

Curriculum Vitae

Mr. GERGELY VID ZÁRUBA, Ph.D.

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Research/Work Experience:

- Assistant Professor** **The University of Texas at Arlington**, September 2001 –
- Joined the faculty of the Department of Computer Science and Engineering (CSE@UTA).
 - Member of the Assist Laboratory
 - Member of the Center for Research in Wireless Mobility and Networking (CReWMaN).
 - Developed course on Optical Networking.
 - Supervised many M.S. and Ph.D. students as well as participated in many student defense committees.
- Research Assistant** **The University of Texas at Dallas**, November 1998 – May 2001
- Doctoral Research in link activation techniques, adaptive medium access control protocols, hybrid medium access protocols for mobile ad hoc networks, Bluetooth scatternet formation issues, and admission control in cellular networks with call degradation.
 - Member of the Center for Advanced Telecommunication Systems and Services (CATSS).
 - Developed and programmed an extensive discrete-event network emulator (C++/Linux).
 - Programmed optical simulator for evaluation of wavelength switching techniques.
 - Published papers in various refereed conferences/journals, and also served as a reviewer for various international conferences/journals.
 - Administered Linux and Windows NT computers in CATSS.
 - Developed ideas on converting existing simulations into the Opnet package.
- Research Assistant** **Technical University of Budapest**, Hungary, September 1995 – November 1998
- Doctoral and Masters Research in special signaling systems for distributed multimedia services over ATM networks.
 - Member of Hungary's leading academic research laboratory, the High Speed Networks Laboratory (HSNLab).
 - Served as liaison between HSNLab and Telia Research A.B., Sweden.
 - Supervised graduate students involved in HSNLab projects.
 - Teaching assistant for databases laboratory (graduate course).
 - Published Papers in various refereed conferences.
 - Administered SUN workstations.

Guest Researcher **Telia Research A.B.**, Stockholm, Sweden, February 1997 - July 1997

- Participated in a joint R&D effort with Telia Research and HSNLab.
- Designed/implemented a multimedia signaling protocol and corresponding applications for ATM enabled SUN workstations.

Intern **Ericsson Austria A.G.**, Vienna, Austria, February 1996 - July 1996

- Designed, prototyped, programmed and tested a micro-controller based management card for a new PBX product communicating via an I²C bus.
- Repaired electronic test equipment.

Lecturer **Gábor Dénes Technical College**, Budapest, Hungary, fall 1995, fall 1996

- Held basic and advanced computer lab classes on UNIX (Linux) operating system principles.

Education:

Ph.D. **University of Texas at Dallas**, May 2001

- Ph.D. in **Computer Science**, doctoral advisor: Dr. Imrich Chlamtac (Fellow IEEE, Fellow ACM, Distinguished Chair in Telecommunications)
- Attended UTD between August 1999 and May 2001.
- Research in link activation for mobile radio networks.
- Ph.D. studies at the Technical University of Budapest, August 1997 – August 1999.
- Graduate coursework included: advanced radio networks, multimedia communications, and telecommunication protocols.

Masters **Technical University of Budapest**, Hungary, June 1997

- Masters in **Computer Engineering** (Technical Informatics)
- Attended school between August 1992 and June 1997.
- Completed defense at the Department of Telecommunications and Telematics
- Emphasis on Business Telecommunications and Multimedia.
- Graduate studies at the Technical University of Vienna, Austria, February 1996 – July 1996.
- Graduate coursework included: telecommunication networks, telecommunication protocols, multimedia enabled networks, optical networks (FDDI, ATM), radio communications, control theory, voice recognition, voice and video compression, information theory, operating systems, data bases, object oriented programming, hypermedia.

Telecomm. Technician **Pataki István Technical High School**, Budapest, Hungary, September 1988 - May 1992

- Honors student
- Attended High School in Frankfurt a.M., Germany, fall 1986 – fall 1988

Theses:

- Ph.D. – Link Activation Methods in Advanced Mobile Radio Networks
- Masters – Video Conference Application for the EMMA Teleconference Service

Professional Affiliations:

- Institute of Electrical and Electronics Engineers (IEEE) (member of ComSoc)

Professional Activities:

- Technical Program Committee member for ICPADS 2007, BroadNets2007, PerCom2007, WoWMoM 2007, WINSYS2007, AdHocNOW2006, ICETE2006, BroadNets 2006, PerCom2006, WINSYS2006, WoWMoM 2006,, AdHocNOW2005, ICETE2005, BroadNets 2005, HICSS-39 WPAN minitrack, IEEE WoWMoM 2005, PerCom2005, BoradNets 2004, HICSS-38 WPAN minitrack, HICSS-37 WPAN minitrack, OptiComm2003, WMAN2003, ICC2003, HICSS-36 WPAN minitrack, PerCom2003, OptiComm2002
- Technical Program Vice-Chair (Networking) for IEEE International Conference on Pervasive Computing and Communications – PerCom 2008
- Frequent reviewer for the National Science Foundation and for various European Union funding sources
- Demo Chair for IEEE MASS 2007
- Workshops Chair: IEEE International Conference on Pervasive Computing and Communications – PerCom 2007
- Finance Chair: IEEE International Conference on Pervasive Computing and Communications – PerCom 2007
Registration Chair: IEEE International Conference on Pervasive Computing and Communications – PerCom 2007
- Work in Progress Session Chair: IEEE International Conference on Pervasive Computing and Communications – PerCom 2006
- Registration Chair: IEEE International Conference on Pervasive Computing and Communications – PerCom 2006
- Minitrack Chair: on Wireless Local and Personal Area Networks at the Hawaiian International Conference on System Sciences (Software Track) 2006
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- Minitrack Chair: on Wireless Local and Personal Area Networks at the Hawaiian International Conference on System Sciences (Software Track) 2005.
- Registration Chair: IEEE International Conference on Pervasive Computing and Communications – PerCom 2004
- Publicity Chair: Optical Networking and Communications Conference – OptiComm 2003
- Publicity Chair: Optical Networking and Communications Conference – OptiComm 2002
- Guest Editor of the ACM/Kluwer journal: Mobile Networks and Applications (MONET), Special Issue on Advances in Research of Wireless Personal Area Networking and Bluetooth Enabled Networks, 2002
- Internet Chair: Optical Networking and Communications Conference – OptiComm 2000
- Local Chair: IEEE International Conference on Pervasive Computing and Communications – PerCom 2003
- Minitrack Chair: on Wireless Local and Personal Area Networks at the Hawaiian International Conference on System Sciences (Software Track) 2004.
- Minitrack Chair: Wireless Personal Area Networks at the Hawaiian International Conference on System Sciences (Software Track) 2003.
- Publicity Chair: Workshop on Wireless Mobile Multimedia (In conjunction with ACM MobiCom) 2002.
- Reviewer for several major conferences (Globecom, Infocom, VTC, MobiCom, ICC) and journals (ACM WINET, ACM MONET, IEEE TPDS, IEEE ToN, IEEE TMC, IEEE JSAC) on topics of wireless cellular and ad hoc networking, and optical communications.

Language Proficiencies:

- Hungarian (native)
- English
- German

Programming and Computer Skills:

- Advanced programming skills in C, C++, and Pascal
- Linux , Solaris, Windows 9x, Windows NT, XP administration experience
- Ethernet LAN, WLAN administration experience
- Matlab, NS2, Opnet Modeller/Planner, program package knowledge
- Microsoft Office package, Latex text editing/compiling , Xfig
- Intel 8051, PIC, TI MSP430 micro-controller programming
- HTML – web design, PHP, Python, Perl
- Familiar with languages: SQL, Ada, Prolog, Basic, SML, and 80386 assembly

Scholarships and Awards:

03/06	Research Excellence Award of the College of Engineering
08/00	Best Paper Award at the ACM MSWIM'2000 workshop.
08/99 - 05/01	Recipient of the TxTec scholarship award.
08/97 – 12/98	Recipient of the honorific Hungarian State Scholarship for Ph.D. studies.
02/96 – 07/96	Ericsson Austria scholarship for studies in Vienna, Austria.
09/95 – 05/97	Technical University of Budapest graduate scholarship.

Patents

- **G.V. Záruba**, M. Huber, F.A. Kamangar, D.Levine, “Location and Tracking System, Method and Device Using Wireless Technology,” patent pending, January 2006 (11/335,337)

Funded Research Grants:

- M. Huber, I. Ahmad, **G.V. Záruba**, J.C. Tiernan, “REU-Site: Research Experiences for Undergraduates in Information Processing and Decision Making for Intelligent and Secure Environments” source: NSF-REU, total award: \$281,614, submitted: August 2006.
- F.A. Kamangar, **G.V. Záruba**, M. Huber, D. Levine, “Remote Monitoring and Control of Sensor/Actuator Nodes in Cellular Networks,” source: Sensor Logic, Inc., total award: \$85,122, duration: 03/01/06-08/31/07, submitted: February 2006.
- F.A. Kamangar, **G.V. Záruba**, D. Levine, M. Huber, D. Schoech, S.K. Das, M. Kumar, D. Cook, K. Varghese, J. Smith, “Connect – A Personal Remote Messaging and Monitoring Infrastructure for Persons With Disabilities,” source: Texas Health and Human Services Commission, total award: \$2,112,000, duration: 01/01/03-08/30/05, submitted: October 2002.
- S. Chakravarthy, L. Holder, A. Aslandongan, J. Yu, **G.V. Záruba**, K. De, D. Levine, F. Kamangar, M. Kumar, S. Das, J. Oh, “Acquisition of High Performance Distributed Computing and Storage Infrastructure at UTA,” source: NSF-MRI, total award: \$950,000, duration: 09/01/02-08/31/03, Awarded: September 2002.
- **G.V. Záruba**, D. Levine, K. De, “University Partner Program (IxUPP) Equipment Donation,” source: IXIA Partner Program, total donation is approximated at \$120,000, awarded: September 2002.
- **G.V. Záruba**, “Constructing Bluetooth Enabled Ad Hoc Networks,” source: UTA-REP, total award: \$10k, duration 09/01/02-08/31/03, awarded: September 2002.

Pending Research Proposal:

- **G.V. Záruba**, M. Huber, “NOSS: SENgiTrack – Localization and Tracking Engine for Sensor Networks,” source: NSF-NOSS, total award:\$160,089, submitted January 2007.
- J.L. Page, **G.V. Záruba**, D.Schoech, “Teleguidance: Monitoring and Improving Adherence to HIV/AIDS Treatment Using Information Technologies,” source: NIH-HIV, total award: \$390,956, submitted: September 2006.
- **G.V. Záruba**, D. Schoech, F.A. Kamangar, M. Huber, D. Levine, “Teleherence: Monitoring/Increasing Adherence via Web Telecommunications,” source: NIH-NLM, total award: \$628,023, submitted: July 2006.
- D. Schoech, **G.V. Záruba**, D. Levine, “SmartGames: Smartphone Assessments, Games, and Exercises for Substance Abuse Prevention,” source: National Institute on Drug Abuse, total award: \$388,040, submitted: June 2006.

Interests and Activities:

- Playing with, and observing growth of own children.
- Enjoy many sports such as martial arts, soccer, tennis, table tennis, and swimming.
- Interests in history, politics, music, car mechanics, stock market and investing.
- Hobbies include repair of electronic equipment, motorcycle - automobile repair, cars of the 60s, 70s, and 80s, and wood and metal works.

Student Advisees

Ph.D. Students:

- Aaron Thengkok Thor, expected graduation: 2007 (comprehensive done)
- Victor Govindaswamy, expected graduation: 2006 Fall (research proposal done)
- Rui Huang, expected graduation: 2006 Fall (research proposal done)
- Shufeng Zhou, expected graduation: 2008 (diagnostic done)
- Tuli Nivas, expected graduation: 2007 (comprehensive done)

Master Students:

- Kumaran Sambandan, thesis, graduation: 2003 summer
- Deepak Jayanna, thesis, graduation: 2003 summer
- Karthi Keyan, project, graduation: 2003 spring
- Jyothsna Kalvala, thesis, graduation: 2003 fall
- Suresh Pallikondan, thesis, graduation: 2004 spring
- Lucinda Broome, thesis, expected graduation: 2007 spring

Publications

➤ Journals/Magazines/Book Chapters

- J1. R. Huang, G.V. Záruba, “**Incorporating Multiple Sensory Data for Mobile Ad Hoc Networks Localization**,” *To appear in the IEEE Transactions on Mobile Computing*.
- J2. R. Huang, G.V. Záruba, “**Location Tracking in Mobile Ad Hoc Networks using Particle Filters**,” *To appear in the Elsevier Journal of Discrete Algorithms*.
- J3. G.V. Záruba, F.A. Kamangar, M. Huber, and D. Levine, “**CONNECT – A Personal Remote Messaging and Monitoring System to Aid People with Disabilities**,” *IEEE Communications Magazine*, pp. 101-109, September, 2005.
- J4. G.V. Záruba, M. Huber, F.A. Kamangar, and I. Chlamtac, “**Indoor Location Tracking Using RSSI Reading from a Single Access Point**,” *ACM/Kluwer Journal of Wireless Networks (WINET)*, vol. 13:2 April 2007.
- J5. F.A. Kamangar, D. Levine, G.V. Záruba, and R. Thomas, “**Mobile Agent Connection Establishment and Management (CEMA) - Message Exchange for Pervasive Computing Environments**,” *Journal of Supercomputing*, vol. 31, nr. 1, pp. 79-99, January, 2005.
- J6. G.V. Záruba, and S.K. Das, “**Off-the-Shelf Enablers of Ad Hoc Networks**,” *2nd Chapter of: Ad Hoc Networking*, IEEE Press and John Wiley and Sons, Inc., New York, August 2004. Basagni, M. Conti, S. Giordano, and I. Stojmenovic, editors. ISBN: 0471373133
- J7. A.D. Myers, V.R. Syrotiuk, and G.V. Záruba, “**An Adaptive Generalized Transmission Protocol for Mobile Ad Hoc Networks**,” *ACM/Kluwer Journal on Mobile Networks and Applications (MONET)*, vol. 7, 493-502, 2002.
- J8. G.V. Záruba, I. Chlamtac, and S.K. Das, “**A Prioritized Real-Time Wireless Call Degradation Framework for Optimal Call Mix Selection**,” *ACM/Kluwer Journal of Mobile Networks and Applications (MONET)*, vol. 7, nr. 2, pp 143-151, April 2002.
- J9. A. Faragó, A.D. Myers, V.R. Syrotiuk, and G.V. Záruba, “**Meta-MAC Protocols: Automatic Combination of MAC Protocols to Optimize Performance for Unknown Conditions**,” *IEEE JSAC, special issue on: Analysis and Synthesis of MAC Protocols*, vol. 18, no. 9, pp. 1670-1682, September, 2000.

➤ Conferences

- C1. R. Huang, G.V. Záruba, “**Complexity and Error Propagation of Localization Using Interferometric Ranging**,” *to appear in the Proceedings of the IEEE International Conference on Communications (ICC2007)*, Glasgow, UK, June 24-28, 2007.
- C2. R. Huang, G.V. Záruba, “**Beacon Deployment for Sensor Network Localization**,” *to appear in the Proceedings of the IEEE Wireless Communications and Networking Conference (WCNC2007)*, Hong Kong, HK, March 11-15, 2007.
- C3. R. Huang, G.V. Záruba, “**Static Path Planning for Mobile Beacons to Localize Sensor Networks**,” *to appear in the Proceedings of the Third IEEE International Workshop on Sensor Networks and Systems for Pervasive Computing – PerSeNS 2007 (PerCom Workshop)*, New York, NY, March 19-23, 2007.
- C4. A.T. Thor, G.V. Záruba, D. Levine, “**A Broker and Job Advertisement Based Grid Scheduling Framework**,” *Proceedings of the Parallel and Distributed Computing Systems Conference (PDCS 2006)*, Dallas, Texas, November 13-15, 2006.
- C5. V. Govindaswamy, G.V. Záruba, G. Balasekaran, “**Receiver-Window Modified Random Early Detection (RED-RWM) Active Queue Management Scheme: Modeling and Analysis**,” *Proceedings of the IEEE International Conference on Communications 2006 (ICC 2006)*, Istanbul, Turkey, June 11-15, 2006.
- C6. V. Govindaswamy, G.V. Záruba, G. Balasekaran, “**Analyzing the Receiver Window Modification Scheme of TCP Queues**,” *Proceedings of the IEEE INFOCOM 2006 Global Internet Workshop*, Barcelona, Spain, April 28-29, 2006.

- C7. J. Kalvala, G.V. Záruba, “**Differential Priority Scheduling and Adaptive Segmentation for Bluetooth Piconets,**” *To appear in the Proceedings of the 39th Hawaii International Conference on System Sciences*, Kauai, Hawaii, January 2006.
- C8. R. Huang, G.V. Záruba, “**Location Tracking in Mobile Ad Hoc Networks Using Particle Filters,**” *Proceedings of the 4th International Conference on Ad Hoc networks and Wireless (Ad Hoc NOW)*, vol. 3738, pp. 85-98, Cancun, Mexico, October, 2005.
- C9. V. Seshadri, G.V. Záruba, M. Huber, “**A Bayesian Sampling Approach to In-Door Localization of Wireless Devices Using Received Signal Strength Indication,**” *Proceedings of the Third International Conference on Pervasive Computing and Communications (PerCom 2005)*, pp. 75-84, Hawaii, March 2005.
- C10. D. Jayanna, and G.V. Záruba, “**A Dynamic and Distributed Scatternet Formation Protocol for Real-life Bluetooth Scatternets,**” *Proceedings of the 38th Hawaii International Conference on System Sciences*, Waikoloa Village, Hawaii, January 2005.
- C11. G. V. Záruba, M. Huber, F.A. Kamangar, I. Chlamtac, “**Monte Carlo Sampling Based In-Home Location Tracking With Minimal RF Infrastructure Requirements,**” *Proceedings of the IEEE Globecom 2004*, Dallas, TX, December 2004.
- C12. V.V. Govindaswamy, G.V. Záruba, and G. Balasekaran , “**A QoS Scheme to address Communication Latency Issues for Critical Network Flows in Best-Effort Networks using Mobile Agents,**” *Proceedings of the Canadian Conference on Electrical and Computer Engineering CCECE2004*, Niagara Falls, Ontario, Canada, May 2004, Volume 2, 2-5 May 2004 Page(s):891 - 896 Vol.2
- C13. K. Sambandan, G.V. Záruba, and D.Levine, “**On the Reliability and Additional Overhead of Reliable On-Demand Multicast Routing Protocol for Mobile Ad Hoc Networks,**” *Proceedings of the 2004 International Conference on Parallel and Distributed Processing Techniques and Applications PDPTA'04*, Las Vegas, Nevada, June 2004.
- C14. G.V. Záruba, and V. Gupta, “**Simplified Bluetooth Discovery – Analysis and Simulations,**” *Proceedings of the 37th Hawaii International Conference on System Sciences*, Waikoloa Village, Hawaii, January 2004, 2004 Page(s):307 - 315
- C15. G.V. Záruba, and I. Chlamtac, “**Accelerating Bluetooth Inquiry for Personal Area Networks,**” *Proceedings of the IEEE Globecom 2003*, San Francisco, CA, December 2003, Volume 2, 1-5 Dec. 2003 Page(s):702 - 706 Vol.2
- C16. R. Huang, and G.V. Záruba, “**Effect of Ingress Buffering on Self-Similarity of Optical Burst Traffic,**” *Proceedings of SPIE Optical Communications and Networking Conference (OptiComm 2003)*, Dallas, TX, October 2003.
- C17. R. Huang, G.V. Záruba, and M. Huber, “**Link Longevity Kalman-Estimator for Ad Hoc Networks,**” *Proceedings of the IEEE Vehicular Technology Conference (VTC 2003)*, Fall. 2003 IEEE 58th, Orlando, FL, October 2003, Volume 5, 6-9 Oct. 2003 Page(s):2819 - 2823 Vol.5
- C18. F. Kamangar, D. Levine, G.V. Záruba, and N. Chitturi, “**Distributed Network Monitoring using Mobile Agents Paradigm,**” *Proceedings of the 2003 International Conference on Parallel and Distributed Processing Techniques and Applications PDPTA'03*, Las Vegas, Nevada, June 2003.
- C19. D. Levine, R. Thomas, F. Kamangar, and G.V. Záruba, “**Mobile Agents for Pervasive Computing Using a Novel Method of Message Passing,**” *Proceedings of the 2003 International Conference on Parallel and Distributed Processing Techniques and Applications PDPTA'03*, Las Vegas, Nevada, June 2003.
- C20. G.V. Záruba, W. Wu, M.J. Kumar, and S.K. Das, “**Mobility Support Using Intelligent User Shadows for Next-Generation Wireless Networks,**” *Proceedings of the 2003 World Wireless Congress*, San Francisco, CA, May 27-30, 2003.
- C21. G.V. Záruba, V. Chaluvadi, A. Suleman, “**LABAR: Location Area Based Ad Hoc Routing for GPS-Scarce Wide-Area Ad Hoc Networks,**” *Proceedings of the IEEE International Conference on Pervasive Computing and Communications (PerCom2003)*, 23-26 March 2003 Page(s):509 - 513

- C22. G.V. Záruba, D. Levine, “**Accelerated Neighbor Discovery in Bluetooth Based Personal Area Networks,**” *Proceedings of the 2002 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'02)*, Las Vegas, NV, USA, June, 2002.
- C23. G.V. Záruba, I. Chlamtac, and S. Basagni, “**Bluetrees - Scatternet Formation to Enable Bluetooth-Based Ad Hoc Networks,**” *Proceedings of the IEEE International Conference on Communications (ICC) 2001*, vol.1, pp. 273-277, Helsinki, Finland, June, 2001.
- C24. G.V. Záruba, I. Chlamtac, and S.K. Das, “**An Integrated Admission-Degradation Framework for Optimizing Real-Time Call Mix in Wireless Cellular Networks,**” *Proceedings of the ACM Modeling, Analysis and Simulation of Wireless and Mobile Systems 2000 (MSWiM'00)*, pp. 44-51, Boston, Massachusetts, August 2000. (*Best Paper Award.*)
- C25. A. Faragó, A.D. Myers, V.R. Syrotiuk, and G.V. Záruba, “**A New Approach to MAC Protocol Optimization,**” *Proceedings of the 2000 IEEE Globecom General Conference*, vol.3, pp. 1742-1746, San Francisco, California, November, 2000.
- C26. A.D. Myers, V.R. Syrotiuk, and G.V. Záruba, “**An Adaptive Medium Access Control (MAC) protocol for Reliable Broadcast in Wireless Networks,**” *Proceedings of the IEEE International Conference on Communications (ICC) 2000*, vol. 3, pp. 1692-1696, New Orleans, Louisiana, USA, June, 2000.
- C27. I. Chlamtac, A. Faragó, A.D. Myers, V.R. Syrotiuk, and G.V. Záruba, “**A Performance Comparison of Hybrid and Conventional MAC Protocols for Wireless Networks,**” *Proceedings of the VTC2000, IEEE 51st Vehicular Technology Conference*, vol. 1, pp. 201-205, Tokyo, Japan, 2000.
- C28. I. Chlamtac, A. Faragó, A.D. Myers, V.R. Syrotiuk, and G.V. Záruba, “**ADAPT: A Dynamically Self-Adjusting Media Access Control Protocol for Ad Hoc Networks,**” *Proceedings of the 1999 IEEE Globecom General Conference*, vol. 1a, pp. 11-15, Rio de Janeiro, Brazil, December 1999.
- C29. P. Botka, P.D. Füzési, L.G. Malicskó, G.V. Záruba, and I. Cselényi, “**Description and Initiation of Multimedia Services,**” *Proceedings of the 5th International Conference on Telecommunications*, pp. 325-332, Zagreb, Croatia, 1999.
- C30. P. Botka, P.D. Füzési, L.G. Malicskó, and G.V. Záruba, “**Realization Aspects of General Purpose, Object Based Distributed-Multimedia Services,**” *Proceedings of the High Performance Computing Symposium, 1999 Advanced Simulation Technologies Conference*, San Diego, California, USA, April, 1999.
- C31. N. Bjorkman, I. Cselényi, A. Latour-Henner, G.V. Záruba, “**The EMMA Multimedia Conference Service,**” *Proceedings of the International IEEE Conference on Information, Communications and Signal Processing*, vol. 3, pp. 1691-1695, Singapore, 1997.
- C32. I. Cselényi, C. Gisgård, A. Latour-Henner, I. Szabó, G.V. Záruba, “**Multipurpose Middleware for Broadband Multimedia Applications,**” *Proceedings of the IEEE Croatia Broadband and Multimedia Workshop, CONTEL B&MW*, Zagreb, Croatia, November, 1996.