Global Communications Newsletter

July 2003

10th Anniversary of the SoftCOM Conference

By Algirdas Pakstas, UK; Gottfried Luderer, USA; Dinko Begusic and Nikola Rozic, Croatia

The 10th International Conference on Software, Telecommunications and Computer Networks, SoftCOM 2002, was held 8–11 October 2002 in the pleasant ambience of the luxury ship *Dalmacija* on an attractive route visiting Split-Venice-Ancona-Dubrovnik. It was organized by the University of Split, the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Technology Center Split, and Croatian Telecom (HT-TKC Split) as the principal patron. The Conference was co-sponsored by the IEEE Communications Society (ComSoc) Technical Committee on Communication Software and the Ministry of Science and Technology of the Republic of Croatia.

SoftCOM has been co-sponsored by IEEE ComSoc since 1998, and conference reports are given each year at meetings of the Technical Committee on Communication Software during GLOBECOM; the last report on SoftCOM '02 was presented at GLOBECOM '02 in Taipei, Taiwan.

Researchers and experts from industry, research institutes, and universities from more than 40 countries around the world submitted a total of 217 papers for presentation at SoftCOM '02. The submitted papers were reviewed by an international group of more than 100 scientists from universities, institutes, and companies. Accepted papers were carefully selected based on their contribution, relevance, conceptual clarity, and overall quality. The conference program has featured three symposia dedicated to the hottest themes in the area of ICT:

- Mobile and wireless communications
- Internet technologies
- Development of software and services

Four special sessions, 12 general conference sessions, and one professional workshop dedicated to a wide spectrum of themes from the area of ICT were held. In addition, six half-day tutorials were held by worldwide-recognized experts from companies and universities (France, United Kingdom, United States, and Croatia).

Special sessions were dedicated to software agents, simulated active networks, databases in telecommunications, and electromagnetic compatibility. The technical sessions covered a wide area of topics, including communication software, architectures and protocols, control and management, QoS, wideband networks, optical communications, multimedia communications, virtual reality, and others.

The following tutorials were organized:

- QoS in the Next Generation of Wireless Networks (P. Lorenz, Universite de Haute Alsace, France)
- Engineering Value-Added Services in Internet Telephony (R. H. Glitho, Ericsson, Canada)
- Role of reliability in Computer Network Design (A. Pakstas, London Metropolitan University, United Kingdom)
- VoIP — Voice over the Internet (G. W. R. Luderer, Arizona State University, United States)
- Interaction of Humans with Communication Systems Electromagnetic Field (D. Poljak, University of Split, FESB)
- Some Implementations of Graphical Modelling in OpenGL (R. Whitrow, London Metropolitan University, United Kingdom)

In conjunction with SoftCOM '02, a Business Forum was organized featuring sessions, invited talks, and presentations with participation of managers, executives, experts, and governmental and institutional representatives, who discussed and exchanged opinions and experiences on a number of hot topics in contemporary and future ICT industries and markets, addressing business, technological, and social aspects.

During the conference days, SoftCOM '02 attendees had an opportunity to take part in interesting demonstrations of wideband Internet access via digital subscriber line (DSL) and wireless Internet access. A new system for marinas based on wireless Internet access using Bluetooth and WLAN technologies was also shown.

Extensive publishing activity accompanied the organization of the SoftCOM conference. Besides the proceedings of the conference and the accompanying professional events, several books have been published. The list of published titles includes the following:

- *New Communication Technologies*
- *Intelligent Transport Systems*
- *Quantum Mind Networks*
- *The Impact of Electromagnetic Radiation on the Human Body*
- *Dictionary of Communications Technology*

The organizers are particularly proud that during its first 10 years SoftCOM has been continuously growing. For example, for last year's conference 30 percent more papers were submitted than in the previous year. One of the most influential reasons is surely the ambiance of the cruise ship and the attractive route, which included the cities of Split, Venice, and Dubrovnik. But we believe that the main reason lies in the program profile of the conference: its distinctive feature is the orientation to the "soft" approach and techniques that mark ICT technology of the 21st century.

SoftCOM also provided a link between the two coasts of the Adriatic Sea. During the SoftCOM jubilee, the cruise ship *Dalmacija* visited the most attractive cities along the Croatian and Italian Adriatic coastlines: Split, Venice, Ancona, and Dubrovnik. Fruitful collaboration with the universities of Ancona, Lecce, and Bari has significantly contributed to the quality of the program. Formal meetings with the official rep-

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Deregulation of the Canadian Telecommunications Sector: The New Deal

By Omar Cherkaoui, Tawfic Charat, and Nathalie Rico, Canada

Contrary to the United States, Canada managed to preserve its monopolistic model up to the end of the 1980s. Orchestrated by the Canadian Radio-Television and Telecommunications Commission (CRTC), the Canadian telecommunications sector has quickly taken the example of its American neighbor, following both internal (technological changes, economic vision) and external (FTA, NAFTA, WTO, and United States) pressures.

Therefore, in 1992 the long-distance market was opened to free competition, followed by local telecommunications services in 1998. The government has encouraged and set up competition within sectors through the Telecommunications Act in 1993, which led to the possibility for telephony operators to enter the cable broadcasting market and vice versa. The Telecommunications Act also allowed operators to build information highways on a large scale. The regulation of the IP sector was left to market forces without any regulation, with only a few interventions to promote competition. The monopoly of the satellite communications sector (Telesat) was suppressed in 1998, whereas the international telecommunications sector (Teleglobe) was abolished during summer 2000. The CRTC has also lifted some of the barriers concerning foreign participation in Canadian telecommunications enterprises.

Faced with the opening of the markets, old oligopolies formed a commercial alliance named Stentor in order to share resources, accomplish collective R&D, build national standards, form strategic alliances, and, most important, benefit from a unique position and constitute greater weight in front of the CRTC. Actually, the Stentor group has been the object of numerous lawsuits and complaints because of its anticompetitive practices. Following the opening of the local communications market, the members of the Stentor group became direct competitors, which quickly led to the dismantling of Stentor, provoked by BCE (the owner of Bell Canada and of many telecommunications services suppliers in Canada and Ontario). The dismantling of Stentor followed the acquisition of a part of the Fonorola network by Bell Canada, which allowed it to expand its services to other provinces and become a competitor of its old partner, Stentor.

The new configuration also provoked many changes in the sector, as it did worldwide. Numerous mergers and acquisitions have been carried out, allowing the concerned entities to enlarge their services portfolios or create more dominant positions in a market that was now more open. However, the Canadian market remains dominated by the old oligopolies, which continue to use their dominant size to make use of certain advantages given by the quasi-monopoly from which they have benefited.

The impact of the new model has allowed the Canadian consumer to choose between many different service suppliers. Individuals can now select their long distance service suppliers, Internet providers, television service suppliers, and, recently, their local service providers. The multiplication of providers has not taken place throughout the entire Canadian territory. The competitors, who are subject to market forces, have hurried to the urban zones where they can target a bigger part of the market with lower investments. Private consumers (enterprises) have the same possibility to choose their foreign service providers (in most cases they choose American providers) and are able to benefit from a varied range of services, accompanied by more advantageous prices for certain services.

European Union Funding for R&D: 6th Framework Program

By Paulo de Sousa, EU

The Sixth Framework Programme (FP6) for European Union (EU) R&D was launched on 11 November 2002 and will run from 2002 to 2006. The budget for FP6 is €17.5 billion.

The first call for proposals under FP6 was made on 17 December 2002 with submissions closing in March and April 2003. Information and guidelines on how to participate in FP6 can be found at http://europa.eu.int/comm/research/fp6/pdf/how-to-participate_en%20.pdf

FP6 is made up of seven broad themes:

1. Life Sciences, Genomics, Biotechnology
2. Information Society Technologies (IST): http://europa.eu.int/comm/research/fp6/p2/index_en.html
3. Nanotechnologies and Nanosciences, Knowledge-Based Multifunctional Materials and New Production Processes and Devices
4. Aeronautics and Space
5. Food Quality and Safety
6. Sustainable Development, Global Change, and Ecosystems
   - Sustainable Energy Systems Work Programme
   - Sustainable Surface Transport Work Programme
   - Global Change and Ecosystems Work Programme
7. Citizens and Governance in a Knowledge-Based Society

There are also opportunities available under "Specific Activities" covering a wider field of research:

- Policy support and anticipating scientific and technological needs
- Horizontal research activities involving small to medium enterprises (SMEs)
- Specific measures to support international cooperation

Further information on collaboration with third countries can be found at http://www.cordis.lu/fp6/inco.htm

Opportunities exist for both experienced and young researchers to participate:

Expert Candidature Experts from member and associated states as well as from third countries are keenly sought by the Commission to provide the necessary independent assessment of applications under FP6. The Commission has published calls for experts to assist in evaluating and selecting proposals for research projects to be funded within the Sixth EU Research Framework Programme (FP6 2002–2006). Application forms are available at http://www.cordis.lu/experts/fp6_candidature.htm

The Marie Curie Actions have a budget of €1580 million and are largely based on the financing of training and mobility activities for researchers. These activities are aimed at the development and transfer of research competencies, the consolidation and widening of researchers' career prospects, and the promotion of excellence in European research. The

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DL Training Center in Telecommunications for CIS Countries

By Boris Krouk and Olga Zhuravleva, Russia

The Regional Community of CIS countries (RCC), which unites telecommunication administrations of new independent states with the support of the International Telecommunication Union (ITU), Geneva, Switzerland, plans to establish a DL Training Center. This DL training center will be a unique center to retrain and raise skills in the telecommunication industries of the former Soviet Republics.

Taking into account the vast geographical dispersion of trainees, it has been convenient to create the DL training center as a distributed structure based on telecommunications universities of CIS countries: Moscow Technical University of Telecommunications and Informatics, Russia; Siberian State University of Telecommunications and Information Sciences, Russia; St. Petersburg Sate University of Telecommunications, Russia; Odessa National Academy of Telecommunications, Ukraine; Minsk Higher College of Telecommunications, Byelorussia; Tashkent Electrotechnical Institution of Telecommunications, Uzbekistan; and the Alma-Atinsk Energy Institute, Kazakhstan.

In accordance with the aforementioned reasons, the general objectives of the DL training center and its partner universities have been determined:

- Establish the main server of the DL Training Center
- Elaborate university curriculums
- Elaborate recommendations for creating and designing the university sites
- Coordinate institutions activities

The objectives of partner institutions are to:

- Develop distance learning materials (an electronic library) on Web servers in accordance with the learning materials of the DL Training Center
- Create databases: "Trainees," "Learning process," "Trainers," and others
- Elaborate information materials for the main Web server of the DL training center
- Elaborate a control system of distance learning
- Set support systems for the learning process
- Organize the learning process (administration of Web servers and databases, dispatching, access administration, electronic group discussions, consultations, tutorials, attestation, etc.)

In the distributed DL Training Center, several Web servers are being connected to the Internet: the main server and the servers of the universities.

The main Web server of the DL Training Center will be located in Moscow, to keep all the information about the virtual university, its programs, enrollment rules, statistic data, and general university database. It will be possible to access any university server from the main Web server.

Besides general information of the DL training center, the server of any institution must contain detailed plans and pro-

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Videoconference Stuttgart: Novosibirsk Works!

By Boris Krouk and Olga Zhuravleva, Russia

Cooperation of the university with leading European manufacturers of telecommunications equipment allows to acquire information about new innovative technologies in proper time.

An example of such cooperation is an agreement between Siberian State University of Telecommunications and Information Sciences (SibSUTI, Novosibirsk) and Alcatel (Stuttgart, Germany). One of the items of this agreement is the delivery of state-of-the art knowledge to students, teachers, and post-graduate students of SibSUTI.

The knowledge that is expedient to be delivered to the Siberian university concerns the following fields:

- Economic status of Germany
- Economics of telecommunications
- Telecommunications market in Germany and Europe
- Strategy and policy of Alcatel in development of telecommunications equipment
- New production of Alcatel
- New versions of software programs
- Issues on systems and networks design based on of Alcatel equipment

Taking into account the vast distances between Novosibirsk, where SibSUTI is situated, and Stuttgart, Alcatel's headquarters in Germany, as well as the high expenses of lecturers' and trainees' traveling, it was decided to conduct videoconferences.

Videoconference via ISDN channels (today this service is available for citizens of most cities in Russia) possesses extensive pedagogical opportunities. It permits us to hold not only a group videoconference with a large number of participants, but also provides an opportunity for joint control of the computer screen: creation of sketches, drawings, simultaneous correction with a light pen in both sides; representation and transferring of written material. Nowadays the cost of such videoconferences is relatively low; thus, this technology is in widespread use in Western institutions. In Russia there is less experience in application of videoconferences to the DL process.

The introduction of videoconferencing into the training sphere will permit not only listening and seeing the lecture of a famous trainer, located in another continent, but also to accomplish interactive communication using the possibilities of videoconferences.

The tests showed that:

- This system allows holding group as well as studio videoconferences.
- It easily joins Alcatel videoconferencing settings.
- The system allows use of the possibilities of Windows software, different computer applications and editors, as well as computer graphics, video, and so on.
- Multimedia data projectors display relevant information on a big screen that is well observed in large rooms.
- There exists the possibility to connect VHS cameras, to control illumination and use various effects.
- Connection with other cities is carried out almost immediately by dialing a telephone number.

In 2002 videoconferences between Alcatel and SibSUTI were held. Lectures for different target groups were given (2 × 45 min). Discussions, question and answer sessions, and tutorials on burning economic and telecommunications issues were conducted.

From the Alcatel side, leading technical specialists, economists, and managers attended the videoconferences. The head of Pfortsheim University and professors and students from that institution also took part in them.

DL Training Center in Telecommunications for CIS Countries (cont'd)

grams carried out at the institution as well as necessary learning materials and databases for training clients. From the institution server one may contact the main server, performing communications with higher-level Web servers. It will also contain learning materials for local training.

According to this model, the services supporting the learning process are to be created in the universities.

Learning process organization service: recruits trainers and tutors, draws up plans and schedules of the learning process and monitors its course. This service has the following duties:

- Learning process planning: drawing up a schedule, a timetable of electronic consultations, examinations, tests and tutorials, keeping documentation
- Monitoring preparation and availability of necessary learning materials as well as keeping the information on the server regarding changes and additions coherent

Learning materials elaboration service: to control availability of all necessary learning materials and timely publication of the materials on the server; to prepare all necessary information that accompanies the learning process.

Learning process management service: controls timely fulfillment of assignments by trainees and timely evaluation and review of trainees' assignments by trainers. This service requires an access administrator of learning materials, a dispatcher of the learning process, and a database administrator. The access administrator provides trainees with logical names and passwords to access the DL system and opens access to learning materials. The dispatcher of the learning process registers all incoming tests, sends them to trainers' email addresses, monitors trainees' assignment deadlines, receives reviews from trainers, and sends them to trainees. The dispatcher also records trainees' progress, fills in students' electronic training cards and a register with training results, debts and dates of settlement of debts, and draws up certificates of qualification or retraining. The database manager is responsible for the correct content of the database and for timely filling of databases of trainees, trainers, current conditions, and results of training processes.

Programmers service: Programmers convert electronic learning materials into HTML format, provide interactive communication, develop software for optimal file transmitting, elaborate databases, create industrial enclosures for taking electronic tests and examinations, develop programs for optimal file transfer, and so on.

Multimedia studio: The object of this service is to prepare multimedia training courses according to trainers' scripts. These courses are installed on the Web server or CD-ROM.

Networks and Web servers service: Web server service, telecommunications and network technologies service, and administration of local networks. Web server service seeks to guarantee constant exploitation of all Web servers, information protection, and publication and update of information. These functions are carried out by a Web server administrator. A Web master is involved in Web page design. There is also the telecommunications and networks technologies service. Its functions consist of organizing Web server access via the Internet, email operation, and technical support of teleconferences and videoconferences via the Internet. An administrator of local networks maintains local computer networks and computer classes.

New telecommunications and network technologies service: It will search and apply up-to-date technologies in DL centers. This service is for future-proofing the system.

Methodical support of the learning process: Trainers from higher educational establishments who are familiar with conventional training are attracted to the distance learning process. Most of them have no experience in the creation of electronic and multimedia learning materials. One of the functions of methodical support is to teach trainers to design learning materials for DL. This can be done in the form of written instructions or recommendations, or by means of methods seminars, skill raising courses, and so forth.

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resentatives of these cities were organized in each city, and public presentations were held aboard ship.

The program also included a joint Special Session on Scientific Computing and GRID organized in collaboration with the conference LHC Days in Split, which is an international conference on physics of elementary particles jointly organized by the University of Split, the University of Zagreb, and Institute Ruder Boskovic of Zagreb (http://www.unist.hr/lhc-days/2002/).

More information about SoftCOM is available at the Web address http://www.fesb.hr/SoftCOM, which also includes the Call for Papers for SoftCOM '03.

EU FUNDING FOR R&D! *(continued from page 2)*

actions are open to researchers in all fields of scientific and technological research from the EU Member States, countries associated with FP6, and third world countries.