



IEEE

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Berbee Information Networks - The Converged Network: Tying Voice, Video, and Data Into A Single Network Infrastructure.



Date/Time: Thursday, September 15, 2005, 11:45 AM - 1:00 PM
Speaker: Eric Fairfield, Sales Engineer, Berbee Information Networks
Location: Rocky Rococo's Pizza, 7952 Tree Lane (Madison Beltline Hwy. at Mineral Pt. Rd.), 608.829.1444
Menu: Pizza buffet, salad and soft drinks (cost \$10.00, free for student members)
RSVP: by September 12th to Les Schroeder via email (l.schroeder@ieee.org) or call 608.444.9144

Non-member guests are always welcome!

Eric's topic will revolve around the "converged network". Essentially this means how Berbee has tied voice, video, and data into a single network infrastructure. During the discussion, he will go over various applications that have allowed business processes to change by using IP as the communications transport.

Eric Fairfield is a Sales Engineer for Berbee Information Networks. He has been in the computer networking industry for about 12 years. Over the years his experience has been in LAN/WAN design and integration. The past five years has included a shift to include VoIP telephony architectures implemented over the LAN and WAN. Since he has joined the Berbee team, they have implemented hundreds of VoIP solutions and have been recognized by Cisco as the Global IP Communications Partner of the year. What this means is that Cisco Systems has recognized Berbee as their key partner in the successful deployment and advancement of their VoIP product sets.

Berbee Information Networks Corporation is a privately-held company. Since Berbee's formation in 1993, we have become a proven partner to businesses in need of information technology solutions. Today, Berbee has grown to over \$225 million in revenue and more than 600 employees.

The entrepreneurial spirit and values on which Berbee was founded still guide us. We continue to set the standard for uncompromising customer support and technical leadership. Our partnerships with IBM, Cisco, and Microsoft provide our clients with category-leading platforms and products.

Whether it's hardware, software, networking, services, or support, we provide knowledge, skills and expertise through principled partnerships with our clients.

Find out more about Berbee at <http://www.berbee.com>.

A New Look

Craig Heilman, IEEE Madison Section Newsletter Editor

Some of you may have noticed that the IEEE Madison Section Newsletter has a slightly different look starting with this issue. For the past 6+ years, I had been using an application called Adobe FrameMaker for the Macintosh to produce the newsletter. Well, Adobe in their "infinite wisdom" has decided to drop support for the Macintosh version of FrameMaker. Updates to the application have been sporadic in recent years so it was probably only a matter of time before this happened. Even though there is a Windows version of FrameMaker and I have several PC's in addition to my Macs, those that know me, know that I only use the PCs when I absolutely have to (i.e. usually only when I'm running emulation systems for debugging embedded systems). I much prefer the Mac for most of my daily tasks such as email, writing, web browsing, code editing, etc. I have now made the jump to Adobe's flagship desktop publishing product, InDesign. Actually, I picked up the entire Adobe Creative Suite which includes Photoshop, Illustrator, GoLive, and Acrobat Professional in addition to InDesign. In order to get started using InDesign, I acquired a book called *Adobe InDesign CS one-on-one* by Deke McClelland (recommended) and spent many hours working through the tutorials. InDesign is a very powerful application for publishing but it is not quite as powerful for technical work as FrameMaker is. For example, FrameMaker has a full mathematical equation editor that can perform calculations—integrals?, matrix operations?—no problem! Of course I never used that feature much but it was nice to know it was available. I'm still learning about all the features of InDesign and what it's capable of but it will probably take awhile before I'm truly comfortable using it. I have taken this opportunity to update the format of the newsletter with a new layout, new fonts, etc. and it will probably still be changing over the next several months. If you have any comments or suggestions, let me know at cheilman@ieee.org.

Madison Section Member Awards

Congratulations are in order for two of our IEEE Madison Section members. Dr. Lawrence H. Landweber was awarded the 2005 IEEE Award in International Communication "for creating and enabling networking and Internet technologies to countries throughout the world." Dr. Thomas M. Jahns is the 2005 recipient of the IEEE Nikola Tesla Award for "outstanding contributions to the generation and utilization of electric power."

Lawrence H. Landweber

A Professor Emeritus at the Computer Science Department of the University of Wisconsin in Madison, Dr. Lawrence H. Landweber has made seminal contributions to the development of the Internet. During the 1970s, he began work on computer networks that would support global research and education, including TheoryNet, an email system for theoretical computer scientists, and CSNET, the first open network for all computer research groups in the United States.



From 1984 to 1989, he organized the Landweber Conferences which supported scientists striving to implement national academic and research networks in their countries. These workshops led to the emergence of an international academic Internet and the creation of INET, the first open, international conference to draw experts from government, industry and academia having technical, financial and policy expertise.

An IEEE Member, Dr. Landweber also is a founding member and former president and trustee of the Internet Society and a Fellow of the Association of Computer Machinery.

Thomas M. Jahns

Dr. Thomas M. Jahns, Grainger Professor of Power Electronics and Electrical Machines at the University of Wisconsin - Madison, has been a driving force behind the development of high-performance, permanent magnet (PM) synchronous machine drives, distinguished by magnets in their spinning rotors. Since early in his professional career at General Electric, Dr. Jahns has made important technical contributions leading to successful applications of PM drives in machine tools, home appliances, and aerospace actuators. Making use of these principles, all hybrid-electric passenger vehicles in high-volume commercial production today have adopted PM synchronous machines for their electric propulsion systems.



An IEEE Fellow, Dr. Jahns' many honors include the IEEE Power Electronics Society's William E. Newell Award. He has served as president of the IEEE Power Electronics Society and as Division II director on the IEEE Board of Directors. Both the IEEE Industry Applications Society and the IEEE Power Electronics Society have recognized him as a Distinguished Lecturer.

What Your Professors Might Not Have Told You About IP

by Glenn Tenney, CISSP CISM

Can you imagine receiving an electrical engineering degree and not knowing anything about Ohm's law? Or of receiving a computer science degree and not having had any computer programming classes? Yet, a basic part of almost every IEEE member's work often isn't taught in school. We create works, make inventions, design new chips, produce new consumer products, and write articles, all as part of what we do as engineers — all of these acts relate to intellectual property.

Because a large part of what we do professionally involves intellectual property (IP), it seems logical that learning about IP would be considered an important part of every engineer's education? But is it?

How much did your engineering program teach you about IP or agreements dealing with IP (e.g. your employment agreement)? Did any of your engineering courses cover IP legal basics?

Let's see what you know, or think that you know, about basic IP law as it applies to your engineering profession.

True or False: A copyright protects your idea.

False. A copyright only protects the expression of your idea and not the idea itself. A patent offers protection for ideas that are new, useful and not obvious. From the copyright law: "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." Generally, only a specific expression of an original work of authorship is protected. Copyrights, however, do afford protection for what's known as derivative works.

How long does a patent's protection last?

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A patent currently lasts for 20 years from the date of the first application for the patent. A copyright lasts for the author's life plus 70 years, while a copyright held by a corporation lasts for 95 years from its first publication or 120 years from its creation, whichever is less.

True or False: A copyright is only valid if a copyright notice is affixed to the work.

False. A copyright exists as soon as the work is "fixed in a tangible medium" (e.g. as soon as the work is printed), even if there is no copyright notice. Before 1989, in the United States, a registration was required in most situations. Today, registration is not required for protection, but when a copyright is registered, statutory damages as an alternative can be obtained in the event of a copyright infringement case.

True or False: Your boss should appear on a patent application as one of the inventors, even if he or she was not involved in actually creating the invention.

False. Only the people who actually invented the invention should be listed as inventors on a patent application. Listing other people, such as your boss, if they weren't actually the inventors could invalidate the entire patent.

True or False: A copyrighted description of a product protects your manufacturing rights.

False. The owner of a copyright has six exclusive rights: the right to reproduce the work, prepare derivative works, distribute copies, perform the work publicly, display the work publicly, and in the case of sound recordings to perform the work publicly by means of a digital audio transmission. Unless the copyrighted work would need to be reproduced, distributed, performed, or displayed as part of the manufacturing, a copyright would not protect manufacturing rights. Instead, a patent or licensing of a trade secret would be used to protect manufacturing rights, although in some circumstances registered trademarks may be useful to protect manufacturing rights.

True or False: The abstract of a patent tells you exactly what is protected.

False. A patent is composed of a title, a description, an abstract, and one or more claims. The claims define the scope of the invention that is being claimed for patent protection. Some people read the abstract and mistakenly believe that that's what's being protected. The abstract is usually written as part of the original application and is usually overbroad because it isn't changed when the claims are amended during patenting process.

True or False: Your employer owns everything you invent.

False. Without an employment agreement, your employer does not own everything you invent, especially when it's outside the scope of your work. With an employment agreement, you can agree that your employer owns much of what you invent, but many states limit such agreements to just the scope of your work or when you use your employer's resources. IEEE-USA's Intellectual Property Committee produced *Intellectual Property and the Employee Engineer*, a book detailing employment agreements.

This little quiz only touches on a very few points about IP that engineers who deal daily with IP often misunderstand or don't know. If you didn't know all of the answers, you're not alone — but you should consider finding out more about basic IP law, because it affects what



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- **Electrical Grounding of Communications Systems**
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For further information...

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you do almost every day.

If you're a student, seek out a course on the basics of IP law (especially one within your engineering program).

If you're on the faculty of a university, or if you recently graduated, IEEE-USA's Intellectual Property Committee would like to know if your university's engineering program includes courses on IP law. Please contact the IP Committee staff liaison Erica Wissolik at e.wissolik@ieee.org and let us know.

Glenn Tenney, CISSP CISM, is a former chair of IEEE-USA's Intellectual Property Committee, and is IEEE-USA's Career Policy editor. Comments may be submitted to todaysengineer@ieee.org.

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Leader Debunks Engineering "Shortage" Myth

In an 18 August 2005 letter to the editor of *The Washington Post*, IEEE-USA President Gerard A. Alphonse criticized a headline in the same day's *Post* column, "Behind the Shortfall of U.S. Scientists." According to Dr. Alphonse, "Just because China, India and other nations are graduating large and increasing numbers of scientists and engineers does not mean that there is a shortage of science and engineering professionals in the United States."

The IEEE-USA leader added: "For a true picture, look at the rising unemployment for U.S. scientists and engineers in recent years and the percentage of individuals trained in science and engineering who are working in other fields." He concluded: "Increasingly, we see compensation that is lagging behind other employment categories, job insecurity, rapid obsolescence due to technological change, and the looming threat of offshoring."

For information on media coverage of IEEE-USA's positions, prod-

ucts and services, go to "IEEE-USA in the News" at www.ieeeusa.org/communications/inthenews/default.asp. Or contact IEEE-USA Senior PR Coordinator Chris McManes at +1 202 785 0017, ext. 8356, or c.mcmanes@ieee.org.

IEEE-USA-Supported "Federal Patient Safety Act" Signed into Law

On 29 July, President Bush signed into law "The Patient Safety and Quality Improvement Act of 2005" that IEEE-USA supported. The law directs the federal government to establish a database network to hold data on medical errors voluntarily reported by health care providers and patient safety organizations. Ensuring anonymity by removing patient and provider identity information, patient safety advocates hope to spur the reporting of medical errors, and encourage a candid error analysis that will lead to developing effective solutions to avoid future mistakes.

IEEE-USA President Gerard Alphonse urged Congress to pass the bill in a 24 June letter to Senate Majority Leader Bill Frist (R-Tenn.). IEEE-USA has officially supported improving patient safety by reducing errors since issuing its June 2002 position statement, "Improving the Healthcare System Through The Use of Information Technologies."

You can view the position statement at: www.ieeeusa.org/policy/positions/healthcareinfotech.html.

The letter to Sen. Frist is available at www.ieeeusa.org/policy/policy/2005/062405.asp.



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