Global
Communications
Newsletter

April 2001

Communications Chapters Activities in Eastern Europe

By Jacob Baal-Schem, Region 8 ComSoc Chapters Coordinator

For many IEEE members — especially outside North America — "the Chapter is the Society." Most of them have never attended any major Society Conference and their contact with the Society is mainly based on receiving (after a long delay) technical publications, and on participating in local activities of their Chapter.

This is especially true in Eastern Europe countries, where salaries are low, and therefore the possibilities of attending Conferences are limited. On the other hand, IEEE members in these countries are eager to get technical information and to make contacts with peers - locally and globally.

This is where the Technical Society Chapter fulfils its purpose: to provide the local and the global contacts for the interested professionals. This is also the reason why the number of ComSoc Chapter in Eastern Europe countries has grown tremendously in recent years.

Actually we have in Easter Europe the following Communications Chapters:

- Three Chapter in Russia - Moscow, St. Petersburg and Novosibirsk
- Two Chapters in Poland - Warsaw and Krakov
- A Chapter in Budapest, Hungary
- A Chapter in Ljubljana, Slovenia
- A Chapter in Belgrad, Yugoslavia
- A Chapter in Zagreb, Croatia
- A Chapter in Varna, Bulgaria
- A Chapter in Cechach, Czechoslovakia
- A Chapter in Bucharest, Romania
- A Chapter in Skopje, Republic of Macedonia

All these Chapters are very active in organizing technical meetings and most of them contribute to the technical activities of their National Societies as well as to IEEE Regional events. IEEE Region 8 and ComSoc assist these Chapters, mainly by organizing technical meetings and by the participation of lecturers in local meetings. One of these events was the Internet Conference organized by ComSoc, Region 8 and the Moscow Communications Chapter and held on 25-28 September 1999.

On November 2000, a delegation of officers from Region 8 participated in TELFOR 2000. the Eight Telecommunication Forum of the Yugoslavia Telecommunications Society, who's Chairman is Prof. Dr. George Paunovic, Chair of the Yugoslavia IEEE Section and of the Belgrade Communications Chapter. The Region 8 group consisted of Kurt Richter, Region 8 Vice-Chair Technical Activities, Baldomir Zajc, Regional Conference Coordinator, Philip Constantinou, Chair of the Greece Communications Chapter and Jacob Baal-Schem, Region 8 Communication Chapters Coordinator.

More than 1000 Telecommunications Engineers and Officials of Telecom Companies gathered at this event, held at the Conference Center of Belgrade, and listened to the opening remarks of the newly nominated Minister of Telecommunications of Yugoslavia. The Conference continued with two days of parallel technical sessions and with an exhibition of equipment and software by international and local companies, who sponsored financially the holding of the Conference.

A special session was devoted to IEEE, including an introduction on the activities of the Region, the Section and the Chapter and a presentation of awards to local members. Thereafter, the members of the Region 8 group presented technical papers on theory and applications of Telecommunications. These presentations were made from the same podium at which the recently elected Yugoslavia President was sworn in some weeks ago. Participants at this session showed great interest in the subjects presented and many of them contacted the lecturers after the session for further informa-

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Report on AS-SPCC 2000

Simon Haykin, Canada

The IEEE Adaptive Systems for Signal Processing, Communications, and Control (AS-SPCC) Symposium 2000 was sponsored by the Institute of Electrical and Electronics Engineers Canada (Region 7). It was held on October 1-4, 2000 at Lake Louise, Alberta, Canada. The Symposium was chaired by Professor Simon Haykin (McMaster University, Canada) and co-chaired by Professor Jose Principe (University of Florida).

The Symposium was attended by 132 registrants. The program of the Symposium was organized as follows:

Day 1:

- Lecture of the Day (Dr. Al Shaffer deputizing for Dr. Delores Etter, Department of Defense, Washington, DC, USA, who was unfortunately unable to attend due to unexpected commitments)
- Fundamentals of Adaptive and Learning Systems I
- Adaptive Signal Processing I
- Fundamentals of Adaptive and Learning Systems II
- Interactive Lectures I

Day 2:

- Lecture of the Day (Dr. Andrew Viterbi, Qualcomm)
- Wireless Communications
- Adaptive Communication Receivers
- Adaptive Signal Processing II

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Walking the Web

By Massimiliano Cannata and Giancarlo Pirani, Italy

This article reports some thoughts on the next future originated from a speech given by Roberto Saracco in the framework of a series of lectures organized by the Polytechnic of Torino, Italy.

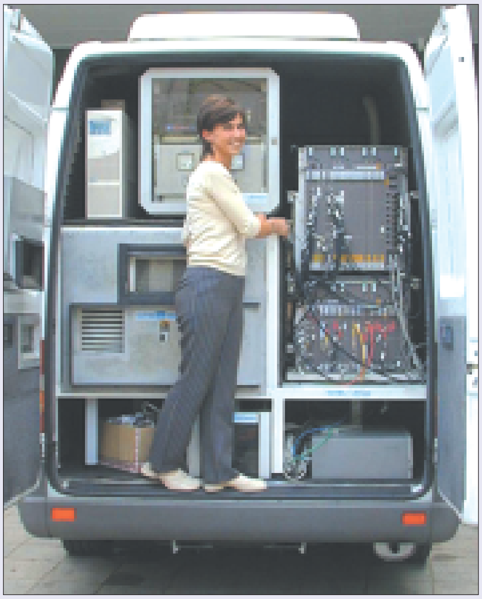

Figure 1. *UMTS equipment for the field experiment in Turin.*

Convergence is no longer only a buzzword but has become a reality. Telephone, Internet and Television merge together into the third generation cellular phone giving rise to the turning point theorized by Alvin Toffler in his famous book The third wave[1]. In this book, in addition to the spreading of personal media, the author foresees the implementation of the infosphere as a reality that is going to replace the technosphere dominated by the symbols and languages of the industrial society for a long time.

This scenario of the "society of Tomorrow" has been drafted by the lecture given by Roberto Saracco (Head of Promotion and Communication at CSELT, R&D center of Telecom Italia) in the framework of a series of lectures, called Mondo (world) Bit 2000. Mondo Bit 2000 is organized by the Superior School Mario Boella, in Torino, Italy. This Superior School, owing its name to a well-known professor who taught Electromgnetic Fields for decades at the Polytechnic of Torino.

In his lecture, "Walking on the Web", Dr. Saracco has shown that technological innovation has to proceed at the same pace as the transformations affecting the Community's life. When talking about perspectives of technology development, one has to account for social and cultural impact implied by each discovery. For example, consider the novelty of ProntoWeb, the vocal portal demonstrated by CSELT at the big ICT (Information and Communication Technology) exhibition SMAU in Milano. The service provided by this portal consists in the possibility of browsing the Web by means of a cellular phone exploiting both speech synthesis and recognition techniques: in this way, the user can search for information and make e-transactions without using a PC, e.g., while he/she is driving a car or strolling along a street.

Figure 2. *A concept phone for UMTS.*

The cellular phone, one of the symbols of the ICT revolution, has had a strong success as a fundamental tool that impacts strongly on the custom of the everyday life. The effort to make, now, is to understand that we are going to live inside Internet, as telecommunications will pervade our life. In this scenario, the 3rd Generation cellular phone, UMTS, is preeminently the communications tool that allow us to be constantly in touch with the world, not only with humans but also with objects.

The first experiment of a UMTS call in Italy has been carried out by CSELT, Ericsson and TIM. Quite a complex set-up has been necessary as the first overall UMTS equipment for the experiment was fitted within a van.

Something similar had happened a few decades ago with computers; now we got accustomed to experience a constant doubling of their computing power every 18 months, while for storage capacity of memories is increasing with an even quicker pace (doubling every 8 months).

Meanwhile the Internet phenomenon is growing. The number of Web pages is increasing astonishingly: at the end of 1999 this number was estimated to be of the order of 1.5 billion, while information pieces accessible through databases (the so-called deep Web) are about 500 billions and images about 360 millions. It is a very huge number if one thinks that a life would not be enough to turn over all the pages of this virtual book.

The channels conveying information feature the same evolution pace: when optical fibers reach all the homes, the towns will be definitely connected villages. A well-known telecommunications group has already announced that it will market a fiber capable to transmit 1280 billion information bits per second, starting from January 2001.

Owing to the rushing pace of technological innovation, the most traditional definitions and concepts are no longer to be taken for granted. We are still in the process of defining structures and tools related to the Information Society, and a new wave is already overcoming: it is carrying us from communication age to the age of tagging, where each object is given a tag, a name, a number, or, in any case, an identification element which allows it to be uniquely identified and located. It will be enough to embed a grain of sand into a medicine, to know whether we have taken too many sedatives: it will be the medicine itself to answer.

Thus, the Copernican revolution is accomplished: it is no longer the individual that address the objects, but are the appliances that make themselves visible and accessible. E-books, e-Pens, e-Maps, e-Jackets, the series of "intelligent communicating objects" is destined to get longer and longer. A similar phenomenon is happening for techniques and processes of information production and management; information delivery is more and more built upon news that are pushed into personal environments, making themselves usable autonomously.

We are in a phase of deep evolution that is bringing a sig-

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[1] *Alvin Toffler, The third wave. Collins, 1980.*

Report on ECUMN'2000

By Dr. Pascal Lorenz, France

	France	EU+AELE	East Europe	Asia	N. America	Others
Papers	12	22	4	9	5	1
Participants	19	32	11	13	13	9

The first European Conference on Universal Multiservice Networks took place from the 2nd to 4th October 2000, in Colmar. It gathered approximately 100 participants originating from 25 different countries, with a breakdown Academia/Industry of 60/40.

Dr. Pascal Lorenz, manager of the Network and Telecommunication Research Laboratory in Colmar, organized the conference with Dr. Annie Gravey from ENST-Bretagne, France. Ninety papers had been submitted, of which 53 were selected by the Scientific Committee. In addition 2 Tutorials were presented:

- Communication Architeccture for Wireless Networks from G. Omidyar, Computer Sciences Corporation, USA and
- Active Networks and their management from .M. Brunner, NEC Europe Ltd., Germany

Details of the origin of the papers and of the participants are given in the accompanying table.

This conference follows the two successful ATM conferences events held in Colmar, France in 1998 and 1999. The conference scope has been extended to deal with the different topics related to Multiservice Network Architectures, and Implementation, including among others, protocols, signaling, traffic flow, addressing schemes, etc.

Fundamental questions still have to find an answer, such as:

- How will the Internet, symbol of freedom, compete with the world of traditional carrier networks or cooperate with it?
- Will alternate Technologies be needed to meet high level quality of service requirements ?
- What restrictions, if any, will result on the desired degree of freedom ?

Emphasis shall be put upon network convergence, including fixed/mobile convergence satisfying the needs of person to person communications, as well as Information and Entertainment applications.

The main subjects discussed during the Technical Sessions have been:

- Traffic Management
- Unicast and Multicast Routing
- Convergence of Architectures and of Networks
- Interconnection between IP Networks and ATM Networks, IP and IN
- Mobile Networks and Services
- Active Networks and Mobile Code Techniques

A panel discussion on Network Convergence took place between representatives of Network Operators (Deutsche Telekom and France Telecom) and representatives of equipment manufacturers (Alcatel, CS Telecom, and Siemens).

The participants agreed that the problem to be solved is to offer a unified range of services to the customer, without discarding the existing investments in hardware and software. Convergence will be met by interfacing different services through gateways.

The four best papers have been selected for consideration in a special issue of the journal "Annals of Telecommunications".

The 2nd European Conference on Universal Multiservice Networks (ECUMN'02) will take place in Colmar, France from April 8-10, 2002. Further details are available at http://iutsun1.colmar.uha.fr/ECUMN02.html

A special thanks to the program committee members and the referees. We are also indebted to many individuals and organizations that made this conference possible through their generous financial support (Ministère de la Recherche, Association "Colmar-Liberty," Conseil Général d'Alsace, IUT de Colmar, Région Alsace, University of Haute Alsace, Ville de Colmar, Alcatel, Ericsson, France Telecom, Gitep, Sagem, Siemens, Eurel, IEEE, IST).

ComSoc Chapter Achievement Award

By Carole Swaim, Executive and Volunteer Services

With the approach of Spring, our chapters are being encouraged to reflect upon their accomplishments during the past year. Local chapters (and the services they perform) make ComSoc relevant for its members and the communications' community. To recognize and honor these efforts over the years, ComSoc has traditionally presented two "Chapter-of-the-Year Awards" each year (at ICC and GLOBECOM) to chapters providing their members with the best overall sets of programs/activities in the areas of technical activities, public relations, Member advancement/awards, and membership development.

In June ComSoc will again present its "Chapter Achievement Award" (formerly Chapter-of-the-Year) during ICC in Helsinki, Finland. Chapters that have been active and visible are currently submitting application forms for review by the Evaluation Committee.

Last November our North American Chapter Chairs met at a Regional Congress in San Francisco, California. One result of that meeting was to change the name of this award to "Chapter Achievement Award" and increase the honorarium and benefits to award winners. Winning chapters will now receive a $1,000 honorarium and plaque acknowledging outstanding leadership. Reasonable travel and living expenses (up to two nights accommodations) will be provided to enable Chairs (or representatives) to attend Awards Luncheons. And, should a Chair or representative wish to attend the conference, his/her registration will be covered as well as travel/living (up to 4 nights accommodations).

To be considered for a particular year (for example, year 2000), a Chapter must submit the Chapter Achievement Application to the Director - Membership Programs Development before March 15 or September 1 of the following year (i.e., in 2001). In other words, chapters are evaluated on the basis of their previous year's activities. An application submitted in March (but not selected as a winner) will automatically be reconsidered in September of that year.

Chapters play vital roles in the ComSoc world community-they are the grassroots of our Society and deserve recognition for their achievements. Applications can be e-mailed to the Membership Development Council (mdc@comsoc.org). Our Director of Membership Programs Development and four Regional Directors are members of this Council and work together with the Vice President - Membership Development

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Report on The Second International Working Conference on Active Networks

Kenichi Yoshida, Japan

We are very happy to report the success of "The Second International Working Conference on Active Networks - IWAN2000". It was held on 16th through 18th of October 2000, in Tokyo, Japan. IEEE communication society technically co-sponsors this conference series. The proceedings are published from Springer-Verlag as a volume of its Lecture Notes in Computer Science (LNCS 1653 and 1942).

Internet technologies continue to enhance the infrastructure of the emerging information society. The new developments increasingly affect both our personal lives and our work. In order to support this rapidly expanding infrastructure, various technologies are evolving. High speed data transfer systems such as wavelength division multiplexing (WDM) equipment and faster IP routers are the key solutions for the increasing quantitative demands. Active Networks are the key solution for providing the required quality. By making network nodes programmable and intelligent, one can realize networks with highly sophisticated functionality. There is an increasing demand to find common denominators what this functionality should be in medium and long-term perspectives and the best practice for its realization.

The first conference on Active Network, IWAN'99, was held at Berlin in July 1999 with 30 highly suggestive papers. IWAN2000 is the second workshop on this new area, and it also has 30 papers. The topics discussed in IWAN'99 covered wide research areas on active network from architecture to applications. Though IWAN2000 covered similar area in essentials, wider range of topics on applications, such as multicast control, QoS management and Mobile IP, increased productivity of the conference greatly.

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CHAPTERS IN EASTERN EUROPE/*(Continued from page 1)*

tion.

The highlights of Region 8 Communications Chapters activities in 2001 will be:

- The Communications Chapter Chairs meeting adjacent to ICC 2001, to be held in June 2001 in Helsinki, Finland.
- EUROCON 2001, IEEE Region 8 Conference on "Trends in Communications", to be held in Bratislava, Slovakia, in July 2001.

Both events will enable ComSoc members in Region 8, especially from East European Countries, to meet with peers worldwide and contribute to their professional development.

Region 8 (Europe, Middle East and Africa) includes today about 20% of the total ComSoc membership and during 2001 new Communications Chapters will be established, in addition to the 32 existing Chapters.

AS-SPCC 2000/*(Continued from page 1)*

- Interactive Lectures II

Day 3:

- Nonlinear Dynamical Systems
- Adaptive Filters
- Adaptive Control
- Banquet Lecture (Professor Bernard Widrow, Stanford University, California, USA)

In the pre-conference write-up on the AS-SPCC 2000 Symposium, we said the following:

"Lake Louise is one of the most beautiful resorts in Canada, if not the world. It is therefore appropriate that this one-shot, exciting and soon-to-be historic symposium be held in such a beautiful setting. The Lecturers as well as participants will remember AS-SPCC 2000 as the experience of a lifetime."

The feedback that we received from many of the participants testifies to this statement.

A limited number of bound copies of the Proceedings of the Symposium are still available. For copies, please contact Lola Brooks: brooks@mcmaster.ca or fax: 905-521-2922.

WALKING THE WEB/*(Continued from page 2)*

nificant change of the way of our life and of interaction among human beings and between humans and the (intelligent) objects around. Interactive Voice Automatic Systems and UMTS represent further opportunities of communication in such interactions.

Facing these new scenarios, it is also necessary to update and improve education practices, as new professional profiles will be required, which are able to operate at ease in the Internet world; in this way the new opportunities offered by the fast technological progress that we are experiencing, could be caught more adequately.

CHAPTER ACHIEVEMENT AWARD/*(Continued from page 3)*

evaluating applications.

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We appreciate the contributions of our chapters to the Society over the years. Last year the Dallas and the Argentina Sections were recognized. We look forward to honoring a new recipient during ICC in June.

For more information, visit our website at www.comsoc.org; click on 'about comsoc' and 'chapters' or e-mail Carole Swaim (c.swaim@comsoc.org).