Plans underway for 1996 wireless personal communications symposium

Preparations are underway for the sixth Virginia Tech Symposium on Wireless Personal Communications. On June 5-7, 1996, industry and university experts from around the globe will meet on the Virginia Tech campus to share the latest theories and techniques that are shaping the wireless future. This year’s symposium will feature several new attractions including:

- an evening panel on future semiconductor products for the wireless market,
- an evening panel on the feasibility of commercial adaptive antenna technology, and
- a special Friday afternoon panel session on deployment strategies for PCS.

In keeping with MPRG tradition, the symposium opens with registration and a gourmet reception from 5:30 - 7:30 PM on Wednesday, June 5. The Semiconductor Product Trends panel session immediately follows the Wednesday evening reception. Technical sessions will begin on Thursday morning at 8:30 a.m. and conclude at 2:00 p.m. on Friday afternoon. The Adaptive Antenna panel session will follow the Thursday evening reception. A Virginia style party featuring a barbecue and live music will close the symposium on Friday evening following the Friday afternoon panel session on Deployment Strategies for PCS. The registration includes receptions on Wednesday and Thursday evenings, breakfasts and luncheons on Thursday and Friday, and the Friday evening party. A high quality bound proceedings of all papers presented at the symposium is also included with the registration.

Conference fees, registration information, and a program are included on the back pages of this issue of the Propagator. Be sure to register early, as attendance will be limited to ensure close interaction. We look forward to hosting you at this year’s Symposium! For more information, contact Jack Lilly at the Continuing Education Center, (540) 231-4849.

New project examines vehicle location using cellular signals

The Mobile and Portable Radio Research Group (MPRG) and the Center for Transportation Research (CTR) at Virginia Tech were jointly awarded a contract to identify and evaluate several low and moderate cost options for the implementation of MayDay emergency communications on the I-95 corridor. The project began in March 1996 and extends for one year.

The I-95 Corridor Coalition is a voluntary association that joins 12 State Departments of Transportation and two city DOT’s in the Northeast.

See New project, page 2
1996 SYMPOSIUM PROGRAM SCHEDULE

6th Annual
VA Tech Symposium
on Wireless Personal
Communications
June 5-7, 1996

PURPOSE

The wireless industry’s explosive growth has resulted from the innovative application of technology to create new products and services. The success of exciting new products and services such as Cellular Digital Packet Data, Personal Communications Service and Wireless Local Area Networks will surely depend on the ability to overcome new technical challenges. This year’s sixth annual MPRG symposium promises to be the most exciting yet, featuring cutting-edge presentations and panel sessions on these technical challenges, and hardware demonstrations of new wireless technologies and applications.

On June 5-7, 1996, industry and university experts from around the globe will meet on the Virginia Tech campus to share the latest advances and techniques that are shaping the wireless future. Technical sessions include 22 high quality presentations on radiowave propagation, modulation and signaling techniques, CDMA systems and techniques, position location strategies, wireless networking and novel wireless services, as well as interactive poster sessions and hardware demonstrations.

This year’s program also includes three panel sessions on Wednesday and Thursday evenings and Friday afternoon. These exciting sessions feature freewheeling discussions by industry leaders on the latest developments in future semiconductor products for the wireless market, commercial adaptive antenna technology, and deployment strategies for Personal Communications Systems (PCS).

The atmosphere is relaxed to encourage discussion and learning. A single session format and limited registration ensures close interaction among all participants. Early June is a beautiful time of the year in Blacksburg and the excellent conference facilities and panoramic mountain views will pleasantly surprise those who have not yet visited our campus. Blacksburg is nestled in Virginia’s Blue Ridge Mountains and is only minutes away from several national parks and well known vacation spots.

HIGHLIGHTS

Last year’s Fifth Virginia Tech Symposium on Wireless Personal Communications attracted over 250 professionals in the wireless industry and featured high quality technical and tutorial presentations. Kluwer Academic Press has published the book, Wireless Personal Communications: The Evolution of Personal Communication Systems, based on last year’s symposium and plans are under way with Kluwer to publish another book based on this year’s presentations.

This year’s symposium features an outstanding technical program of 22 papers by authors from seven nations. In addition, there are three special evening panel sessions on such wide-ranging topics as the outlook for future wireless semiconductor products, the feasibility of smart antennas for cellular, and the PCS buildout. The symposium’s unique informal atmosphere and single session format fosters interaction of all participants.

The symposium begins with a gourmet reception on Wednesday, June 5, from 5:30-7:30 PM. A panel session on Semiconductor Product Trends for Wireless Communications follows the Wednesday evening reception.

Excitement over the potential of emerging adaptive antenna technologies to improve capacity and performance is sweeping the wireless industry. Thursday night’s panel session focuses on the Feasibility of Adaptive Arrays for Cellular and PCS, from the perspective of both equipment manufacturers and service providers.

For the first time, this year’s symposium concludes Friday afternoon with a third panel session on the topic of Deployment Strategies for PCS.

Technical presentations begin on Thursday morning and are distributed into three sessions on Wireless Systems and Hardware, CDMA and DSP Techniques, and Propagation and System Design Issues. Presentations will focus on basic concepts, new applications, and technical advances. The unique single session format allows ample opportunity to engage the speakers in a freewheeling discussion on the future of the wireless industry.

Between technical sessions, MPRG students present their latest research in interactive poster sessions.

A Virginia style party featuring a barbecue and live music closes the symposium on Friday evening. The registration includes receptions on Wednesday and Thursday evenings, breakfasts and luncheons on Thursday and Friday, the Friday evening party, and a high quality bound proceedings of all papers presented at the symposium. Tours of the MPRG laboratory facilities are also provided, featuring state-of-the art research work in propagation, adaptive antennas, signal processing, and wireless system design. If you are part of the rapidly growing wireless community, you don’t want to miss this symposium. We look forward to hosting you!
THE PROPAGATOR

1996 SYMPOSIUM PROGRAM SCHEDULE

LOCATION AND LODGING

The symposium is held on the beautiful campus of Virginia Polytechnic Institute and State University (Virginia Tech) in the modern Squires Student Center and the Donaldson Brown Hotel and Conference Center. The Blacksburg Limousine Service offers efficient transportation between the Roanoke Airport and the Donaldson Brown Hotel and Conference Center.

Blacksburg is southwest of Roanoke, Virginia, on U.S. 460. Route 460 is reached by Interstate 81 (exit 118) at Christiansburg, Virginia. The campus borders U.S. 460, which is Blacksburg’s Main Street, and the 460 Bypass. The Center is located in downtown Blacksburg two blocks off Main Street at the corner of College Avenue and Otey Street. Convenient guest parking is available for conference participants and a shuttle bus will provide transportation between the Donaldson Brown Hotel and Conference Center and local hotels.

Lodging rooms are being held at the Donaldson Brown Hotel and Conference Center and you are responsible for reserving your room. Call the Donaldson Brown Hotel at (540) 231–5156 or fax to (540) 231–3746. Mention the name of the symposium when making your reservations. Lodging reservations should be made by May 3, 1996.

HOW TO REGISTER

The registration fee for the symposium is $375. Employees of the MPRG affiliate companies have a special reduced fee of $325, and full time students may register at a special rate of $250. The fee includes participation in all activities, bound proceedings, two gourmet receptions, two breakfasts, and two luncheons. All participants, including presenters, are required to register by May 22, 1996. To register, please return the attached registration form with your payment. After May 22, space availability should be confirmed by calling (540) 231–5182.

Registrations are limited.

Cancellation and Refund Policy: The university may cancel or postpone any program because of insufficient enrollment or other unforeseen circumstances. If the course is cancelled or postponed, the university will refund registration fees, but cannot be held responsible for any other costs, charges or expenses, including cancellation/change charges assessed by airlines or travel agencies. Requests for refunds are honored if received at least four full working days before the start of the symposium. However, substitutions are accepted at any time.

IMPORTANT DATES

- Lodging Reservations Due: May 3
- Exhibit Deadline: May 15
- Registration Deadline: May 22
- Reception and Open House: June 5
- Technical Sessions: June 6–7

FOR MORE INFORMATION

For further information about this symposium, please contact Jack Lilly at the Donaldson Brown Hotel and Conference Center at (540) 231–4849, fax (540) 231–9886, or e-mail jacklilly@vt.edu.

WEDNESDAY, JUNE 5

12:00 - 7:30 p.m. Registration
5:30 - 7:30 p.m. Gourmet Reception/Poster Session/MPRG Laboratory Open House
7:30 p.m. Panel Session — Semiconductor Product Trends for Wireless Communications
   Speakers: Mike Schwartz, National Semiconductor; Mike McMahan, Texas Instruments; Dennis Fisher, ITT Gallium Arsenide; Daniel Fague, Analog Devices; Paul McNelley, Motorola

THURSDAY, JUNE 6, 1996

7:00 - 8:00 a.m. Breakfast Buffet in Commonwealth Dining Room
8:30 a.m. Session I — NOVEL WIRELESS SYSTEMS AND HARDWARE
   Thomas F. Evans, BellSouth Wireless, Inc.
8:55 - 9:20 a.m. Smart Antenna Testbed for Mobile Wireless Systems, Joseph P. Kennedy, Phillip D. Harvey, Steven W. Ellingson, E-Systems, Inc.
9:20 - 9:45 a.m. A Practical Perspective on Cellular Digital Packet Data (CDPD) Systems, Nadine L. Romanowich, AT&T Wireless Services
9:45-10:10 a.m. An Overview of the Fixed Wireless Loop Products and Their Deployment Status, Rooollah Hajibonabeh, DSC Communications Corporation
10:10-10:40 a.m. Refreshment Break/Poster Session/Exhibits
10:40-11:05 a.m. Low Cost BPSK 2.4 GHz Radio for Wireless LAN, William O. Camp, Jr., Arthur Fleck, William Nunnery, Ralph Yeager, Mike Bracco, IBM
11:05-11:30 a.m. Error Floor of π/4 DQPSK in Mobile Radio Channels, Andreas F. Molisch, Ernst Bonek, Technische Universitat Wien, Austria
11:30-11:55 a.m. Real Time Implementation of QCELP Vocoder for Speech and Data Service in CDMA System Using TMS320C50 Fixed Point DSP Chip, Jeewon Kim, Byungseok Yoon, Seokjin Jang, Wonmyung Lee, Myungseob Lim, Electronics & Telecommunications Research Institute, Korea
11:55-12:00 p.m. Lunch in Commonwealth Dining Room
12:00-1:00 p.m. Session II — CDMA AND DSP TECHNIQUES
1:00-1:25 p.m. CDMA Positioning Methods, Klein S. Gilhousen, Qualcomm, Inc.
1:25-1:50 p.m. Spread-Spectrum Packet Radio Using Narrowband Headers, Dr. Robert K. Morrow, Jr., Morrow Technical Services
1:50-2:15 p.m. Congestion Relief on Power-Controlled CDMA, Jay M. Jacobsbein, Pericile Communications Company
2:15-2:40 p.m. A Simulation Study of Interference and SIR in Integrated Voice/Data Wireless DS/CDMA Networks, Kaushik Das, Dr. Salvatore D. Mognera, McGill University, Canada
3:40-4:00 p.m. Refreshment Break/Poster Session/Exhibits
THE PROPAGATOR

1996 SYMPOSIUM PROGRAM SCHEDULE

3:35 - 4:00 p.m. Cochannel Receivers for CPM Signals Based Upon the Laurent Representation. Peter A. Murphy, Gary E. Ford, Or. for Image Processing and Integrated Computing, University of California, Davis

4:00 p.m. Conclusion

5:30 - 7:30 p.m. Gourmet Reception/Poster Session/MPRG Laboratory Open House

7:30 p.m. Panel: Feasibility of Adaptive Arrays for Cellular and PCS Speakers: Harry Ellis, Texas Instruments; Joseph Kennedy, E-Systems; Mark Austin, BellSouth Cellular; Kevin Kelley, Nortel Technology; Laurie Bigler, Southwestern Bell; Lee Tjo, AirTouch

FRIDAY, JUNE 7, 1996

7:00 - 8:00 a.m. Breakfast Buffet in Commonwealth Dining Room

8:00 a.m. Session III — PROPAGATION AND SYSTEM DESIGN ISSUES

8:00 - 8:25 a.m. Site Survey for Wireless Communications Evaluation for New York Mercantile Exchange, Carl Panasik, Dale Cone, Tom Step, Texas Instruments, Inc.

8:25 - 8:50 a.m. Measurement of RF Propagation Into Concrete Structures Over the Frequency Range 100 MHz to 3 Ghz, Clayborne D. Taylor, Samuel J. Gutierrez, Steven L. Langdon, Kenneth L. Murphy, William A. Walton, III, MSU College of Engineering

8:50 - 9:15 a.m. Interference from Wireless Devices into Network Equipment Inside COs Between 450 and 914 mHz, Mahbub Hoque, Steve Harbin, Zhaojing Ma, Bellcore

9:15 - 9:40 a.m. Fading Phenomena in the Wireless Environment, Louis Taylor, Telos Federal Systems; Frank Bohn, Paul Major, U.S. Army Communications

9:40-10:10 a.m. Refreshment Break/Poster Session/Exhibits

10:10 - 10:35 a.m. A Theoretical Model of Multipath Fading in Wideband CDMA Environments, Robert C. Oii, GTE Laboratories, Inc.; I-Tai Lu, Weber Research Institute

10:35 - 11:00 a.m. The Prediction of the Performances of Diversity Systems by Modal Analysis and FDTD, Guido Dolmans, Eindhoven University of Technology, The Netherlands

11:00 - 11:25 a.m. The Spectrum Management Process: How It Is Working to Support the New Wireless Services, Dr. David J. Cohen, University of Maryland

11:25 - 1:30 p.m. Lunch in Commonwealth Dining Room

1:30 - 2:00 p.m. Poster Session/Exhibits

2:00 p.m. Panel: Deployment Strategies for PCS Speakers: Klein Gilhousen, Qualcomm; David Cohen, University of MD; Victor Fung, Nortel; Stephen Garber, CFW Communications; Jeff Rosenblatt, Comsearch; Scott Fox, BellSouth

3:30 p.m. Conclusion/Refreshment Break/Poster Session/Exhibits

6:00 p.m. Party and Barbecue at the Virginia Tech German Club

REGISTRATION

Wireless Personal Communications June 5-7, 1996

Please print or type. Complete a separate form for each participant.

*Name ____________________________

Social Security No. ____________________________

Title ____________________________

Organization ____________________________

**Organization’s FID# ____________________________

Address ____________________________

City ____________________________ State ___________ Zip ____________

Daytime Phone No. ____________________________

Signature ____________________________

Registration Fees:

□ $375 - Regular Fee

□ $325 - Affiliates of MPRG Fee

□ $250 - Full-Time Student Fee*

Make check payable to: Treasurer, Virginia Tech CE

Return with payment by May 22, 1996 (no staples, tape, or paper clips, please) to:

Conference Registrar

Division of Continuing Education
Virginia Tech, Mail Code 0104
Blacksburg, VA 24061 • phone (540) 231-5182

*For more than one registrant, please include the above information for each person on a separate sheet. For student discount, you must be a full-time registered undergraduate or graduate student. Have your department head or advisor sign here.

**FID number is necessary to process a refund payable to any company, agency or government.

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DPST: ____________________________

DATE: ____________________________