chair of MELECON '98, it will be my great pleasure to host many ComSoc Officers and members at this outstanding Conference.

Region 8 ComSoc Chapters Chairs Meeting Planed for mid-1998

A meeting of Chairs of Communications Society Chapters in Region 8 (Europe, Middle East, and Africa) is scheduled for June 1998, possibly in northern Italy. Region 8 and ComSoc will assist in providing funding for the organization of this event. Contact Dr. J. Baal-Schem, ComSoc Chapter Coordinator for Region 8, at j.baal.schem@ieee.org.

TCCC Activities/*Continued from page 2*

our members, initiate discussions on other relevant IEEE issues such as publications or interactions with other Technical Committees, and open the floor to technical questions and discussions. Finally, many of our activities are carried on our mailing list, tccc@ieee.org, which is used to post relevant technical material as well as announcements on available positions, calls for papers, and so on.

As mentioned earlier, the field of computer communications is by now a very diverse one. The areas of interest to TCCC include "traditional" networking topics such as performance of computer networks and switch architectures, interfaces and protocols, scheduling and buffer management, routing, multicast, flow control and admission control algorithms, error control, wireless and optical networks, network security, network reliability, and network management. However, as can be seen from the technical program of the forthcoming INFOCOM '98 conference, they also encompass areas such as multimedia applications, Web server performance and caching strategies, end-to-end performance, network pricing models, protocol verification and testing, end system designs, and recent research topics from the field of networking such as active networks.

TCCC welcomes new members and encourages anyone interested to join and participate in our technical activities. Joining TCCC only requires that you subscribe to the TCCC mailing list, tccc@ieee.org. Instructions on how to join our mailing list can be found under the Mailing List heading of the TCCC home page, http://www.comsoc.org/~tccc. In case you need more information on TCCC, feel free to contact any of the current TCCC Officers.

Spains's Telecom Market/*Continued from page 1*

EU TEN-34 project, which is a pan-European IP network that interconnects the different European academic and research networks. The access bit rate from RedIRIS to TEN-34 is 22 Mb/s. Also RedIRIS has a 5 Mb/s connection to support data traffic interchanged with the EU (approximately 4 Mb/s at the IP level) via MCI.

With regard to the divulging of RedIRIS activities, all the affiliated centers are kept informed through a quarterly published bulletin (in conventional and electronic formats) and also through an annual technical workshop. More information can be found at http://www.rediris.es.