



IEEE Section Meeting - Monday September 20, 2004

Wireless Sensor Networks - Kent Colling - Innovative Wireless Technologies

Wireless Sensor Networks

- Speaker:** Kent Colling, Sr. Software Engineer, Innovative Wireless Technologies, Forest, VA
- Where:** Jonathon's, 828 Main St., Lynchburg, VA 24504, 434-847-8250 (Bank of the James Bldg., 8th floor, Suite 801)
- When:** Monday September 20, 2004
 6:00 P.M. Social
 6:30 P.M. Dinner
 7:20 P.M. Section Business
 7:30 P.M. Speaker
- Meal Cost:** \$12.95 + tax and gratuity
- Directions:** Please follow the link for "Next Meeting" on our web site: www.cvaieee.org
- RSVP:** Please RSVP to Carlos Whaley (carlos.whaley@ieee.org or 434-525-4852) by 5:00 PM on Thursday September 16 so we know how many to expect

Abstract: Wireless ad hoc data networks have become a critical need for our nation's military and public safety personnel for improved perimeter defense, threat tracking, and on-scene data networks. Security threats require broad distribution of sensors to monitor troop movements and proliferation of agents such as chemical, biological, and radiological materials. This type of monitoring system is only feasible via long battery life, low cost, data networks that can be rapidly deployed and self-configuring. The commercial derivatives of these wireless data networks are almost endless. Application examples include asset tracking, wireless meter reading, facility surveillance, and networking of home electronics.



Technical challenges associated with wireless ad hoc data networks are harsh RF propagation environments, network discovery and maintenance, low power operation, and ad hoc data routing. Kent Colling of Innovative Wireless Technologies (IWT) in Forest, VA will address these challenges, discuss industry standards initiatives, and demonstrate research and development activities occurring at IWT.

About our Speaker: Kent Colling received his BSEE degree from Michigan Technological University in 1990 and the MSEE from Syracuse University in 1993. He also attended the GE Edison and Advanced Course in Engineering.

Kent is a Senior Software Engineer at Innovative Wireless Technologies and is currently leading ad hoc wireless communications network research and development activities at IWT. He has over 14 years experience in communications system and software design. He specializes in digital signal processing and embedded software design for wireless ad hoc networked products. Prior to joining IWT, Kent worked for Ericsson, Inc., where he was the platform architect of broadband cable infrastructure equipment. This position provided extensive experience in IP Routing, Quality of Service (QoS), telephony, and MAC level management of client devices. He has experience implementing voice codecs, QPSK, and data encryption for public safety radio products. Kent spent 5 years with Lockheed Martin developing beamforming, target detection, and tracking software for various arrays in the Seawolf class submarine combat system.

For more details about Innovative Wireless Technologies, please visit their web site, www.iwtwireless.com.

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Local M/A-COM Engineers Achieve Prestigious IEEE CSDP Certification

Five engineers from M/A-COM, Inc. have achieved the prestigious IEEE Computer Society's Certified Software Development Professional (CSDP) designation. They join 14 others from the state of Virginia, and only 343 worldwide who have achieved this recognition. The recipients include Antonio Martin, Todd Matthews, James Porter, Reginald Richards, and Karen Walthall. They stand in good company with Steve McConnell, author of Code Complete, Rapid Development, and Software Project Survival Guide - In 1998, readers of Software Development magazine named Mr. McConnell one of the three most influential people in the software industry, along with Bill Gates and Linus Torvalds.

For more information about the CSDP certification program, please visit <http://www.computer.org/certification>.

Upgrade your membership

Becoming an IEEE Senior Member is one of the most important things that you can do as a Electrical or Computer Engineer. Senior Member status is a recognition by your peers of career achievement and contribution to the profession.

The IEEE has a special program each year to promote Senior Member upgrades.

This program makes it easy to process a Senior Member application and it gives a financial incentive of a \$10 rebate to the Section for every new Senior Member that is approved. Information on this program can be found at <http://ewh.ieee.org/reg/3/membership/smprogram.html> & <http://ewh.ieee.org/reg/3/membership/sminitiative.html>.

Note that your Section officers are happy to help you with the recommendation process. Please contact any of the officers (contact information is on the left).

New Faces of Engineering Nominations

The IEEE is seeking nominees for the New Faces of Engineering to showcase during Engineers Week (EWeek) 2005. The New Faces program highlights the vitality, diversity and rich contributions of the world's young engineers.

Nominees must hold an engineering degree, be employed as an engineer from two to five years, and have worked with projects that significantly affect public welfare or further professional development and growth. The focus is on engineers 30 and under. Nomination forms are available at http://www.eweek.org/site/News/Eweek/2005_Nominations.shtml.

Five IEEE members, including two from outside the United States, will be chosen by an ad hoc committee to represent the IEEE and will be featured on the EWeek Web site (www.eweek.org). The top nominee from each EWeek sponsoring society will appear in USA Today during EWeek 2005, 20-26 February. You can view last year's honorees at <http://www.eweek.org/site/Engineers/newfaces2004/index.shtml>.

IEEE nominees should be submitted to Helen Hall at h.hall@ieee.org by Friday 1 October 2004.

November Section Meeting

Our November meeting will be a plant tour of Electronic Design and Manufacturing, Inc. (EDM), Lynchburg, VA on Tuesday November 16. Dinner will be at Charley's Restaurant (6:00 PM), followed by the plant tour at 7:30 PM. For more information about EDM, please visit their web site: www.edmva.com.

December Social

We are planning to have a social event on December 7 from 7 PM to 10 PM at the McCormick Observatory on the UVa campus in Charlottesville, VA. There will be light refreshments plus a tour of the observatory.

IEEE Section Meeting - Tuesday October 19, 2004

Use of Insulated Gate Bipolar Transistors in High Power Motor Control Applications - Eric Christenson - Cableform, Inc.

Use of Insulated Gate Bipolar Transistors in High Power Motor Control Applications

Speaker: Eric Christenson, Chief Software Engineer, Cableform, Inc., Zion Crossroads, VA

Where: UVa Thornton Hall, Room E-303

When: Tuesday October 19, 2004
6:00 P.M. Social
6:30 P.M. Pizza and soda provided by Section
7:00 P.M. Section Business
7:15 P.M. Speaker

Directions: Please follow the link for "Next Meeting" on our web site: www.cvaieee.org

RSVP: Please RSVP to Larry Heine (l.heine@ieee.org or (540) 833-5142) by 1:00 PM on October 19 so we know how many to expect

Abstract: Electric Motor Controls are an increasingly important part of our industrial infrastructure. Recent advances in semiconductors and computation give compelling cost economies with electronic motor controls.

This talk will focus on industrial motor control technology, with emphasis on the synergistic effects of computers and power semiconductors. Eric will discuss both the history of power switching devices and its interaction with computing and economics. DC and AC drives will be contrasted, and the Drop-Proof DC hoist circuit will be shown.

About Our Speaker: Eric Christenson graduated with a BS in EE and CS from Rose-Hulman Institute of Technology in 1986. He received a master's in Manufacturing Systems Engineering from Lehigh University in 1990. He is inventor on US Patent 5,106,192 -- Absolute Phase Multiple Wavelength Heterodyne Interferometry. He has also programmed a number of embedded systems. Since 1996 motor controls have been in the forefront of his professional life - first as a programmer on the GE-Fanuc PLC-hosted motion coprocessors, targeting injection molding machines, and more recently as chief software engineer at Cableform, Inc, (Zion Crossroads, VA) targeting DC motors in various configurations.

IEEE Transactions on Automation Science and Engineering

Twenty years ago, the field of Robotics was galvanized by the creation of an IEEE Journal devoted to the topic. We now have the opportunity to do the same for the field of Automation.

In July, the IEEE Robotics and Automation Society premiered IEEE Transactions on Automation Science and Engineering (T-ASE), a new journal devoted to publishing foundational research addressing the scientific methods and technologies that improve efficiency, productivity, quality and reliability across today's most important industries.

In doing so, the journal will reach beyond the mass-production roots of Automation to address topics in biotechnology, pharmaceutical, and health; construction, transportation, and security; Manufacturing, maintenance, and supply chains; home, laboratory, and service; business and software; and food handling and processing.

A free preview of the first issue's contents is available online at <http://www.ieee.org/t-ase>. There, you'll find a copy of the journal's first editorial, plus the first page of each paper from the premier issue.

IEEE members are invited to become charter subscribers to T-ASE for \$15, or \$17 for print plus electronic access to the online version of the journal as soon as issues become available in IEEE Xplore®.

Members can also subscribe to the IEEE RAS Package. Receive both T-ASE and IEEE Transactions on Robotics for the combined price of \$25 -- or just \$29 for print and online access. Subscriptions can be added at <http://www.ieee.org/addservices> or <http://www.ieee.org/renew>.

For more information on IEEE Transactions on Automation Science and Engineering, visit <http://www.ieee.org/t-ase>.

Volunteers Needed!

The Central Virginia Section's Executive Committee is looking for individuals in the Charlottesville, Lynchburg, and Harrisonburg areas who would be willing to help us organize a technical or professional meeting or to serve on the Executive Committee. If you are willing or if you have any ideas for meeting topics, please contact one of the Section officers (see p. 2 for contact information).

Region 3 Employment Assistance

Region 3 now has a Employment Assistance web site located at <http://ewh.ieee.org/reg/3/ea>.



and information about companies that may be hiring. The site has been organized to promote job searching at both the local and national levels.

A key feature of the site is the availability of company contact information. The Company Database Request will provide information that can be used to find potential companies and make that first important contact.

The success of this site depends on input from IEEE members in Region 3. Please visit the site and submit your Employment Assistance links and help continue to improve this important member resource.



IEEE September 2004 to December 2004 Calendar of Events

- Monday September 20 - Wireless Sensor Networks, Jonathon's, 828 Main St., Lynchburg, VA (see p. 1)
- Tuesday October 19 - Use of Insulated Gate Bipolar Transistors in High Current Motor Control Applications - Room E-303 Thornton Hall, UVa, Charlottesville, VA (see p. 3)
- Tuesday November 16 - Plant tour of Electronic Design and Manufacturing, Inc. (EDM), Lynchburg, VA
- Tuesday December 7 - Holiday Social - McCormick Observatory, UVa, Charlottesville, VA, 7 PM to 10 PM

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