SoftCOM 2003 - CONTENTS

http://www.fesb.hr/SoftCOM

ORGANIZING COMMITTEE GREETINGS

On behalf of the SoftCOM'03 Organizing Committee we have the great pleasure to invite you to attend the 11th SoftCOM 2003 Conference in a pleasant ambience aboard the cruising ship "Ancona". We look forward to welcome scientists, professionals and executives in the field of communication and information technology from more than 40 countries all around the world to participate in this event. We are happy to host you aboard the ship "Ancona" cruising along the Croatian and Italian costs of the Adriatic Sea and visiting Split, Venice, Ancona and Dubrovnik. You will have the opportunity to share ideas with other participants in a pleasant and inspiring ambience.

This year's Program covers a number of technical, professional and social events. The central event is the 11th International Conference on Software, Telecommunications and Computer Networks. The Conference Program includes symposiums, special sessions, technical sessions, tutorials and workshops. The Business Forum will gather managers, executives, government and institution representatives from the area of ICT to discuss social and economic aspects of ICT. The Program of the SoftCOM'03 will be enriched by presentations of new communication and information technologies, equipment and services.

In addition, the cruising ship "Ancona", visiting the most attractive cities along the Croatian and Italian Adriatic coastline, will provide the unique opportunity for meetings of their representatives.

The success of the Conference is guaranteed by the experience of the executive team and contributions from many individuals and institutions. On behalf of the SoftCOM'03 Organizing Committee We would like to express the special thanks to the IEEE Communication Society for the technical co-sponsorship and invaluable support We are looking forward to hosting you aboard.

TECHNICAL PROGRAM CHAIRS MESSAGE

The 11th International Conference on Software, Telecommunications and Computer Networks SoftCOM 2003 will be held from 7 to 10 October 2003 in the pleasant ambience of the cruising ship "Ancona" on the attractive route between Split-Venice-Ancona-Dubrovnik. It is organized by the University of Split, the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture. The Conference is sponsored by the Ministry of Science and Technology of the Republic of Croatia, the Ministry of Maritime Affairs, Transportation and Communications and by the IEEE Communications Society (COMSOC) Technical Committee of Communication Software. Researchers and experts from industry, research institutes and universities from more than 40 countries all around the world have submitted a total of 252 papers for presentation at SoftCOM'03. Submitted papers have been reviewed by more than 100 scientists from universities, institutes and companies all over the world. All accepted papers have been carefully selected based on their contribution, relevance, conceptual clearness and overall quality. Nearly 70% of the submitted papers have been recommended for presentation within the technical program.

The conference program features two symposiums dedicated to the most current themes in the area of ICT: mobile and wireless communications, and intelligent networks. Five special sessions and nineteen general conference sessions, and one professional workshop dedicated to the wide spectra of themes from the area of ICT will be held too. In addition four half day tutorials will be presented by worldwide recognized experts.

In conjunction with the SoftCOM'03 conference a Business Forum has been organized featuring sessions, invited talks and presentations with participation of managers, executives, experts, government and institutions' representatives who will discuss and exchange opinions and experiences on a number of hot topics in the contemporary ICT and ITS industries and markets including business, technological and social aspects.

On behalf of the Program committee we would like to thank and credit the authors for their excellent contributions. Particularly we would like to thank to the reviewers for their great job as well as to the IEEE Communications Society (COMSOC) Technical Committees of Communication Software for the support. The fruitful collaboration with the universities from Ancona, Lecce, Bari, Budapest, Zagreb and London have contributed to the quality of the Program significantly.

We are looking forward to seeing you aboard.

Program Committee Co-chairs

Nikola Rožić, Dinko Begušić

PLENARY SESSION SPEAKERS

SoftCOM 2003, October 7, 2003
Split, Croatia

LIBERALISATION OF TELECOMMUNICATION MARKET IN CROATIA

Roland Žuvanić – *Minister of Maritime, Transport and Communications*

Nives Sandri : *Regulation on Network Access and Interconnection*

Ivana Krivić: *Regulation on the Frequency Radio Spectrum Allocation*

Krešo Antonović: *Regulation on Addressing and Numbering in Telecommunications and the Payment of Fees*

SoftCOM 2003 COMMITTEES

EXECUTIVE COMMITTEE

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Davor Butković, Faculty of Electrical Engineering and Computing, Zagreb

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Želko Domazet, The Dean of the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Split

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Ignac Lovrek, University of Zagreb, Croatia
Gottfried Luderer, Arizona State University, USA
Andrej Ljolje, AT&T, USA
Hiroshi Masuyama, Tottori University, Japan
Dean Marusic, Ericsson - Nikola Tesla, Croatia
Miljenko Mikuc, University of Zagreb, Croatia
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Algirdas Pakstas, London Metropolitan University, UK
Nikola Pavesic, University of Ljubljana, Slovenia
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Zarko Sutlar, Croatian Telecom, Croatia
Krzysztof Wesolowski, University of Poznan, Poland

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MINISTRY OF MARITIME AFFAIRS, TRANSPORTATION AND COMMUNICATIONS

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TUTORIALS

SoftCOM 2003, October 7-10, 2003
Split, Dubrovnik (Croatia)
Venice, Ancona (Italy)

DUBROVNIK, Friday, October 10, 09:00-12:30, (KORCULA)

T1 -INTRODUCTION TO WAN PLANNING AND DESIGN

Algirdas Pakstas, London Metropolitan University, UK

Abstract: Tutorial is providing introduction to WAN planning and design primarily for the capacity planning. Tutorial consists of four parts. The first part of the Tutorial is devoted to the general overview of the network design problem and related issues (design alternatives, evaluating and ordering the designs, trade-off between performance and cost, example of the simplistic solution to the Network Design Problem). The second part looks at the two location problem with example of voice traffic. It starts from the straightforward solution which is far from optimal and gradually improves it by adding PBXs, reducing the trunks at critical locations, analyzing actual voice traffic profile, and evaluating blockings with the help of Erlang-B function. The third part is focusing on example with three locations and data network traffic. Features of data network traffic are discussed and elements of the Queueing Theory needed to analyze link delays are introduced. Designing of the data network itself includes development of the the traffic model, the traffic table and calculating the link flows. Finally, network routing policies are discussed from the point of view of their importance for capacity planning. Heuristic algorithm called Drop Algorithm is introduced for optimization of initial designs. Limitations of the Drop Algorithm are demonstrated. Part four is devoted to demonstration of the WAN design tool Delite.

***Biography**: Prof. Algirdas Pakstas received his M.Sc. in Radiophysics and Electronics in 1980 from the Irkutsk State University, Ph.D. in Systems Programming in 1987 from the Institute of Control Sciences. Currently he is with the London Metropolitan University, Department of Computing, Communications Technology and Mathematics where he is doing research the area of Communications Software Engineering and is teaching courses "Network Planning and Management" and "Computer Systems and Networks". He is active in the IEEE Communications Society Technical Committees on Enterprise Networking, Communications Software and Multimedia Communications. He has published 3 research monographs (2 authored and 1 edited) and more than 140 other publications. He is a senior member of the IEEE and a member of the ACM and the New York Academy of Sciences. He is currently a member of the Editorial Boards of the IEEE Communications Magazine, Cybernetics and Systems Analysis, Journal of Information and Organizational Sciences.*

VENICE, Wednesday, October 8, 09:00-12:30, (KORCULA)

T2- IP-ORIENTED QOS IN THE NEXT GENERATION NETWORKS: APPLICATION TO WIRELESS NETWORKS

Pascal LORENZ, Universite de Haute Alsace, FRANCE

Abstract: Emerging Internet Quality of Service (QoS) mechanisms are expected to enable wide spread use of real time services for example, VoIP and videoconferencing. The "best effort" Internet delivery cannot be used for the new multimedia applications. New technologies and new standards are necessary to offer Quality of Service (QoS) for these multimedia applications. Therefore new communication architectures integrate mechanisms allowing to guarantee QoS services as well as high rate for the communications. The promising service level agreement to a mobile Internet user is hard to come by, since there may not be enough resources available in some parts of the IP/ATM networks as mobile terminal is moving into. The emerging QoS architectures, differentiated services and integrated services do not consider the network nodes are mobile. QoS mechanisms enforce a differentiated sharing of bandwidth among services and users. Thus, there must be mechanisms available to identify traffic flows with different QoS parameters, and to make it possible to charge the users based on requested quality. Integration of fixed and portable wireless access into IP networks presents a cost effective and efficient way to provide seamless end-to-end connectivity and ubiquitous access in a market where demands on mobile Internet have grown rapidly and predicted to generate billions of dollars in revenue.
The tutorial covers an introduction to QoS in heterogeneous networks, Internet delivery over future wireless networks, the ATM, MPLS, DiffServ, IntServ protocols, … It addresses characteristics of the Internet and its mobility features and how it could guarantee QoS using wireless IP services. It also presents concepts of routing, quality-of-service provisioning and security, baseline architecture of the inter-networking protocols and end to end traffic management issues.

Biography*: Pascal LORENZ received his Ph.D. degree in 1994 from the University of Nancy, France. Between 1990 and 1995 he was research engineer at WorldFIP Europe and at Alcatel-Alsthom. Since 1995 he is associate professor at the University of Haute-Alsace. His research interests include QoS, wireless networks and high-speed networks. He was the Program and Organizing Chair of the IEEE ICATM'98, ICATM'99, ECUMN'00, ICN'01, ECUMN'02 conferences and the Co-Chair of ICATM'00, ICATM'01 conferences. Since 2000, he is Technical Editor of IEEE Communications Society Editorial Board. He is member of many international committees programs and he has served as guest editor for a number of special issues, including Telecommunication System, IEEE Communications Magazine and LNCS. He has served as referee for several IEEE conferences, he has organized several technical sessions and has chaired many of them. He is the author of 60 international publications.*

SPLIT, Tuesday, October 7, 09:00-12:30, (KORCULA)

T3 - WIRELESS INTERNET ACCESS

Gottfried W. R. Luderer, Arizona State University, USA

Abstract: The Internet is more and more accessed over air interfaces. Several approaches are competing. The initial industry efforts focused on extending the cellular telephone (GSM) network for data., first by sending data over voice channels, then by augmenting the capacity by bundling several voice channels (HSCSD), eventually overlaying a packet-switched data service (GPRS). In the next generation of the cellular service, UMTS or WCDMA are offering widely increased bandwidth and capabilities. In other areas there were early efforts to add data service to the analog network (CDPD) and more recently advanced data services like DoCoMo's iMode originating in Japan. Meanwhile in the computer networking world, the local area network (LAN) standards have been augmented to allow wireless access. These Wireless LANs (WLAN) have recently gained considerable momentum. Several standard versions of this "WiFi" service have evolved, notably 802.11a, 802.11b, 802.11g; ETSI 's Hiperlan is another competitor. In the short-range area, Bluetooth enjoys increasing popularity. This seminar will give an overview of the underlying technology and review the current status of this rapidly expanding field.

Biography: *Dr. Gottfried W. R. Luderer was appointed Professor, ISS Chair of Telecommunication, at Arizona State University in the Fall of 1990. His current research program in networking includes work in the areas of control of ISDN/Broadband ISDN networks, mobile communication networks, and multimedia communication, which ranges from call processing for intelligent network services to network management.*
Research emphasis is on advanced software technologies for development of telecommunication networks, as used in switches, for signaling and in network management, with a focus on object and component technology and formal definition techniques. Besides the academic involvement at the university, Dr. Luderer has been teaching short courses since 1992 on high-speed networks and telecommunication software architecture in various countries. From 1965 to 1989, Dr. Luderer was with AT&T Bell Labs, at last directing research on next generation switch architectures, based on fast packet switching technology on the hardware side and object-oriented design technology on the software side, resulting in some of the earliest demonstration networks for multimedia communication. Dr. Luderer holds Diplomingenieur (M.S) and Dr.-Ing. (Ph.D) degrees in Electrical Engineering from the Technical University of Braunschweig, Germany. He holds two patents. While at Bell Labs, he taught at Stevens Institute of Technology in Hoboken, NJ, and at Princeton University. He is member of ACM, IEEE, IEEE Computer and Communication Societies.

ANCONA, Thursday, October 9, 09:00-12:30, (KORCULA)

T4 - INTERACTIVE MULTIMEDIA NETWORKING

Mario Baldi, Torino Polytechnic, ITALY

Abstract: Applications that require real-time interaction among their users are gaining importance and diffusion as computer networks become more powerful and ubiquitous. Many such applications impose very stringent requirements on the network; among the applications today widely deployed, videoconferencing is the most demanding.
In order for the participants in a videoconference call to interact naturally, the end-to-end delay should be below human perception; even though an objective and unique figure cannot be set, 100 ms is widely recognized as the desired one way delay requirement for interaction.
Since the global propagation delay can be about 100 ms, the actual end-to-end delay budget available to the system designer (excluding propagation delay) can be no more than 10 ms.
We identify the components of the end-to-end delay in various configurations with the objective of understanding how it can be kept below the desired 10 ms bound.

This tutorial analyzes these components going step-by-step through six system configurations obtained by combining three generic network architectures with two video encoding schemes. We study the transmission of raw video and variable bit rate (VBR) MPEG video encoding over (i) circuit switching, (ii) synchronous packet switching, and (iii) asynchronous packet
switching.
Various queuing and scheduling algorithms for asynchronous and synchronous packet networks will be analyzed and compared. The tutorial also studies the implications ofbounded delay services on the architecture of packet switches.

Biography:

Mario Baldi is Associate Professor on tenure track at the Computer Science Department of Torino Polytechnic, Torino, Italy and Vice President for Protocol Architecture at Synchrodyne Networks, Inc., New York.

He received his M.S. Degree Summa Cum Laude in Electrical Engineering in 1993, and his Ph.D. in Computer and System Engineering in 1998 both from Torino Polytechnic. He was assistant professor on tenure track at Torino Polytechnic from 1997 to 2002. He joined Synchrodyne Networks, Inc. in November 1999.

Mario Baldi has been visiting researcher at the IBM T. J. Watson Research Center, Yorktown Heights, NY, at Columbia University, New York, NY, and at the International Computer Science Institute (ICSI), Berkeley, CA.

As part of his extensive research activity at Torino Polytechnic, Mario Baldi has been leading various networking research projects, involving Universities and industrial partners, funded by European Union, Local Government, and various companies, including Telecommunications Carriers, such as Infostrada and Telecom Italia, and research institutions, such as Telecom Italia Labs.

Mario Baldi provides on a regular basis consultancy and training services, both directly to companies and through various training and network consultancy centers.

Mario Baldi co-authored over 50 papers on various networking related topics and two books, one on internetworking and one on switched local area networks.

TECHNICAL PROGRAM: SYMPOSIUMS

SoftCOM 2003, October 7-10, 2003
Split, Dubrovnik (Croatia)
Venice, Ancona (Italy)

SYM A - SYMPOSIUM ON INTELLIGENT NETWORKS

SPLIT, Tuesday, October 7

Tuesday, October 7, 17:00-18:30, (BRAC)

SYM A1 – INTELLIGENT NETWORKS I

Session organizer: Gabor Nemeth, Budapest University of Technology of Economics, Hungary
Chair: Ignac Lovrek, University of Zagreb, Croatia

Knowledge-Based Generic Intelligent Network Model and Its Applications (Invited paper)
Gabor Nemeth, Budapest University ofTechnology of Economics, Hungary

On Reducing Program Indeterminacy via Partitioning
Shean T. McMahon, *Raphael R. Some*, *Isaac Scherson*, University of California, USA

Applications of a Context Ontology Language
Thomas Strang, German Aerospace Center (DLR), Germany; *Claudia Linnhoff-Popien*, *Korbinian Frank*, Ludwig-Maximilians-University (LMU), Germany

Objects in the Semantic Web
Jakub Guttner, Brno University of Technology, Czech Republic

Software Configurable Network Structures In WDM-based Metropolitan Resilient Packet Rings
Peter Szegedi, Budapest University of Technology and Economics, Hungary

Enhancing NGN with Run-time Managing Service Interactions
Jiuyun Xu, *Fangchun Yang*, Beijing University of Posts & Telecommuncations, China

VENICE, Wednesday, October 8

Wednesday, October 8, 09:00-10:30, (BRAC)

SYM A2 - INTELLIGENT NETWORKS II

Chair: Gabor Nemeth, Budapest University of Technology of Economics, Hungary

Intelligent Mobility Management in All-mobile Networks (Invited paper)
Vjekoslav Sinkovic, *Ignac Lovrek*, University of Zagreb, Croatia

Using Mobile Agents in Reconfigurable Radio Networks
Gyula Rabai, *Sandor Imre*, Budapest University of Technology and Economics, Hungary

Network Discovery in Mobile Agent Based Network Management
Gergely Kontra, Budapest University of Technology and Economics, Hungary

An Agent-based Approach for Detection of Security Vulnerabilities in Networked Systems
Rui Costa Cardoso, *Mario Marques Freire*, University of Beira Interior, Portugal

Resilience Schemes for Optical Networks with Dynamic Configuration Capabilities
Zsolt Lakatos, Budapest University of Technology and Economics, Hungary

Proxy-Based Wireless Network Security Architecture For Role Based Workflows
Qurban Memon, Karachi Institute of Information Technology, Pakistan

SYM B - SYMPOSIUM ON FUTURE WIRELESS SYSTEMS

VENICE, Wednesday, October 8

Wednesday, October 8, 09:00-10:30, (VIS)

SYM B1 – FUTURE WIRELESS SYSTEMS I

Session organizer: Mario De Blasi, University of Lecce, Italy
Chair: Mario De Blasi, University of Lecce, Italy

Authentication Protocols in 3G Wireless Networks
Gennaro Boggia, *Pietro Camarda*, *Nicola de Cesare*, Politecnico di Bari, Italy

Usage of BICC and SIP protocol in IP Core Network
Lovre Hribar, *Damir Buric*, Ericsson Nikola Tesla, Croatia

Optimising SIP Performances with a Profile Based Approach
Ahmed Meddahi, *Gilles Vanwormhoudt*, ENIC Telecom Lille 1, France; *Hossam Afifi*, Institut National des Telecommunications, France

An architecture for seamless IP mobility
Juan M. Oyoqui, *Antonio Garcia-Macias*, CICESE Research Center, Mexico

Seamless Handover for Real-Time and Multicast Mobility
Thomas C. Schmidt, *Matthias Wahlisch*, Fachhochschule fur Technik und Wirtschaft, Germany

Wednesday, October 8, 11:00-12:30, (VIS)

SYM B2 – FUTURE WIRELESS SYSTEMS II

Chair: Mario De Blasi, University of Lecce, Italy

Position-Aware Optimization of MAC Organization in Power-Efficient Ad-Hoc Networks
Fabrizio Granelli, *Deepak Agrawal*, University of Trento, Italy

Delay Control in the OLSR protocol
Amina Naimi Meraihi, *Philippe Jacquet*, INRIA Rocquencourt, France

Internet Connectivity for Mobile Ad hoc Networks Employing OLSR protocol
Amir Qayyum, Center for Advanced Research in Engineering, Pakistan; *Umar Farooq*, *M. Faisal Amjad*, National University of Science and Technology, Pakistan

A Bi-directional Tunneling to Improve Mobility and Scalability in Mobile Multicast
Hamid Sharif, *Marc Vergo*, University of Nebraska, USA

An Optimal Deterministic Algorithm for Gossiping in Known Radio Networks
Leszek Gasieniec, *Igor Potapov*, *Qin Xin*, The University of Liverpool, UK

Wednesday, October 8, 15:15-16:45, (VIS)

SYM B3 – FUTURE WIRELESS SYSTEMS III

Chair: Mario De Blasi, University of Lecce, Italy

Further Evolution of UMTS Network towards 3.5G
Ivan Pismis, Ericsson Nikola Tesla, Croatia

Performance Analysis of CRTP and ECRTP
Somasundaram Perianayagam, *Siva Kollipara*, *Mikael Degermark*, *Stephen Pink*, University of Arizona, USA

A Survey on LDPC- and Turbo-Decoder Implementations
Michael J. Thul, *Frank Kienle*, *Norbert Wehn*, University of Kaiserslautern, Germany

Optimization of Relay Location and Connectivity in Wireless Broadband Distribution Networks
Vic Grout, University of Wales, United Kingdom

Semi-Automatic MPEG-7 Metadata Generation of Mobile Images with Spatial and Temporal Information in Content-Based Image Retrieval
Pei-Jeng Kuo, *Terumasa Aoki*, *Hiroshi Yasuda*, The University of Tokyo, Japan

TECHNICAL PROGRAM: SPECIAL SESSIONS

SoftCOM 2003, October 07-10, 2003
Split, Dubrovnik (Croatia)
Venice, Ancona (Italy)

SPLIT, Tuesday, October 7

Tuesday, October 7, 15:15-16:45, (KORCULA)

SS1 - SPECIAL SESSION ON HOME NETWORKS AND NETWORKED APPLIANCES

Session organizer: Algirdas Pakstas, London Metropolitan University, UK
Chair: Algirdas Pakstas, London Metropolitan University, UK

A Distributed and Replicated Resource Repository Architecture for Hierarchically Configurable Home Network
JunHo Park, *JooYong Oh*, *JaeChul Moon*, *SoonJu Kang*, Kyungpook National University, Korea

A Performance Comparison of Ethernet Backoff Algorithms
Chunkai Yin, *Damla Turgut*, University of Central Florida, USA

Bluetooth Based Smart Home System
I. Stojan, *A. Restovic*, Ericsson Nikola Tesla d.d., Croatia; *D. Begusic*, University of Split, Croatia

DUBROVNIK, Friday, October 10

Friday, October 10, 09:00-10:30, (HVAR)

SS2 - UML IN COMMUNICATIONS SOFTWARE DESIGN AND IMPLEMENTATION

Session organizer: Algirdas Pakstas, London Metropolitan University, UK
Chair: Romas Mikusauskas, London Metropolitan University, UK

Conceptual Framework for Design Reuse in Service Development
Petri Heinila, *Jussi Vestman*, *Mikko Eronen*, *Jari Porras*, Lappeenranta University of Technology, Finland

UML in Defining the Conceptual Model for Distance Learning System Based on Dialogue
Bozidar Kovacic, University of Rijeka, Croatia; *Zoran Skocir*, University of Zagreb, Croatia

Design and Analysis of Embedded Real-Time Communication Systems Using UML and Petri Nets
Hrvoje Sertic, *Hrvoje Lucic*, Ericsson Nikola Tesla, Croatia

Visualizing formal specifications using diagrams
Frantisek Scuglik, Brno University of Technology, Czech Republic

A Network Management Platform Adaptable to Model Evolution
Nathalie Rico, *Omar Cherkaoui*, University of Montreal, Canada

ANCONA, Thursday, October 9

Thursday, October 9, 09:00-10:30, (HVAR)

SS3 - RECENT ADVANCES IN TURBO CODING TECHNIQUES I

Session organizer: Franco Chiaraluce, Universita Politecnica delle Marche, Italy
Chair: Franco Chiaraluce, Universita Politecnica delle Marche, Italy

Uniform Puncturing Approach to the Performance Evaluation of Punctured Turbo Product Codes: Theory and Applications (Invited paper)
Franco Chiaraluce, Universita Politecnica delle Marche, Italy; *Roberto Garello*, Politecnico di Torino, Italy

Joint Source-Channel Decoding of Turbo Codes in Rayleigh Fading Channels
Ming Sun, Shandong University, China; *Dong Feng Yuan*, Shandong University, Southeast University, China

Turbo code minimum distance computation by the all-zero iterative decoding algorithm
Roberto Garello, *Andres Vila*, Politecnico di Torino, Italy

Ultra-Fast Convergence Iterative Decoding Based on Transient Dynamics Suppression
B. Scanavino, Politecnico di Torino, Italy; *G.M. Maggio*, STMicroelectronics Inc., Italy; *Z. Tasev*, *L. Kocarev*, University of California, USA

Parallel Concatenation of Flexible High Rate Convolutional Codes
Marco Ferrari, CNR-IEIIT, Italy; *Stefano Bertorelli*, *Sandro Bellini*, Politecnico di Milano, Italy

Thursday, October 9, 11:00-12:30, (HVAR)

SS3 - RECENT ADVANCES IN TURBO CODING TECHNIQUES II

Chair: Franco Chiaraluce, Universita Politecnica delle Marche, Italy

Turbo codes performance over block fading channels
Fulvio Babich, *Francesca Vatta*, University of Trieste, Italy; *Guido Montorsi*, Politecnico di Torino, Italy

Construction of delay-constrained interleavers in the permutation index domain
Stefano Mangione, *Giovanni Garbo*, Universita di Palermo, Italy

An Overview of Some Efficient Encoding and Decoding Algorithms for Low-Density Parity-Check Codes
Enrico Paolini, *Gianluigi Liva*, *Marco Chiani*, University of Bologna, Italy

A Statistical Model of Convolutional Interleavers for Concatenated Codes
M. Siti, *D. Gatti*, *F. Osnato*, STMicroelectronics Srl, Italy

MLC/PDL System Based on LDPC Codes with 64QAM Constellations over Rayleigh Fading Channels
Xiumei Yang, *Piming Ma*, *Xinying Gao*, Shandong University, China*; Dongfeng Yuan*, Shandong University, Southeast University, China

SPLIT, Tuesday, October 7

Tuesday, October 7, 09:00-11:00, (BRAC)

SS4 - COMMUNICATIONS WITH ACTIVE SIMULATION NETWORKS (CASN)

Session organizer: Drissa Houatra, France Telecom R&D, France
Chair: Drissa Houatra, France Telecom R&D, France

Dynamic service management in active networks
Habib Bakour, *Nadia Boukhatem*, Ecole Nationale Superieure des Telecommunications, France

Towards Diverse Protection of Data Streams in Programmable Application Layer Overlay Networks
Christian Bachmeir, *Peter Tabery*, *Johannes Kaefer*, Munich University of Technology, Germany

Strong Authentication for Active Networks
Lawrence Cheng, *Alex Galis*, *Walter Eav*es, University College London, United Kingdom, *Dusan Gabrijelcic*, Jozef Stefan Institute, Slovenia

On Inter-protocol Fairness of Active Network-based Multicast Congestion Control Protocols
Riri Sari, University of Indonesia, Indonesia, University of Leeds, United Kingdom; *Karim Djemame*, University of Indonesia, Indonesia

Tuesday, October 7, 17:00-18:30, (KORCULA)

SS5: NETWORK SIMULATORS IN EDUCATION

Session organizer: Algirdas Pakstas, London Metropolitan University, UK
Chair: Algirdas Pakstas, London Metropolitan University, UK

JPDC: Java Package for Distributed Computing
Umberto Ferraro Petrillo, *Delfina Malandrino*, *Alberto Negro*, University of Salerno, Italy

A Small World and Scale Free Model for Email Communication
Yihjia Tsai, *Ping-Nan Hsiao*, *Ching-Chang Lin*, *Cheng-Chin Lin*, University of Tamkang, Republic of China

TECHNICAL PROGRAM: GENERAL CONFERENCE

SoftCOM 2003, October 07-10, 2003
Split, Dubrovnik (Croatia)
Venice, Ancona (Italy)

SPLIT, Tuesday, October 7

Tuesday, October 7, 15:15-16:45, (BRAC)

S1 - COMMUNICATIONS SOFTWARE

Chair: Monika Kapus-Kolar, Jozef Stefan Institute, Slovenia

Specifying Action Priorities in a Sublanguage of E-LOTOS
Monika Kapus-Kolar, Jozef Stefan Institute, Slovenia

Using UML for the Design of Communication Protocols: The TCP case study
Kleanthis Thramboulidis, *Alexandros Mikroyannidis*, University of Patras, Greece

An Expandable Implementation Method for Robust Header Compression
Chang Yang, Panasonic Singapore Laboratories Pte Ltd, Singapore

IP Address Lookup with Skipped Multibit Trie
Wu Weidong, Huazhong university of science and technology, Republic of China

Convergence of Mobile Agent Technology and J2EE in Enterprise Information Systems
Juraj Puksec, Croatia Control Ltd., Croatia; *Darije Ramljak*, IBM Croatia Ltd., Croatia; *Ozren Labor*, *Darko Huljenic*, Ericsson Nikola Tesla d.d., Croatia

Software Quality Prediction Based on Information Analysis - A Decision Tree Approach
Gordan Topic, *Dragan Jevtic*, University of Zagreb, Croatia

Completeness of the Internet Core Topology Collected by a Fast Mapping Software
Mickael Hoerdt, *Damien Magoni*, Universite Louis Pasteur, France

Formal Specification of IEEE1451.1 fragments
Ondrej Rysavy, *Frantisek Bures*, Brno University of Technology, Czech Republic

Tuesday, October 7, 15:15-16:45, (HVAR)

S2 - TELECOMMUNICATIONS SERVICES DESIGN AND QOS I

Chair: Marius Portmann, University of New South Wales, Australia

Quality of Service evaluation in Multimedia services
Augustin Radu, Institut National des Telecommunications, University of Marne la Vallee, France; *Genevieve Baudoin*, ESII, France

An Intelligent Policy-based Framework for QoS Provisioning via COPS-PR
Dan Chen, *Jie Wu*, *Zhongsheng Luo*, ZTE Corporation, China

A Novel Buffer Management Scheme for Supporting QoS in HAN
Chi-Chun Lo, *Yu-Tso Chen*, *Pei-Yu Yeh*, National Chiao-Tung University, Taiwan

QoS Support for SIP Based Applications in a Diffserv Networks
Luca Veltri, University of Parma, Italy; *Stefano Salsano*, *Donald Papalilo*, University of Rome "Tor Vergata", Italy

Providing QoS Guarantees in Input-Queued Switches: Advances and Issues
Qingxu Xiong, Beijing University of Aeronatics & Astronautics, China

QoS Provisioning of FTP and HTTP flows in a Differentiated Services Network
Evi Tsolakou, *Eugenia Nikolouzou*, *Iakovos Venieris*, National Technical University of Athens, Greece

Lightest K-shortest Routing: A Delay-Constraint QoS Routing Approach
Tao Liu, *Zhengxin Ma*, *Xuming Liu*, Tsinghua University, China

SLA Acceptance and Optimal Resource Distribution in End-to-End QoS Routing
Srecko Krile, Polytechnic of Dubrovnik, Croatia; *Slavko Saric*, University of Zagreb, Croatia

Tuesday, October 7, 17:00-18:30, (HVAR)

S3 - TELECOMMUNICATIONS SERVICES DESIGN AND QOS II

Chair: Juha Kalliokulju, Nokia Ltd., Finland

Presence Service Optimization for UMTS
Juha Kalliokulju, Nokia Ltd., Finland

Extending MPLS Traffic Engineering to deal with QoS
Alessio Botta, CoRiTeL, Italy; *Paola Iovanna*, *Roberto Mameli*, *Giovanna Piantanida*, Ericsson Lab Italy, Italy; *Stefano Salsano*, University of Rome "Tor Vergata", Italy

A Parallel Plane Fault-Tolerant MIN for Satellite ATM Networks
Jeong-Jun Suh, *Young-Keun Park*, Yonsei University, Korea

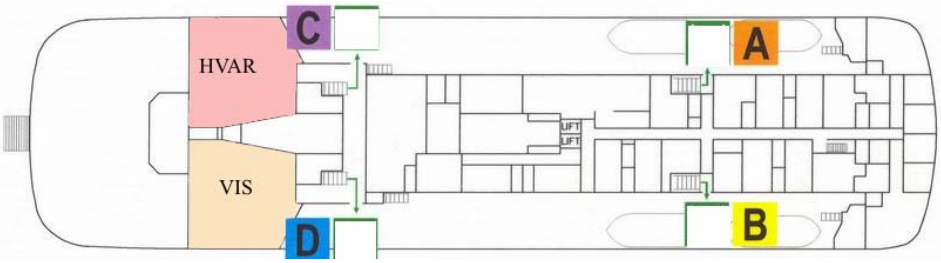
Statistical Performance Verification of Application Layer Service Components based on User Feedback
Marius Portmann, *Aruna Seneviratne*, University of New South Wales, Australia

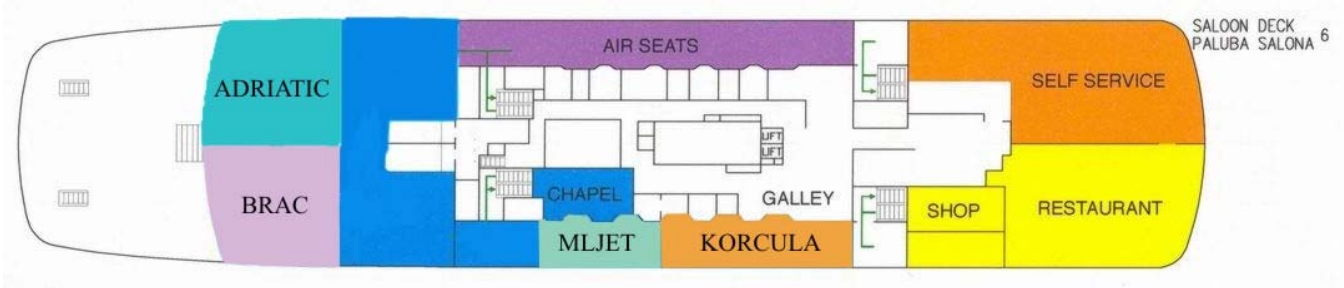
A Study of End-to-End Quality of Service for Real Time Applications over MPLS Networks with Traffic Engineering and DiffServ
Antonio Carlos de Oliveira Junior, *Paulo Roberto Guardieiro*, Federal University of Uberlandia, Brazil

TIMETABLE A: TECHNICAL PROGRAM, TUTORIALS & WORKSHOP

Time / Hall	BRAC	HVAR	VIS	KORCULA
SPLIT, Tuesday, October 7				
09:00-11:00	SS4: Communications with Active Simulation Networks	S16: Signal Processing in Communication Systems	WSCC: Workshop on Contemporary Communications I	T3: Wireless Internet Access
11:00-13:30	OPENING CEREMONY *(ADRIATIC)*			
15:15-16:45	S1: Communications Software	S2: Telecommunications Services Design and QoS I	WSCC: Workshop on Contemporary Communications II	SS1: Home Networks and Networked Appliances I
17:00-18:30	SYM A1: Intelligent Networks I	S3: Telecommunications Services Design and QoS II		SS5: Network Simulators in Education
VENICE, Wednesday, October 8				
09:00-10:30	SYM A2: Intelligent Networks II	S4: Network Operations and Management I	SYM B1: Future Wireless Systems I	T2: IP-Oriented QoS in the Next Generation Networks: Application to Wireless Networks
11:00-12:30	S15: Information Infrastructure and Security	S5: Network Operations and Management II	SYM B2: Future Wireless Systems II	
15:15-16:45			SYM B3: Future Wireless Systems III	
ANCONA, Thursday, October 9				
09:00-10:30	S6: Internet and IP based Environments and Services I	SS3: Recent Advances in Turbo Coding Techniques I	S13: Multimedia and Virtual Reality Systems and Services	T4: Interactive Multimedia Networking
11:00-12:30	S7: Internet and IP based Environments and Services II	SS3: Recent Advances in Turbo Coding Techniques II	S14: Integration of Voice and Data Communication	
15:15-16:45	S8: CDMA Systems	S9: Wireless Transmission Systems	S17: Electromagnetic Compatibility	S12: Optical and Photonic Communications
DUBROVNIK, Friday, October 10				
09:00-10:30	S10: Mobile and Wireless Communications I	SS2: UML in Comm. Software Design and Implementation	S18: Source and Channel Coding I	T1: Introduction to WAN Planning and Design
11:00-12:30	S11: Mobile and Wireless Communications II	Invited Talk	S19: Source and Channel Coding II	

Lunch time:every day 13:00-15:00





TIMETABLE B: BUSINESS FORUM

Time / Hall	MLJET	ADRIATIC
SPLIT, Tuesday, October 7		
09:00-11:00	BF1: Workshop on ITS	
11:00-13:30	OPENING CEREMONY *(ADRIATIC)*	
15:15-16:45		BF2: ViPNet's UMTS Trial Network
17:00-17:45		BF3: e-Community (A. Heen)
17:45-18:30		
VENICE, Wednesday, October 8		
09:00-11:00		BF4: e-Government (A. Carić)
		BF1: Workshop on ITS
11:00-12:30		City/County Meetings VENICE - SPLIT
	BF5: COINS	
15:15-16:45		
17:00-18:30		
ANCONA, Thursday, October 9		
09:00-11:00		BF6: Finance Industry Case (M. Pitarević)
		BF7: MPLS Network Management (T. Bogović)
11:00-12:30	BF8: ITS Project MOSCA	City/County Meetings ANCONA - SPLIT
15:15-16:45		
17:00-17:45		
17:45-18:30	BF9: The Brain and Mind Tissue (B. Souček)	
DUBROVNIK, Friday, October 10		
09:00-10:30		BF10: Invited presentation: A.Heen
		BF11: Video Surveillance Systems
11:00-12:30		City/County Meetings DUBROVNIK - SPLIT

Lunch time: every day 13:00-15:00

Architecture for the Delivery and Control of VPN Services
Cristian Lambiri, *Dan Ionescu*, Universtiy of Ottawa, Canada

Routers Timeliness Analysis in Multihop Networks
Leila Boukhalfa, *Serge Midonnet*, ESIGETEL, France; *Laurent George*, Ecole Centrale d'Electronique, France; *Pascale Minet*, INRIA, France

Service composition based on application constraints with a Virtual Market Spaces
Krit Wongrujira, *Marius Portmann*, *Aruna Seneviratne*, University of New South Wales, Australia

VENICE, Wednesday, October 8

Wednesday, October 8, 09:00-10:30, (HVAR)

S4 - NETWORK OPERATIONS AND MANAGEMENT I

Chair: Vjekoslav Sinkovic, University of Zagreb, Croatia

Architecture of RomTMN: Heterogeneous Network Management System
Veaceslav Sidorenco, Technical University of Moldova, Moldova; *Vladimir Ciclicci*, *Sergei Dolenco*, Systemcomputer Ltd. Decebal, Moldova

Applying WBEM to heterogeneous TLC Network Management: an evaluation
Aniello Castiglione, *Luigi Catuogno*, *Umberto Ferraro Petrillo*, *Domenico Parente*, Universita di Salerno, Italy; *Antonio Fresa*, *Raffaele Casella*, *Luigi Auletta*, *Antonio De Gregorio*, Ericsson Lab Italy, Italy

SNMP protocol as base for alarm and data collecting system in telecommunication network management process
Marijan Kunstic, Faculty of Electrical Engineering and Computing, Croatia; *Andraz Oblak*, ICE informacijski sistemi d.o.o., Slovenia; *Oliver Jukic*, ICE systems d.o.o., Croatia

A Novel Controllable Bandwidth Allocation Scheme for Unicast and Multicast Sessions
Tianji Jiang, CISCO Systems, Inc., USA

Intelligent Network FC-Disk based on Autonomic computing
Fu Changdong, *Shu Jiwu*, *Zheng Weimin*, *Shen Meiming*, Tisnghua university, China

Wednesday, October 8, 11:00-12:30, (HVAR)

S5 - NETWORK OPERATIONS AND MANAGEMENT II

Chair: Darko Huljenic, Ericsson Nikola Tesla, Croatia

Multicast Management in Presence of Node/Link Failures
Nader F. Mir, San Jose State University, USA

Towards Standardized Conformance Test Suite for the ISO/EIC Transport Layer Protocol
Hazem El-Gendy, Misr International University, Egypt; *Nabil El Kadhi*, EpiTech, France

New Method for Testing FSM-Based Systems
Hazem El-Gendy, Misr International University, Egypt; *Nabil El Kadhi*, EpiTech, France

The impact of cell loss class priority number on allowable maximum load
Milutin Kapov, *Marija Vrdoljak*, University of Split, Croatia

The Basic Call Control Entities in Heterogeneous Network
Darko Huljenic, *Zvonimir Naglic*, Ericsson Nikola Tesla, Croatia

Comparative performance of various Demand Assignment Multiple Access protocol via satellite
Xi Zhou, *Shilou Jia*, Harbin Institute of Technology, China

ANCONA, Thursday, October 9

Thursday, October 9, 09:00-10:30, (BRAC)

S6: INTERNET AND IP BASED ENVIRONMENTS AND SERVICES I

Chair: Zoran Skocir, University of Zagreb, Croatia

Using the Packet Tetrad to Measure the Bottleneck Bandwidth
Zhao Jin, *Chen Ming*, Institute of Communication Engineering, China

A Platform for a Programmable Proxy Farm
Delfina Malandrino, *Vittorio Scarano*, University of Salerno, Italy

A Tool for e-Business Process Definition
Ivan Matasic, Elektropromet, Croatia; *Damir Pintar*, *Zoran Skocir*, University of Zagreb, Croatia

Fair Per-Flow Multi-Step Scheduler in a New Internet DiffServ Node Architecture
Paolo Dini, *Guido Fraietta*, *Dario Pompili*, University of Rome "La Sapienza", Italy

The Implementation of Service Level Specification Protocol Between VoDServer and Bandwidth Broker
Hyun Joo Kang, *Hee Sung Chae*, *Tae Man Han*, *Yoo Hyeon Jeong*, Electronics and Telecommunicatins Research Institute (ETRI), Korea

Process identification based on linear regression of data measured through the Internet
Jadranka Marasovic, *Maja Cic*, *Miljenko Zuvela*, University of Split, Croatia

Thursday, October 9, 11:00-12:30, (BRAC)

S7 - INTERNET AND IP BASED ENVIRONMENTS AND SERVICES II

Chair: Sebastiano Schillaci, University of L'Aquila, Italy

Adding IPv6 support to H323: Gnomemeeting/openH323 port
Christos Bouras, *Apostolos Gkamas*, *Kostas Stamos*, University of Patras and RACTI, Greece; *Sebastian Josset*, Alcatel Space, France

BIO Revisited
Bahri Okuroglu, *Sema Oktug*, Istanbul Technical University, Turkey

A Queueing Model for Steady-State Behaviour of TCP in Performance Evaluation of Telecommunication Networks
Deepak Agrawal, *Fabrizio Granelli*, University of Trento, Italy

Timeout Avoidance Mechanism for TCP/IP based HF Communications
Sebastiano Schillaci, *Fabio Graziosi*, University of L'Aquila, Italy; *Antonio Cerasa*, *Rossano Marchesani*, Thales Communications SpA, Italy

MPLS based routing protocol for HF radio networks

Serenella Ferri De Collibus, *Ennio Gambi*, Universita Politecnica delle Marche, Italy; *Antonio Cerasa*, *Rossano Marchesani*, Thales Communications SpA, Italy; *Sebastiano Schillaci*, University of L'Aquila, Italy

Innovative Fragmentation Avoidance Techniques to Improve TCP Performance over Mobile IPv6
A. Dev Pramil, *Stephane Antonie*, *A. H. Aghvami*, University of London, United Kingdom

Web indexing and search with local language support
Damir Krstinic, *Ivan Slapnicar*, University of Split, Croatia

Thursday, October 9, 15:15-16:45, (BRAC)

S8 - CDMA SYSTEMS

Chair: Sandor Imre, Budapest University of Technology and Economics, Hungary

Application of Space-time Block Codes to MC-CDMA Systems
Zhihua Hou, Nanyang Technological University, Singapore

A new transmit diversity scheme for MC-CDMA system
Zhihua Hou, V. K. Dubey, Nanyang Technological University, Singapore

Performance of User Measurement Compressed Mode in WCDMA
Sun-myeng Kim, *Jung-ho Lee*, *Jae-sung Lim*, *Young-jong Cho*, Ajou University, Korea

Novel Channel Quality Indicator Prediction Algorithms for cdma2000 1x EV-DV
Chen Zeqiang, *Yang Dacheng*, Beijing University of Posts and Telecommunications, China

A Robust Adaptive Blind Multiuser Detection for DS/CDMA Based on Combined Inverse QRD-RLS Algorithm and MOE
Ayman Elnashar, MobiNil, Egypt; *Said Elnoubi*, Alexandria Univerisity, Egypt; ; *Hamdi Elmikati*, Mansoura University, Egypt

Efficiency Validation of 3G/4G WCDMA Air Interface Call Admission Control in OMNeT++ Environment
Sandor Imre, Budapest Universuty of Technology and Economics, Hungary; *Peter Petras*, BUTE Dept. of Telecom., Hungary; *Robert Tancsics*, BUTE, Hungary

Quasi-Optimum Power Control Schemes for Downlink in W-CDMA Cellular System
Bazil Taha Ahmed, *Miguel Calvo Ramon*, *Leandro de Haro Ariet*, Universidad Politecnica de Madrid, Spain

Thursday, October 9, 15:15-16:45, (HVAR)

S9 - WIRELESS TRANSMISSION SYSTEMS

Chair: *Chang-Jun Ahn, Communication Research Laboratory, Japan*

Impact of the physical layer on the performance of indoor wireless networks
Jean-Michel Dricot, *Philippe De Doncker*, *Esteban Zimanyi*, *Francis Grenez*, Universita Libre de Bruxelles, Belgium

Radio Channel Characteristics for Mobile-to-Mobile and Base-to-Base Links
Toplica Pacic, *Gerald Ostermayer*, Siemens AG Austria, Austria

Performance Improvement of an OFDM Using Unitary Matrix Modulation with Splitting over the Coherence Bandwidth in Single Antenna System
Chang-Jun Ahn, Communication Research Laboratory, Japan; *Iwao Sasase*, Keio University, Japan

Characterization of Indoor Penetration Loss at ISM Band
Y. E. Mohammed, *A. S. Abdallah*, *Y. A. Liu*, Beijing University of Posts and Telecommunications, China

Study of Multi-Band Property of Rectangular Microstrip Patch Antenna With Different Number of Wide Slots
Y. E. Mohammed, *A. S. Abdallah*, *Y. A. Liu*, Beijing University of Posts and Telecommunications, China

Efficient OFDM systems based on time domain equalization in Rician channel
Wei Zhang, *Yan Du*, *Pengcheng Zhu*, *Peng Liu*, Shandong University, China

Comparison of Coded OFDM with Different Orthogonal Base
Haixia Zhang, *Mingyan Jiang*, *Dalei Wu*, Shandong University, China; *Dongfeng Yuan*, Shandong University, Southeast University, China

Study and proposal of the Underwater Acoustic Local Area Networks
Ahcene Bouzoualegh, *Thierry Val*, *Fabrice Peyrard*, *Eric Campo*, University Institute of Technology, France

DUBROVNIK, Friday, October 10

Friday, October 10, 09:00-10:30, (HVAR)

S10 - MOBILE AND WIRELESS COMMUNICATIONS I

Chair: Paolo Dini, University of Rome "La Sapienza", Italy

Building a Virtual Device on Personal Area Network
Tore E. Jonvik, University of Oslo, Norway; *Paal Engelstad*, *Do van Thanh*, Telenor R&D, Norway

A Clustering Algorithm with Mobile Backbone for Heterogeneous Ad Hoc Networks
Lingzhi Sheng, *Weiming Cheng*, *Zhimei Wu*, Multimedia Communication & Network Engineering Research Center, China

Analysis of the transmission window for the delay performance of the High Speed Downlink Packet Access protocol
Gregory Manuel, *Mika Rinne*, Nokia Research Center, Finland

Performance Analysis and Evaluation of Call Admission Control Strategies over a UMTS Traffic Emulator for an Urban Environment
Paolo Dini, *Silvio Russo*, *Barbara Alessandrini*, University of Rome "La Sapienza", Italy

Comparison of Interference Based Dynamic Channel Allocation Algorithms in Mobile Networks
Mugdim Bublin, *Gerald Ostermayer*, Siemens AG Austria, Austria

Simulation-based Performance Evaluation of Stationary Nodes in AODV Routing Protocol for Mobile Ad Hoc Networks
Haeryong Lee, *Jaewook Shin*, *Jeehyeon Na*, *Yoohyun Jeong*, ETRI, Korea; *Sangha Kim*, Chungnam National University, Korea

Clipping Method of Multi-Level System
M. C. Ju, *K. H. Park*, *K. J. Youn*, *H. S. Lee*, *Y. J. Won*, *S. D. Jeon*, Korea Electronics Technology Institute (KETI), Korea

Friday, October 10, 11:00-12:30, (HVAR)

S11 - MOBILE AND WIRELESS COMMUNICATIONS II

Chair: Darko Huljenic, Ericsson Nikola Tesla, Croatia

Down-Link Analysis of (FDSS-GSM) and (FDSS-AMPS) Overlay System
Bazil Taha Ahmed, *Miguel Calvo Ramon*, *Leandro de Haro Ariet*, Universidad Politecnica de Madrid, Spain

Provisioning and content adaptation of mobile data services
Ivan Skender, *Davor Saric*, HT Mobile Communications LLC, Croatia

Telecommunications Synergies - UMTS and Data Warehousing
Sinisa Papp, Siemens GmbH, Germany; *Marko Ferisak*, O2 GmbH & CO, Germany; *Mladen Tkalic*, University of Zagreb, Croatia

Scheduling Policies for Achieving General Fairness Criteria in Wireless Networks
Vagelis Tsibonis, *Leonidas Georgiadis*, Aristotle University of Thessaloniki, Greece

Towards Agent-based QoS Management in 4G Mobile Networks
Krunoslav Trzec, *Darko Huljenic*, Ericsson Nikola Tesla, Croatia

Traffic Models for Terminal Reconfiguration in all-IP Cellular Networks
Oliver Holland, *Robert Rummler*, *Hamid Aghvami*, King's College London, United Kingdom

Bluetooth Wireless Technology in Remote Control Applications
A. Restovic, *I. Stojan*, Ericsson Nikola Tesla d.d., Croatia; *D. Begusic*, University of Split, Croatia

Use of GSM Technology in Positioning a Vehicle on a Motorway
Zoran Civadelic, *Ivica Cubic*, Ericsson Nikola Tesla d.d., Croatia; *Nikola Rozic*, University of Split, Croatia

ANCONA, Thursday, October 9

Thursday, October 9, 15:15-16:45, (KORCULA)

S12 - OPTICAL AND PHOTONIC COMMUNICATIONS

Chair: Mario Baldi, Torino Polytechnic, Italy

Dynamic Optical Switching: The Network is the Memory
Mario Baldi, Torino Polytechnic, Italy; *Yoram Ofek*, Synchrodyne Networks, Inc., USA

Efficient Message Scheduling for WDM Optical Networks with Minimizing Flow Time
Maode Ma, *Xiaohong Huang*, Nanyang Technological University, Singapore

Wavelength Selection Analysis for Free-Space Optics Communications
Ernest Wendling, University of Zagreb, Croatia

Analysis of Burst Acknowledgment Mechanism of IEEE 802.11e MAC Protocol over Infrared Wireless LANs
Evagelos Varthis, *Pavlos Theodorou*, University of The Aegean, Greece; *Anthony C. Boucouvalas*, Bournemouth University, UK

Implication and Application of the APML Boundary Condition for MRTD Method in Simulation of Planar Waveguide
YiFeng Guo, *Fanmin Kong*, *Kang Li*, Shandong University, China

Quality of Service support in all-optical wavelength routed networks
Francesco Palmieri, University "Federico II" - Napoli, Italy

Thursday, October 9, 09:00-10:30, (VIS)

S13 - MULTIMEDIA AND VIRTUAL REALITY SYSTEMS AND SERVICES

Chair: Branka Zovko Cihlar, University of Zagreb, Croatia

Directorial Planning Engine for Automatic Cinematography
Seiya Miyazaki, *Jinhong Shen*, *Terumasa Aoki*, *Hiroshi Yasuda*,University of Tokyo, Japan; *Takafumi Yuki*, *Mitsuru Kaneko*, Tokyo University of Technology, Japan

MIRACLE: A study on Digital Mirror System and its Application of T-shirt Clothing
Akinori Taguchi, *Terumasa Aoki*, *Hiroshi Yasuda*, The University of Tokyo, Japan

Using a Virtual Human as Web Guide
Goranka Zoric, *Igor S. Pandzic*, University of Zagreb, Croatia
An Adaptive Video Coding System Over Wireless Channel
J. *Wei*, *Z. G. Li*, *B. H. Soong*, Nanyang Technological University, Singapore

Providing Multiple Video Digest for On-Demand Video Delivery Systems
Chih-Chang Hsu, *Terumasa Aoki*, *Hiroshi Yasuda*, The University of Tokyo, Japan

A Java Based Adaptable Multimedia Application (M2A)
Wing Shun Wong, *Paul Pangalos*, *Hamid Aghvami*, Kings College London, United Kingdom

A MPEG-7 Contour-based Analysis/Retrieval System for Fish Images
Jin-Hau Kuo, *Ja-Ling Wu*, National Taiwan University, Taiwan, Republic of China

Multiple States Transcoding Proxy for Wireless Video Streaming
Jun Wei, *B. H. Soong*, Nanyang Technological University, Singapore

Step Function Broadcasting Scheme for Videos
Satish Chand, Netaji Subhas Institute of Technology, India; *Hari Om*, Jawaharlal Nehru University, India

Thursday, October 9, 11:00-12:30, (VIS)

S14 - INTEGRATION OF VOICE AND DATA COMMUNICATION

Chair: Jana Kleckova, University of West Bohemia in Pilsen, Czech Republic

Novel Communication Concepts for Municipal Information Services
K. Ekstein, *J. Kleckova*, *J. Krutisova*, *V. Matousek*, *R. Moucek*, *K. Tauser*, University of West Bohemia in Pilsen, Czech Republic; *J. Kubista*, Technical University of Dresden, Germany; *L. Hitzenberger*, University of Regensburg, Germany

Enabling User Service Control on Unified Messaging Systems
Constantina Sakka, *Mary Grammatikou*, *Dimitris Kalogeras*, *Vasilis Maglaris*, National Technical University of Athens, Greece

Integration of TCP/IP Based 802 Networks into SCADA Systems
Jose I. Escudero, *Juan A. Rodriguez*, *M. Carmen Romero*, University of Seville, Spain

Delay impacts on echo cancellation in circuit and packet switched networks
Mario Ivcek, Ericsson Nikola Tesla, Croatia

VOIP over Ethernet - Theoretical Analysis and Simulation
Anton Kos, *Saso Tomazic*, University of Ljubljana, Slovenia

Packet header compression formal notation requirements
Julije Ozegovic, OPAL COMPUTING d.o.o., Croatia

VENICE, Wednesday, October 8

Wednesday, October 8, 11:00-12:30, (BRAC)

S15 - INFORMATION INFRASTRUCTURE AND SECURITY

Chair: Roberto Caldelli, University of Florence, Italy

Proposal of the E-Government Systems Architecture (Invited paper)
Antun Caric, Ericsson Nikola Tesla d.d., Croatia

E-Payment Frameworks and Security
Vesna Hassler, A-SIT Secure Information Technology Centre - Austria, Austria

An infrastructure for MPEG-4 video fruition based on digital watermarking and smart cards
Roberto Caldelli, *Franco Bartolini*, *Vito Cappellini*, University of Florence, Italy

Model Driven Approach for Building the Enterprise Information System
Darije Ramljak, IBM Croatia Ltd., Croatia; *Juraj Puksec*, Croatia Control Ltd., Croatia; *Darko Huljenic*, *Miroslav Koncar*, Ericsson Nikola Tesla d.d., Croatia; *Daniel Simic*, Emory University, USA

Applying Challenge-Response Authentication over Bluetooth for Web Services
Pekka Jappinen, *Jari Porras*, Lappeenranta University of Technology, Finland

A Game Based Analysis of the Client Puzzle Approach to Defend Against DoS Attacks
Boldizsar Bencsath, *Istvan Vajda*, *Levente Buttyan*, Budapest University of Technology and Economics, Hungary

Secure Replication Limiting Passive and Active Attacks
Mahery Andriambololona, *Michael Hervieux*, *Thomas Meurisse*, ENSEIRB, France; *Mathieu Blanc*, LIFO/ENSI, CEA DAM, France; *Christian Toinard*, LIFO/ ENSI, France

SPLIT, Tuesday, October 7

Tuesday, October 7, 09:00-11:00, (HVAR)

S16 - SIGNAL PROCESSING IN COMMUNICATION SYSTEMS

Chair: Vaclav Dvorak, University of Technology Brno, Czech Republic

Channel equalization with Decision Feedback Support Vector Machines in the GSM Environment
Adina Burian, *Arto Kantsila*, *Markku Renfors*, Tampere University of Technology, Finland

Communication Architectures for Application-Specific Multiprocessor Systems (on a Chip)
Vaclav Dvorak, University of Technology Brno, Czech Republic

Implementation of a voice activity detection algoritm for G.728 coded signals
Fabio Biondi, *Franco Chiaraluce*, *Ennio Gambi*, *Alessandra Filippi*, Universita Politecnica delle Marche, Italy; *Paolo Mariani*, AETHRA s.r.l., Italy

A Wavelet Based Speckle Noise Filtering in a Laser Scanner
Dariusz Madej, Symbol Technologies, USA

The Parameter Design of Coded OFDM Systems in Mobile Fading Channels
Dalei Wu, *Mingyan Jiang*, *Haixia Zhang*, Shandong University, China; *Dongfeng Yuan*, Shandong University, Southeast University, China

An Authentication Procedure of BICC based Softswitch in IP Telephony
Yongju Yi, *Young-Il Choi*, *Byung-Sun Lee*, ETRI, Korea

Speckle noise and edge localization error
Sasa Kresic-Juric, University of Split, Croatia

ANCONA, Thursday, October 9

Thursday, October 9, 15:15-16:45, (VIS)

S17 - ELECTROMAGNETIC COMPATIBILITY

Chair: Vesna Roje, University of Split, Croatia

A Simplified Analysis of Human Exposure to Base Station Antennas radiation
Dragan Poljak, University of Split, Croatia

Analysis of the Dynamic Characteristics of Grounding Electrodes Using the Finite Element Technique
Rino Lucic, *Mate Kurtovic*, *Slavko Vujevic*, University of Split, Croatia

Time domain calculation of the scattering on a thin wire antenna array
S.Antonijevic, *D.Poljak*, *V.Roje*, University of Split, Croatia

The Near Field Calculation of the Yagi-Uda Antenna
Vicko Doric, *Dragan Poljak*, *Vesna Roje*, University of Split, Croatia

DUBROVNIK, Friday, October 10

Friday, October 10, 09:00-10:30, (VIS)

S18 - SOURCE AND CHANNEL CODING I

Chair: Susanna Spinsante, University of Ancona, Italy

Binary even-weight codes for error correction
Tor Hellseth, *Torleiv Klove*, University of Bergen, Norway; *Vladimir Levenshtein*, Keldysh Inst. for Applied Math, Russia

A Generic Algorithm for Constructing Reversible Variable Length Codes with Limited Maximum Codeword Length
Chia-Wei Lin, *Yuh-Jue Chuang*, *Ja-Ling Wu*, National Taiwan University, Taiwan, Republic of China

Direct Splitting and Merging of 2-D DCT in the DCT Domain
Yuh-Jue Chuang, *Ja-Ling Wu* , National Taiwan University, Taiwan, Republic of China

Chaotic Encryption of H263+ Video Signals
Susanna Spinsante, *Paola Pierleoni*, Universita Politecnica delle Marche, Italy; *Lorenzo Ciccarelli*, *Maurizio Reginelli*, AETHRA s.r.l., Italy

Performances improvement of DS-CDMA mobile telephone system-based Turbo-Code encoding system
Pattarapong Phasukkit, *Sukuma Muisee*, *Somyos Junnapiya*, King Mongkut's Institute of Technology Ladkrabang, Thailand

Friday, October 10, 09:00-10:30, (VIS)

S19 - SOURCE AND CHANNEL CODING II

Chair: Michele Angelaccio, University of Rome Torvergata, Italy

Effect of CRC Code in HARQ Scheme with Turbo Code
Wootae Kim, *Sanghoon Lee*, Kyungpook National University, Korea; *Su Youl Na*, *Eon Kyeong Joo*, Samsung Electronics Co., Korea

Quantum Computing Based Feedback Channel Coding for Medium Access Control
Sandor Imre, Budapest University of Technology and Economics, Hungary

Prototype of an Adaptive Voice Coder for IP Telephony
Anton Luca Robustelli, *Salvatore Loreto*, *Antonio Fresa*, Co.Ri.TeL, Italy; *Maurizio Longo*, *Domenico Spinelli*, University of Salerno, Italy

Intranet Searching in a Wireless Indoor Environment
M. Angelaccio, *B. Buttarazzi*, *R. Giuliano*, *G. Guidoni*, University of Rome Torvergata, Italy

Turbo coding in PCM systems
Josko Radic, University of Split, Croatia

SoftCOM 2003 Professional Program

SoftCOM 2003, October 07-10, 2003
Split, Dubrovnik (Croatia)
Venice, Ancona (Italy)

WORKSHOP ON CONTEMPORARY COMMUNICATIONS

SPLIT, Tuesday, October 7

Tuesday, October 7, 09:00-11:00, (VIS)

WSCC - WORKSHOP ON CONTEMPORARY COMMUNICATIONS I

Chair:Marija Vrdoljak, University of Split, Croatia

2G/3G Mobile VPN – technology and solution
Miroslav Jaković, Siemens d.d., Croatia; *Denko Godec*, HT mobilne komunikacije d.o.o., Croatia

Performance Analysis of Web Server
A. Jazbec, *I. Lebar Bajec*, *N. Zimic*, University of Ljubljana, Slovenia

Split-Video Multicast Protocol using Packet Pair Mechanism
Simon C. Brennan, *Naveen Chilamkurti*, *Ben Soh*, La Trobe University, Australia

Use of formal method in design of BICC stack prototype
Robert Radosevic, Mladen Vulovic, Ericsson Nikola Tesla d.d., Croatia

Wireless LAN Management
Hrvoje Tkalcic, Croatia Airlines Ltd, Croatia

SIP: Session Initiation Protocol
Robert Loncar, Ericsson Nikola Tesla, Croatia

The Effect of Path Loss on The Performance of The Uplink of Highways W-CDMA Cigar-shaped Microcells
Bazil Taha Ahmed, *Miguel Calvo Ramon*, *Leandro de Haro Ariet*, Universidad Politecnica de Madrid, Spain

Interoperability of UMTS with existing GSM networks
Puneet Gupta, SETLabs, India

IPv6 Domain Name Auto-configuration for Home Network Managements
T. G. Tsuei, Ta Hwa Institute of Technology, Taiwan, ROC; *Chia-Chang Hsu*, *Han-Chieh Chao*, National Dong Hwa University, Taiwan, ROC

Implementation of a Voice-enabled Residential Gateway
Dimitris Economou, *Antony Tavoularis*, *George Konstantoulakis*, inAccess Networks, Greece; *Michalis Manousos*, *John Karras*, National Technical University of Athens, Greece

Triple-Band and Bandwidth Enhancement Techniques for Different Shapes of Microstrip Single-Patch Single-Layer Antenna
A. S. Abdallah, *Y. E. Mohammed, Y. A. Liu*, Beijing University of Posts and Telecommunications, China

Parallel joint-decision decoding for turbo codes
Jianping Li, *Qinglin Liang*, Peking University, China; *Emily.H.Qi*, Intel Corporation, USA

Tuesday, October 7, 17:00-18:00, (VIS)

WSCC - WORKSHOP ON CONTEMPORARY COMMUNICATIONS II

Chair:Milutin Kapov, University of Split, Croatia

Signaling Concept of Mobile Network over IP
Drazen Glas, *Domagoj Grilec*, *Vedran Pavlovic*, Ericsson Nikola Tesla, Croatia

Systematic Image and Human Arrangement for Gaze Communication in Multiparty Videoconference System
Thitiporn Lertrusdachakul, *Akinori Taguchi*, *Terumasa Aoki*, *Hiroshi Yasuda*, The University of Tokyo, Japan

Usage of MPLS VPN Infrastructure for Integration of Voice and Data Services for Business Customers
Ivica Gasparic, *Mario Golubic*, *Boris Kleoncic*, Croatian Telecom Inc., Croatia

Application of VoiceXML Technology
Danijela Oreb, *Ivo Stojan*, Ericsson Nikola Tesla d.d., Croatia; *Hrvoje Dujmic*, University of Split, Croatia

Transmission of video signal over ADSL based on multicast service
Dario Katava, *Mario Ravnjak*, *Tomislav Markovic*, Croatian Telecom, Croatia

Internet Snooping: Beyond Security and Privacy
Joseph Bih, Jarvis Christian College, USA

Grooming and Degrooming with Coordinated Universal Time (UTC)
Mario Baldi, Torino Polytechnic, Italy; *Yoram Ofek*, Synchrodyne Networks, Inc., USA

Mechanism of Short Message Inter-Carrier Exchange in Mobile Number Portability Environment
Hongman Wang, *Junyi Liu*, *Fangchun Yang*, Beijing University of Posts and Telecommunications, China

Handoff Drop Probability of Mobile IP
Janet He, Intel China Research Center, China

Enhancement of fingerprint image - A fuzzy approach
Vijayaprasad P., *Ashraf Gasim Elsid*, Multimedia University, Malaysia; *M. Hanmandlu*, Indian Institute of Technology, India

Tuesday, October 7, 17:00-18:30, (VIS)

WSCC - WORKSHOP ON CONTEMPORARY COMMUNICATIONS II

Chair: Milutin Kapov, University of Split, Croatia

Market Development Process
Vinko Cipcic, *Robert Loncar*, Ericsson Nikola Tesla d.d., Croatia; *Dinko Begusic*, University of Split, Croatia

WCDMA Radio Access Networks Based on AAL2 Switching
Robert Loncar, *Vinko Cipcic*, Ericsson Nikola Tesla d.d., Croatia; *Dinko Begusic*, University of Split, Croatia

Multimedia Messaging Service
Denis Duka, Ericsson Nikola Tesla d.d., Croatia

Layered Network Architecture
Denis Duka, Ericsson Nikola Tesla d.d., Croatia

IP-v6 Showcase, Introducing IPv6 into practice
Gerrit Kalkbrenner, *Andreas Liebert, Daniel Kunow,* University Potsdam, Germany

The DSP Realization of Golay code in An Adaptive system
Bo Wei, *Jian Guo Deng*, Xi'an Jiaotong University of China, China

County Spatial Database of Split-Dalmatia Institute of spatial planning
Marjan Sikora, ENTER d.o.o., Croatia; *Mice Gamulin*, Institute of Spatial Planning, Croatia

Storing of multimedia files in XML file using Base64 Encoding
Milivoj Fradelic, FINA – Financial Agency Split, Croatia

Inverse Multiplexing with ATM
Robert Radosevic, Mladen Vulovic, Ericsson Nikola Tesla d.d., Croatia

BUSINESS FORUM

SoftCOM 2003, October 7-10, 2003
Split, Dubrovnik (Croatia)
Venice, Ancona (Italy)

INVITED SPEAKERS

VENICE, Wednesday, October 8, 9:00-09:30, (ADRIATIC)

E-GOVERNMENT SYSTEMS ARCHITECTURE PROPOSAL

Antun Carić, Kate – Research and development Zagreb, CROATIA

Abstract: The paper deals with the architecture of e-government systems. Main objective of e-government systems have been described, as well as architecture of both, the next generation network and the e-government system. E-government system architecture is seen as a logical extension of layered network architecture and as a system of systems with services in focus. All layers have been briefly analyzed. Main recommendations have been proposed with the aim to open discussion and support agreement on the state level.

Biography: Antun Carić**:** Recved his B.S., M.S., and Ph. from the University of Zagreb. He is an assistent profesor at the university in the Faculty of Electrical Engineering and Computer Science. Currently he is director of Kate – Research and development Zagreb. His fields of interest include research and development, software design, network signaling and control, open systems, and new network services and applications.

VENICE, Wednesday, October 8, 9:30-10:00, (ADRIATIC)

"CROATIA IN THE 21st CENTURY" EXPERIENCES IN CREATION OF STRATEGY OF DEVELOPMENT OF THE REPUBLIC OF CROATIA

Antun Carić, Strategic planning office of the Government of the Republic of Croatia

Abstract*:* The paper contains experiences of the work during the creation of the strategy of development of the Republic of Croatia. Applied process and methodology are described, with the purpose of possible improvements that should be made in the future. Available data are presented and analyzed, and the achieved results are compared with objectives defined. Experiences are explained, missing procedures are mentioned and recommendations for future work on strategies of development are presented.

VENICE, Wednesday, October 8, 10:30-11:00, (ADRIATIC)

POLICY BASED NETWORK MANAGEMENT FOR MPLS NETWORKS

Tony Bogovic, Executive Director of Telcordia Technologies, USA

Abstract: Provisioning services such as MPLS VPNs and MPLS traffic engineering requires configuration of many devices in the network for edge-to-edge services to work. Provisioning these services manually or without proper tools is labor intensive and prone to errors. Policy based network management is an attractive and powerful approach to performing automated network functions, that can be applied to diverse networking domains, e.g. configuration, quality of service, and traffic engineering. It allows description of services at a high level (i.e., specifying 'what' rather than 'how'), which are then automatically translated into detailed device configurations and applied to the network.
This presentation focuses on applying policy based networking to manage DiffServ-enabled IP/MPLS networks. In particular, it will cover a novel architecture for enabling Policy Based Management, and its application to managing Quality of Service and provide traffic engineering and restoration capabilities

Biography: Tony Bogovic is the Executive Director of the Internet and Wireless Network Management Research department at Telcordia Technologies in Morristown, NJ. He is currently leading a significant research effort focused on providing network management solutions for IP-based networks. Tony has actively participated in the IETF and MPLS Forum, where he was a former board member, co-authoring several standards-track IP/MPLS-related documents. He has presented invited talks and organized and lead panels in industry conferences as well as academia on related subject matter. His written material has appeared in recognized industry fora, including a special edition journal. He has been with Telcordia since 1985 conducting research largely in IP network architectures, network/service management, and broadband switching. Tony received his M.S.E.E degree from Columbia University in 1991.

ANCONA, Thursday, October 9, 11:00-12:30, (MLJET)

THE MOSCA PROJECT: A NEW LOGISTICS APPROACH FOR A SUSTAINABLE URBAN

Paola Cossu, FIT Consulting srl, ITALY

Abstract: The MOSCA project – co-funded by the European Commission IST – aims at finding new ways of supporting transport planning and management in cities and agglomerations. MOSCA stands for: Decision Support System for Integrated Door–to- Door Delivery: Planning and Control in Logistic Chains. Common planning tools are improved by modules which allow overcoming the lack of integration of business traffic and freight transport in existing tools and which consider the changing needs of the users of the urban infrastructure networks. Synergy, sharing technologies and services among stakeholders (i.e. administrations and operators) are the key words consolidating the MOSCA approach. The MOSCA project proposes a collaborative approach model, which involves both city administrations and freight logistics operators. MOSCA main challenge is an improvement of the complex situation of business traffic and freight transport in European metropolitan areas and as a consequence an improvement of the negative impacts for the environment and the citizens. Starting points are booking and reservation procedures for loading/unloading areas, vehicle routing as well as transport modelling.

ANCONA, Thursday, October 9, 17:30-18:30, (MLJET)

THE BRAIN AND MIND TISSUE ,NETWORK AND LEAP

Branko Souček, IRIS, ITALY

Abstract: The Brain LEAP is the biggest event since the Big Bang. Already from 2004 to 2010 the Brain Leap will start changing the science, technologies, business, life, countries and world. The Brain and Mind TISS, the BMnets and the Brain LEAP share the same newly discovered brain laws. Brain laws are the new, crucial, common principles for the brain, computers, business and society. Brain laws open the door to the winner decision making and to the leadership positions: for individuals, universities, companies and countries.

Biography: Branko Souček, Proffesor of Universitets of Zagreb, New York and Arizona. Researcher and consultant for the United Nation Agencies UNIDO, IAEA, NASA, IBM, Siemens, Schering, Brookhaven National Laboratory and QDI. Prof. Souček has published 10 books Wiley, New York. His books have been translated into the Croatian, Russian and Japanese languages.

WORKSHOP ON INTELLIGENT TRANSPORTATION SYSTEMS

SPLIT, Tuesday, October 7, 09:00-11:00, (MLJET)

Chair: Slavko Roguljić, Airport Split-Kaštela, Croatia

Croatian Highways Communication Network
Mario Buljević, Silvio Čamber, HAC, Croatia

Air Traffic Safety and Safety and Security – Aircraft and Passengoer Handling Process at Split Airport
Slavko Roguljić, Airport Split-Kaštela, Croatia

ICT Infrastructure
Hristo Sikovičev, Director of Plans and Investments, Croatia

Reengineering of Business Processes and Adaptation of IT Capabilities
Zvonimir Stanić, Director of Croatian Railway Informatics, Croatia

Rene Valčić, Deputy President of the Management Board, Croatian Railway, Croatia
Dražen Ratković, Member of the Management Board, Croatian Railway, Croatia

BUSINESS PRESENTATIONS

SoftCOM 2003, October 7-10, 2003
Split, Dubrovnik (Croatia)
Venice, Ancona (Italy)

SPLIT, Tuesday, October 7, 15:15-16:15, (ADRIATIC)

VIPnet's UMTS Trial Network
Toni Puljak, BSS VIPnet Manager, VIPnet, Croatia

ANCONA, Thursday, October 9, 09:15-09:45, (ADRIATIC)

Customers, Cyberspace and Privacy - Finance Industry Case
Miho Pitarevic, Ministry of Maritime Affaires, Transport and Communications, Croatia

ANCONA, Thursday, October 9, 12:00-12:30, (ADRIATIC)

DUBROVNIK, Friday, October 10, 09:45-10:30, (ADRIATIC)

IP Video Technology Today and Tomorrow
Patric Sekić, COINS d.o.o., Croatia; Siniša Babić, I.I.T. d.o.o., Croatia

SPLIT, Tuesday, October 7, 17:00-17:45, (ADRIATIC)

DUBROVNIK, Friday, October 10, 09:00-09:45, (ADRIATIC)

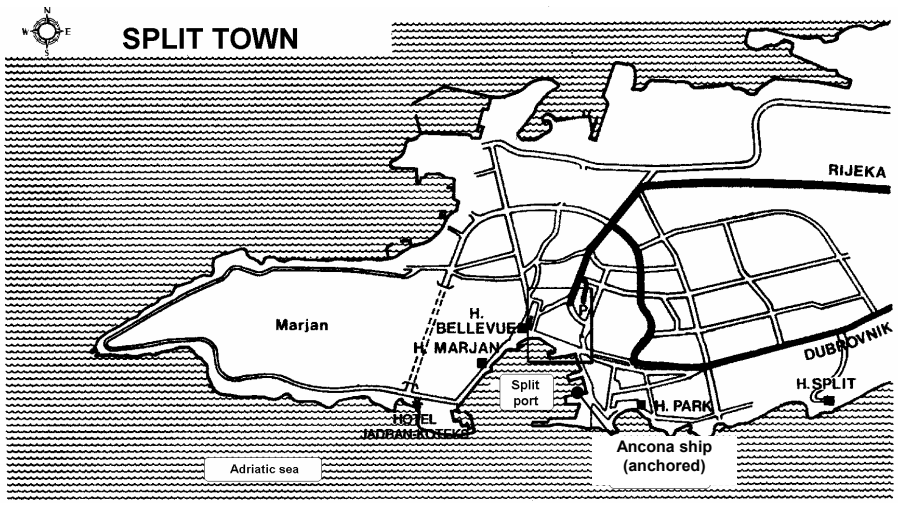
E-Community: some examples and experiences from Norway
Arne Heen, Heen, Croatia

SoftCOM 2003 CITIES MEETINGS

SoftCOM 2003, October 7-10, 2003
Split, Dubrovnik (Croatia)
Venice, Ancona (Italy)

Being held aboard the cruising ship the SoftCOM'03 manifestations bring together the coasts of the Adriatic sea. The cruising ship “Ancona” during the jubilee SoftCOM journey will visit the most attractive cities along the Croatian and Italian Adriatic coastline: Split, Venice, Ancona, Dubrovnik thus providing the unique opportunity for meetings of the representatives of these cities. In each town the protocolar meetings of official county, city, university and business representatives will be organised. Besides that the public presentations will be held aboard the ship followed by together parties and buffets.

GENERAL INFORMATION



LOCATION

SoftCOM 2003 and all related events (Tutorials, Workshops, Business Forum, Exhibitions) will be held aboard the cruising ship "Ancona". The ship will stay for one day in Split (October 7), in Venice (October 8), in Ancona (October 9), and in Dubrovnik (October 10). The ship will sail between the above-mentioned cities overnight. Return to Split is scheduled for October 11 in the morning.

The ship "Ancona" will be available for accommodation in Split from October 6 in the early afternoon.

HOW TO GET TO SPLIT

by air: Split can be reached directly or via Zagreb from all world airports. Split airport is only 20 minutes by bus.

by ship: Split harbor is daily connected with Rijeka (Croatia) and Ancona (Italy).

WEATHER

In October the weather in Split is very nice, with an average temperature of about 20 degrees Celsius and the sea temperature is agreeable for swimming.

LANGUAGE

The Conference language is English.

PROCEEDINGS

All participants will receive the Final Program and Proceedings when registering at the conference desk.

REGISTRATION AND RECEPTION

Each day of the Conference from 08:00 till 16:00

SECRETARY

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