WORKSHOP RECORD

FIFTH WINLAB WORKSHOP
ON
THIRD GENERATION
WIRELESS INFORMATION NETWORKS

IN COOPERATION WITH THE
IEEE VEHICULAR TECHNOLOGY SOCIETY

BRUNSWICK HILTON
EAST BRUNSWICK, NEW JERSEY
USA

APRIL 26 - 27, 1995

WINLAB
WIRELESS INFORMATION NETWORK LABORATORY
RUTGERS UNIVERSITY
BOX 909
PISCATAWAY, NEW JERSEY 08855-0909
PHONE: (908) 445-5954 FAX (908) 445-3693
# TABLE OF CONTENTS AND PROGRAM

**WEDNESDAY, APRIL 26, 1995**

## WELCOME

*David Goodman*  
8:30A-8:45A  
(1)

## SESSION 1 ARCHITECTURE I  
8:45A-10:00P  
(3)

**Discussion Leader:** George Squires  
TR Labs

1. **Issues in Wireless Access Broadband Networks**  
*Mahmoud Naghshineh (IBM - T.J. Watson Research Center)*  
*Mischa Schwartz and Anthony S. Acampora (Columbia University)*  
5

1. **An ATM Based PCS/Cellular Architecture**  
*Bharat T. Doshi and Anil Sawkar (AT&T Bell Laboratories)*  
23

1. **A Distributed, Mobile Wireless Infrastructure for Multimedia Applications**  
*Mario Gerla, Jack Tzu-Chieh Tsai, Nicholas Bambos and Shou C. Chen (University of California - Los Angeles)*  
37

## BREAK  
10:00A-10:30A

## SESSION 2 RADIO RESOURCE MANAGEMENT I  
10:30A-12:10P  
(51)

**Discussion Leader:** Sudheer Grandhi  
Bell Northern Research

2. **Distributed Measurement-based Dynamic Channel Assignment for Wireless Personal Communications**  
*Matthew M-L Cheng and Justin C-I Chuang,*  
*(Hong Kong University of Science and Technology)*  
53

2. **Distributed Radio Resource Allocation in Highway Microcellular Systems**  
*Michael Andersin, Kai-Erik Sunell (Royal Institute of Technology-Sweden)*  
*Magnus Frodigh (Ericsson Radio Systems AB - Sweden)*  
77

2. **Handover Performance; Propagation and Traffic Issues**  
*Ganmini N. Senarath and David Everitt (University of Melbourne)*  
87

2. **A Simple Analysis of CDMA Soft Handoff Gain and its Effect on the Cell's Coverage Area**  
*Pulin R. Patel, Usman S. Goni, Eric Miller and Paul P.S. Carter,*  
*(LCC, L.L.C., Inc.)*  
101
LUNCH 12:10P-1:30P

SESSION 3 ACCESS 1:30P-5:00P (119)

Discussion Leader: K.S. Natarajan Motorola

3.1 Performance Analysis of Capture-Division Packetized Access (CDPA) for Cellular Systems Flaminio Borgonovo, Luigi Fratta and Michele Zorzi (Politecnico di Milano - Italy) (121)

3.2 A Novel Radio Channel Control Method for Improved Multiple Access Schemes Q. Cao and M.K. Gurcan (Imperial College of Science, Technology and Medicine - London) (139)

3.3 Successive Interference Cancellation Schemes in Multi-Rate DS/CDMA Systems Ann-Louise Johansson and Arne Svensson (Chalmers University of Technology - Sweden) (155)

3.4 A New Distributed Reservation Multiple Access Scheme for the Aviation VHF Packet Communication Channel Sanjay Singh and Mario Gerla (University of California - Los Angeles) Steve Friedman (Aeronautical Radio, Inc.) (175)

BREAK 3:10P-3:40P

Discussion Leader: James Yu GTE Laboratories

3.5 Network Simulations for IS-95 CDMA Systems Szu-Wei Wang and Hua Mary Chion (NYNEX Science and Technology) (193)

3.6 PACS Contention Algorithm for Initial Access and Handoff A.R. Noerpel, L.F. Chang and Y.B. Lin (Bellcore) (217)

3.7 Experimental Implementation for Interoperable Licensed and Unlicensed Personal Communication Services: the PACS-UB System R.A. Ziegler, A.R. Noerpel, L.F. Chang and N. R. Sollenberger (Bellcore) (227)

ADDITIONAL DISCUSSION TIME 4:45P-5:00P

DINNER 6:30P-9:30P
THURSDAY, APRIL 27, 1995

SESSION 4  RADIO RESOURCE MANAGEMENT II  8:30-11:55A  (243)
Discussion Leader:  Magnus Frodigh  
    Ericsson Radio Systems AB

4.1  An Algorithm for Capacity Allocation in Cellular  
    Spread Spectrum Networks with Non-Uniform  
    Traffic Loadings  
    Stephen V. Hanly (AT&T Bell Laboratories)  (245)

4.2  Uplink Power Control for CDMA Cellular Radio Systems  
    Roy D. Yates (WINLAB/ ECE Dept.- Rutgers University)  (261)

4.3  A Distributed Power Control Algorithm for Bursty  
    Transmissions on Cellular, Spread Spectrum  
    Wireless Networks  
    Debasis Mitra and John A. Morrison (AT&T Bell Laboratories)  (275)

4.4  Soft Admission in Cellular PCS with Constrained  
    Power Control and Noise  
    Michael Andersin, Jens Zander (Royal Institute of Technology)  
    Zvi Rosberg (IBM Israel)  (287)

BREAK  10:10A-10:40A

SESSION 5  ARCHITECTURE II  10:40A-11:55A  (321)
Discussion Leader:  Szu-Wei Wang  
    NYNEX Science and Technology

5.1  Issues in Developing Functional Model(s) For  
    Future Mobile Communication Networks  
    Elisabeth Bui, Alain Charbonnier and Jean-Christian Benard-Dende  
    (CNET - France)  (323)

5.2  Mobility Support in a Wireless ATM Network  
    R. Yuan, S. Biswas and D. Raychaudhuri (NEC USA, Inc.)  (335)

5.3  Adaptive Paging Algorithms for Cellular Systems  
    Seshu Madhavapeddy, Kalyan Basu and Allison Roberts  
    (Bell-Northern Research)  (347)

LUNCH  12:00N-1:30P
SESSION 6  MOBILE DATA, MOBILE NETWORKS  1:30P-4:30P  (363)
Discussion Leader:  Robert Ziegler
Bellcore

6.1  Cellular Wideband Mobile Data Communications  (365)
Zhichun Honkasalo (Nokia Research Center - Finland)
Jari Hämäläinen (Nokia Mobile Phones - Finland)

6.2  Experimental Results From Internetworking Data Applications Over Various Wireless Networks Using A Single Flexible Error Control Protocol  (375)
A.J. McAuley, M. Kramer, G. Ramirez (Bellcore)
D.S. Pinck, L. Tong (Jet Propulsion Laboratory)
T. Kanai (Fujitsu Laboratories of America)
H. Tohme (MCI Wireless Communications Services)

6.3  Radio Link Protocols for Cellular Data  (391)
Bharat T. Doshi, Richard P. Ejzak and Sanjiv Nanda
(AT&T Bell Laboratories)

BREAK  2:45P-3:15P

6.4  Asymmetric Costs and Dynamic Query Processing in Mobile Computing Environments  (409)
Ravi Jain and Narayanan Krishnakumar (Bellcore)

6.5  An Efficient Approach to Updating Replicated Databases in Wireless and Advanced Intelligent Networks  (421)
Kin K. Leung (AT&T Bell Laboratories)

ADDITIONAL DISCUSSION TIME  4:05P-4:30P