

Global Communications Newsletter

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New Trends in Telecommunications and Networking: A Report on ICT 2004

By José Neuman de Souza, Petre Dini, and Pascal Lorenz

The 11th IEEE/IFIP International Conference on Telecommunications (ICT 2004, www.ict2004.com.br) was held 1–6 August, 2004 at Hotel Villa Galé, Fortaleza, Ceará, Brazil, and presented a variety of challenging telecommunication topics ranging from background fields like signals, traffic, coding, and communication basics up to large communication systems and networks, fixed, mobile, and integrated, and so on. Applications, services, system, and network management issues also received significant attention.

Held yearly since 1994, ICT 2004 continues the established tradition of ICTs as a privileged forum for technical exchange among many scientists, students, professionals, and technical staff, representing a large variety of organizations such as universities, research institutes, telecommunication operators, and industry.

An exciting peer-reviewed program of tutorials, plenary sessions, poster sessions, panels, and exhibition opportunities addressed the ever-increasing interest in telecommunications and networking solutions for all types of communications and computing networks, systems, and services.

ICT 2004 was sponsored by the IEEE Communications Society and the International Federation for Information Processing (IFIP) Technical Committee 6. The theme for ICT 2004 was “Telecommunications and Networking.” The theme was chosen to cover a wide range of challenging topics in telecommunications and networking to motivate discussions and evaluate the newest solutions.

ICT 2004 attracted a total of 430 submissions from 36 countries in Asia, the Middle East, Europe, South America, and North America. Of these submissions, only 178 papers were selected. The selective acceptance rate (41.4 percent) is an indication of the very high quality of the technical sessions.

The organization of the Technical Program of ICT 2004 had 44 technical paper sessions, two keynote sessions, two panel sessions, two invited speakers, seven tutorials, and 39 posters. The program included a new workshop named Service Assurance with Partial and Intermittent Resources (SAPIR), which had six technical paper sessions. Full accepted papers were published by Springer-Verlag as *Lecture Notes*

in Computer Science (LNCS-3124 for ICT and LNCS-3126 for SAPIR). A CD-ROM with papers, posters, and tutorials was distributed to the attendees.

The Technical Paper Sessions covered the latest research results in multimedia services, antennas, transmission technologies and wireless networks, communication theory, telecommunications pricing and billing, network performance and telecommunications services, active networks and mobile agents, optical photonic technologies, optical networks, ad hoc networks, signal processing, network performance and MPLS, traffic engineering and Internet, SIP, QoS and switches, network operation and management, network management theory and telecommunications networks, mobility and broadband wireless, cellular system evolution, personal communication, terrestrial radio systems and satellites, mobility management, image processing, ATM and Web services, communication security, switching and routing, and next-generation systems.

The SAPIR Workshop was the first event in a series introducing the concept of pi-resources and bringing it with the emerging and important field of distributed and heavily shared resources.

Two Panels were organized. The first focused on the new trends in telecommunications and networking; it was moderated by Prof. José Neuman de Souza (UFC, Brazil) with the following guests: Nikolai Nefedov (Nokia Research Center, Finland), Rui Aguiar (Aveiro University, Portugal), F. R. P. Cavalcanti (UFC, Brazil), W. Kabacinski (Poznan University of Technology, Poland), and Rossana Andrade (UFC, Brazil). The second had as its main subject the pi-resources in grid networks; it was moderated by Prof. Petre Dini (Cisco Systems, Inc., United States), with the following guests: Ram Khare (Telcordia Technologies, Inc., United States), Claude Jard (IRISA/ENS, France), Antonella Molinaro (Calabria University, Italy), E. den Boef (Philips Research Laboratories, Netherlands) and Pascal Lorenz (Haute Alsace University, France).

Seven Tutorial Sessions were held on the following themes: next-generation optical networks from network layer and physical layer perspectives (speaker: Djafar Mynbaef, City University of New York, United States); IP-oriented QoS in the next-generation networks: application to wireless networks (speaker: Pascal Lorenz, Haute Alsace University, France); UMTS/IMT2000 (speaker: Hamid Aghvami, King's College London, United Kingdom); proactive management through key performance indicators for 3G systems (speaker: Said Soulhi, Ericsson, Canada); standards for wireless data communications: 802.11, 802.15, 802.16 (speaker: T. Cooklev, San Francisco State University, United States); signal-processing-

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DISTANCE TRAINING IN SAUDI ARABIA/(cont'd from page 2)

represent a part of the IT infrastructure supporting today's IPA digital services (including distance learning). From a user perspective, the design provides the required security, greater efficiency, and higher system availability.

The IPA and World Bank Organization Distance Learning Project

IPA and the World Bank Organization (WBO) collaboration goes back to the early 1990s. For more than 10 years the WBO has assisted IPA in the delivery of high-quality strategic training programs. In the past, training was conducted in the traditional (instructor-based) method.

Along with IPA's IT expansion, the Global Development Learning Network (GDLN) was initiated by the WBO in 2000. The GDLN was established with the intent to improve development around the world through the use of distance learning technologies. Today, the GDLN connects countries worldwide using advanced information and communication technologies. This enables GDLN partner countries (affiliates) to communicate, share knowledge, and learn from each others' experiences via consultation, coordination, and training events in a timely and cost-effective manner. Some GDLN affiliates were set up through WBO loans or grants, and most are operated by independent local organizations in their respective countries.

The GDLN core infrastructure (the *hub*) is hosted at the World Bank Institute (WBI) in Washington, DC, United States. From its initial inception, the GDLN has grown to over 70 affiliates (as of June 2005) located in more than 60 countries worldwide. GDLN affiliates include academic institutions, development agencies, government agencies, and non-governmental organizations. Between July 2004 and June 2005, GDLN facilitated more than 900 videoconference-based

activities, connecting an estimated 35,000 people worldwide. More on GDLN can be found at <http://www.gdln.org>.

Soon after its launch, IPA started working with the WBO to link its sites to the GDLN. The project is now completed, and will start operation by the end of this year. As a result, IPA expects to increase the number of both received and delivered training programs. Further development on this project will soon be available at IPA's Website (<http://www.ipa.edu.sa>).

A Glimpse into the Future: E-Training within the Gulf Cooperative Countries

Along with the GDLN, another project aimed at linking several public organizations responsible for training employees in the gulf cooperative countries (GCC) is underway. The IPA represents KSA in the group of six GCC nations. This GCC e-training project has a number of goals. The most significant are:

- Minimizing overall costs while increasing access to training material, seminars, fora, and conferences
- Sharing expertise among GCC organizations
- Issuing a common e-training course catalog to facilitate distance training and increase the expected number of participants

The GDLN and GCC e-training projects are expected to merge and provide a single comprehensive IT integrated solution.

It is important to note, however, that with any new technological innovation comes the need to manage change. Change management is often the most difficult challenge. The success of a project relies on not only proper setup of an IT infrastructure, but also its efficient use. Probably the most difficult change to manage in this respect is cultural.

And while recent years have seen several achievements in the field of distance learning, only time will determine the effective use of these technologies in applied training. With its infrastructure, IPA hopes to pave the way toward global development of distance training in the region.

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based strategies for packet collision resolution (speaker: Charles Cavalcante and Rodrigo Cavalcanti, Federal University of Ceara, Brazil); and telegraphic performance evaluation of wireless cellular networks (speaker: Francisco Barceló, University Polytechnic of Catalunya, Spain).

Prof. Farokh Marvasti (King's College, London, United Kingdom) and Dr. José Leite Pereira Filho (ANATEL, Brazil) were the keynote speakers, talking about telecommunications in developing countries and universal services deregulating in Telecommunications, respectively.

Finally, the organizing committee would like very much to thank the technical program committee members, who had hard work reviewing papers, and all the other participants who contributed to a successful conference.

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