

Jobs and the IEEE Wescon Tutorial Program

Article by Walt Wipple, 2005 Chair, LA Council

Tutorials
Registration
Form – see
Last Sheet

The problem. For many years now, engineers' job prospects have been in the news -- salaries are down and job demands are up. Employers are deemphasizing education and demanding practical skills and recent experience. This is a fact of life.

The *de facto* tenure of engineering jobs has disappeared. Few engineers can expect to stay with a company long enough to progress very far or even qualify for a decent pension after a lifetime of work.

It is clear that an engineer today must make the most of the profession. Specialization today is very risky; diversification of vocation is essential to continued gainful employment. And education beyond a point is very little help. Employers and clients want people who can be immediately productive. This is especially true of contractors and consultants whose assignments are usually less than a year.

What to do? The answer is clear: enhance your education with a broad spectrum of practical skills that can immediately pay off. And keep your skills current via life-long learning; there are many solutions to match one's specific circumstances. With on-going professional renewal, one's employment prospects may resist the downward spiral of underemployment, lay-offs, and/or unemployment.

How to keep current. IEEE Region 6 is answering this need with a low cost set of up-to-date tutorial sessions at the IEEE Wescon event at the Santa Clara Convention Center, April 12-14. The intent of these sessions is to offer a series of related topics in each track that will emphasize practical knowledge and demonstrations of technologies that can be taken home and put to use immediately. These will be based upon how-to's that are required in industry today.

Tutorial Sessions. The tutorial sessions and tracks are listed in the pages following. Inspect them carefully for the how-to's that will provide practical knowledge to supplement your education and experience. To help keep costs low, discounts are provided for IEEE members and for those who register early. To help us in session planning, please register early to guarantee a seat and help insure that the sessions you are interested in will actually be available.

Low Cost. Since you may not have the luxury of employer reimbursement, we have kept the costs low – especially for members and advanced registration. **Register early to save money!**

Registration. Registration can be for individual sessions or for the entire three-day track for a slight increase in per-session cost. In the latter case it is suggested that you indicate those that most interest you in each time slot.

Important. Timing is tight and you need to take action now. Advance registration must be received by **March 11**. With postal delays, there is no time to lose. Do it now.

Refunds. In the event a session must be cancelled, you will have the choice of a full refund for that session or a credit toward any other tutorial session in the program. But, we will depend on the advance registration and cannot provide a refund for your own cancellation. Additional registration details are on the registration form shown later in this issue.

[Ed.] These tutorials are supplemented by seminars and short courses on additional technical topics, to bring you current information in state-of-the-art fields. For a profile of these other courses during Wescon Week, please click:

www.e-grid.net/docs/wescon05.pdf (280 kB PDF)

IEEE Region 6 Tutorials at Wescon
Santa Clara Convention Center
April 12-14, 2005

Preregistration material appears on this and the following pages for the IEEE Region 6 Tutorials at Wescon in the Santa Clara Convention Center. For other seminars and short courses, see

www.e-grid.net/docs/wescon05.pdf

Abstracts for the tutorial sessions are included where they have been provided by the speakers. Please download this PDF again after March 15th for a more complete set of tutorial Abstracts.

The track layout on Pages 8-12 helps you select the sessions of interest. Ten tracks gather related sessions together; study the one(s) that would be most helpful to you and your career. One or more time slots make up a session for which one may register. Because of dependencies and space limitations, attendees should attend all the time slots for each session rather than selecting individual time slots.

Finally, the pre-registration form appears on Page 13. It must be received with a check for payment by March 11 for early registration pricing (and by March 25, for regular pricing); please allow time for mail delivery. You will be notified if your registration is received late and given the opportunity to apply your registration toward regular registration.

Abstracts *(rev. 4+)*

**A1-2. Walt Whipple, Wingineering, LLC,
Getting Started with Windows development
in .Net**

The emphasis will be on practical knowledge that can be taken to the attendees employer and put to use to test software and hardware systems while keeping the complexity of scripts manageable.

The material will be presented with a live demonstration of the principles and procedures projected upon the screen.

Dr. Whipple is self-employed as a sub-contractor taking temporary assignments in widely different environments including many different aspects of software development. His 40+ years of experience involves multiple windows development projects.

**A3-4. Brad Rogers, Introduction to Visual
Basic .net**

Topics covered include the changes from VB5/6 to VB7, and the steep learning curve that many developers encounter in the first week. The use of Object Oriented programming is presented in such a way that developers will appreciate and prefer the dotnet approach. There are several popular commands that are not supported in VB.net, these are examined with workarounds presented. Other topics include the methods one would use to migrate to VB.net

**A8-9. Brad Rogers, Introduction to C Sharp
dotnet**

The New C# programming language is explored and presented for developers to gain a fast and comfortable ability to begin using this very popular new language, that mixes C, C++ and visual basic. Why use any other language? That question is answered. The C# IDE is very flexible and simple to use, without some of the cumbersome grammar of C or C++. There are numerous helpful websites and 3rd party vendors ready to assist. The C# beta edition is free for download from Microsoft. Attendees will gain an understanding of the dotnet CLR, the advantages of object oriented programming, and the ease of use of C# to be able to start and design applications today.

**B3-4. John Blyler, Portland State Univ, Systems
Engineering Dept. / Chip Design magazine, Risk
Analysis and Reduction for Hardware/Software
Systems**

Successfully engineering of complex SoC/embedded/PCB hardware-software products requires the ability to make good technical decisions. But most decision-making courses tend to focus on the programmatic issues of cost and schedule while excluding the equally important technical issues. Therefore, this course will present risk techniques and tools aimed at helping the working engineer make crucial technical decisions. Coverage will include both system architect, design and test issues. Participants will learn how to identify, assess, mitigate and monitor technical risks in the design of hardware-software systems. A case study featuring the design of a wireless system (no special knowledge required) will be used to illustrate the important risk techniques covered in the lecture. No special knowledge of systems engineering is presumed.

Ba. Walt Whipple, Walt Whipple, Wingineering, LLC, Introduction to Visual Source Safe for Parallel SW Development

Microsoft's Visual Source Safe (VSS) is a complete software configuration program. However, its use is complicated by ambiguity in its user interface and the lack of specificity in available user documentation. This leads to errors in its application that can have disastrous effects upon a development organization.

This seminar will introduce the elements of the user interface, define their meaning, and demonstrate their application to software projects in the VSS database. This will include subprojects vs. subdirectories, shares, links, paths, pins, check-in/out, get latest, merges, and labels as well as some of the pitfalls.

Usage in serial and parallel development will be explained and demonstrated as a lead-up to specific procedures for checking out and in, getting code, and merges up and down the tree. Organization to facilitate merges to multiple development branches will be shown.

The focus of the presentation is on development organizations ranging from single user up to networked parallel development limited primarily by network performance while allowing predictable regression testing and disciplined releases inside and outside the organization.

The principles presented will be applicable to other software configuration management (SCM) environments that differ in syntax from VSS. The material will be presented with a live demonstration of the principles and procedures projected upon the screen.

Dr. Whipple is employed as a sub-contractor taking temporary assignments in widely different environments which currently happens to involve development with Visual Source Safe. His 40+ years of experience includes development with multiple SCM tools, mostly with the c and C++ languages.

Bb-d. Walt Whipple, Wingineering, LLC, Introduction to C/C++ DLL and VB ActiveX Wrapper Development for Testing

Windows Script Host (WSH) is the Microsoft Windows engine for running Visual Basic Scripts. Useful in its own right, it becomes more powerful with the addition of XML, ActiveX, Visual Basic, Visual C/C++, and DLLs.

A familiarity with C, C++, and Basic is assumed although sufficient explanation will be provided to understand the examples without delving deeply into the languages. The presentation will emphasize the differences between Visual Basic and Visual Basic Script and between Visual Basic and Visual C/C++ to motivate some of the approaches needed.

The presentation and live demonstration will cover marshalling of values between the languages, the inclusion of functions/subs/globals from separate VBS files and the running of independent scripts from a master script while preserving the capability of the scripts to be run standalone. Useful objects in the script environment will be covered to report system and file information; even SCM info can be reported on the files reflecting version information about check-in of files by the SCM system.

The emphasis will be on practical knowledge that can be taken to the attendees employer and put to use to test software and hardware systems while keeping the complexity of scripts manageable.

The material will be presented with a live demonstration of the principles and procedures projected upon the screen.

Dr. Whipple is employed as a contractor taking temporary assignments in widely different environments which currently happens to involve development with Windows Script Host to test and develop embedded firmware. His 40+ years of experience involves multiple script and interpretive languages both commercially available and developed by him.

C5-6. B. K. Richard, Bishop Peak Group, Sustainable Energy Future

An overview of energy policy from an engineering point of view. This session is intended more to challenge thinking than to teach methodology.

C7-a. Greg Hutchins, Quality Plus Engineering, Risk Management (Sarbanes/ Oxley Act)

An abstract was not available at press time.

Cb-c. Joe Weiss, Kema, Inc., Control System Cyber Security (SCADA and PC)

An abstract was not available at press time.

D4-7. Walt Whipple, Wingineering, LLC, Job Shopping for Fun and Profit.

Job shopping is distinguished from consulting and permanent employment. Specialized terms used by job shoppers are introduced as a basis for discussion.

An organized approach to job shopping is necessary to manage frequent changes of assignments. The session covers marketing, selling, and executing assignments with specific groundrules and expectations at each step.

Since many assignments are away from home territory, the handling of expenses within IRS regulations is a necessary skill. Specific references to the required data are provided.

Questions such as “Should I quit a perfectly good job to pursue high-paying, but potentially risky assignments”, if not answered, will be explored.

This tutorial will not seek to persuade attendees to take up job shopping but will present material needed to make an informed decision.

Dr. Whipple is employed as a sub-contractor taking temporary assignments in widely different environments. His 40+ years of experience includes development of systems and software for aerospace and commercial clients as an employee, contractor, and consultant.

Db-d. Gary Hinkle, Auxilium, Inc., Professional Development and Consulting, Leadership Skills for Engineers

This tutorial teaches skills needed to lead projects, drive innovation, and influence others in an engineering role. Attendees learn the difference between leadership and management and how to develop specific leadership and management skills that are important to ALL engineers. The most important leadership traits that apply to engineering responsibilities are emphasized. Participants engage in exercises that assess their individual leadership ability and provide guidance for further skill development.

E1-9. D.G. Aviv, ARC, Inc., Laser Space Communications

The development of laser space communication components, subsystems and integration with spatial, airborne ground based platforms, are now reaching the feasibility stage and in consequence: applications of laser space communication for needs of NASA, Commerce and Defense are likely to be actualized within the next 5 – 10 years. Because of this new communication environment we have prepared a course that will enable the engineer to evaluate the performance of cross-links between articulating satellites and also between the satellite and a ground station and from the ground station to the satellite.

We show how to calculate the (Optical) Power Budgets for the links and their associated BER (Bit Error Rate) for various modulation schemes, for the inter-satellite links, synchronous to synchronous and LAS (Low Altitude Satellite) to synchronous. Methods of evaluation of the downlinks/uplinks communication performance, between a spatial platform to a ground station, and the uplink from the ground station back to the platform, which requires penetration of the turbulence and weather avoidance will also be presented.

Direct Detection and Heterodyne Detection receivers will be compared and the noise components associated with each, will be identified. Sun, Moon, other sky noise and earthshine will also be evaluated, and techniques for reducing their

impact will be described. The key aspects of the ATP (Acquisition Tracking and Pointing) will be described and methods of taking out the satellite vibrations means of inertial instruments will be analyzed. Equations showing how the BER is reduced as a function of vibrations' amplitude and frequency will be described and calculations made.

The features of the Adaptive Antenna commonly used in Ground Stations design, will be discussed and design equations presented, together with star reference and more advanced reference generation. Also covered will be the potential use of passive structures in space and in order to reflect laser communication signals.

Specific examples of laser systems architecture will be given, in order to shape the presented concepts into useful and practical tools for assessment and evaluation of the extremely wide band communications.

Although the track is interdependent, attendees may select specific sessions of interest. Sessions E1 and E2 provide a common background that most attendees should include.

F1. Paul Kostek, Personal Positioning

Personal Positioning for Engineers is a how-to guide for engineers and high tech professionals to determine what they should be doing with their careers. In this seminar you will have the opportunity to learn about the employment and career options for engineers and explore whether the direction you are pursuing, or interested in pursuing, is the right fit for you. New grad or senior engineer this workshop can help you to find the position that will provide you with personal and professional satisfaction.

Paul J. Kostek is a Senior Systems Engineer with the Boeing Company. He is also the Principal of Air Direct Solutions, a systems engineering/project management consulting firm. He works with companies in defining system architecture and design, system requirements, and software development standards. Paul received his B.S.EE from the University of Massachusetts, Dartmouth, in 1979. Paul started the AIAA career workshop held annually (since 1997) at the Aerospace Sciences meeting. And is also a distinguished lecturer on career issues for the AIAA. Paul has written on career issues for such publications as: Today's Engineer, Dr. Dobbs, Puget Sound Business Journal, and Wireless Systems Design. Paul is the VP Conferences for the IEEE Intelligent Transportation Systems Council. He was the 2003 Chairman of the American Association of Engineering Societies. In 1999 Paul was the President of IEEE-USA, and a member of the IEEE Board of Directors. He has also served as President of the IEEE Aerospace & Electronics Systems Society and was a director of the Washington Aerospace Alliance (PNAA.net). He was also the 2002 President of the Seattle Metro Chapter of INCOSE. Paul will be the Chair of the 2006 IEEE/AIAA Digital Avionics Systems Conference. Paul is a Senior Member of the IEEE, the American Institute of Aeronautics and Astronautics, the International Council on Systems Engineering, SAE, and the Project Management Institute.

F2. Orin Laney, What Every Engineer Should Know about IP

An abstract was not available at press time.

F3. Cay Humphries, Creative Job Search for a Changing Economy

Noted speaker Cay Humphries will discuss how to improve your networking and job search skills. Explore creative and collaborative networking techniques and refine your 30-second commercial. Be ready to jump into activities and leave with a new outlook on how to present yourself and get results! Bio Cay Humphries has earned her Master's Degree in Communication while specializing in training and organizational development. She has worked with small to large business, coaches individuals and is a published author. She has taught for several colleges, facilitates seminars and performs keynote speeches. Cay has a motivating style of presentation so come ready to jump in and enjoy the activities.

F9. Ken Doniger, Interviewing

This tutorial consists of two parts. One part covers interview preparation and the second part deals with the actual interview.

Preparation is 90% of a successful interview. Topics covered in this part of the talk include: the different interview types, self assessment, company research, how to answer negative questions such as "What is your greatest weakness?"

The second half of the presentation discusses the actual interview. We will cover how to dress, how to behave, what topics to avoid, how to get through the first few minutes, what questions to ask your interviewers, and how to follow up.

Audience participation is strongly encouraged. More is learned from sharing experiences than from a single lecturer.

The presenter has been an IEEE volunteer for several decades, first as a section PACE chair and then as a member of the IEEE-USA Employment and Career Services Committee.

Over the past 20 years, Ken has worked at four companies in Silicon Valley and now works for Abbott Laboratories, a maker of medical devices and other medical products.

He has been interested in employment and career issues for a long time because he actually has a career and doesn't know quite how that happened.

G5-6. Brad Rogers, Zigbee: Wireless control that simply works

The ZigBee Alliance provides a standardized base set of solutions for sensor and control systems. It uses CSMA-CD

with a 64 bit IEEE device address, is geared for small low power applications like keyless entry or small sensors. Designers looking for a more simple and low cost wireless solution without the complexity and overhead of Bluetooth Will find an excellent solution in Zigbee.

This presentation will cover the Zigbee Alliance, An Organization with a mission to define reliable, cost-effective, low-power, wirelessly networked, monitoring and control products based on an open global standard, current status, and how to get involved. It will also cover the specifications, applications, tools, vendors and contact information so developers can begin designing low cost and robust wireless solutions today.

Gb. Jarek Kaczynski, Aldec Corp., System C

An abstract was not available at press time.

Gd, Murray Rubens, Ruben Eengineering, HDL

An abstract was not available at press time.

H1-4, 6-8, b-d. Maurice Sharp, Fundamentals of Communications and Coordination

An abstract was not available at press time. See the track schedule for topics and prerequisites for each session.

I6. Bruce Perens, The Emerging Economic Paradigm of Open Source

Open Source developers have, perhaps without conscious intent, created a new and surprisingly successful economic paradigm for the production of software. Examining that paradigm can answer a number of important questions.

It's not immediately obvious how Open Source works economically. Probably the worst consequence of this lack of understanding is that many people don't understand how Open Source could be economically sustainable, and some may even feel that its potential negative effect upon the proprietary software industry is an overall economic detriment. Fortunately, if you look more deeply into the economic function of software in general, it's easy to establish that Open Source is both sustainable and of tremendous benefit to the overall economy.

Bruce Perens is a leader in the Free Software and Open Source community. He is creator of the [Open Source Definition](#), the manifesto of the Open Source movement in Software. He's founder or co-founder of the [Open Source Initiative](#), The [Linux Standard Base](#), [Software in the Public Interest](#), and [No-Code International](#). Perens released his first Free Software program, *Electric Fence*, in 1987. He is creator of [Busybox](#), which has spawned its own development community and is part of most commercial devices using embedded Linux.

Perens is series editor of the [Bruce Perens' Open Source Series](#)

line of books with Prentice Hall PTR publishers. The books sell well in retail stores, even though their texts are released under an Open Source license. Perens is Senior Research Scientist for Open Source with George Washington University's [Cyber Security Policy Research Institute](#). Through his own research organization, Perens has a \$50,000/year grant to work 1/4 time on the patent policy issues of standards organizations. He is an elected director of Software in the Public Interest, Inc.

Perens previously spent two years with HP as Senior Global Strategist for Linux and Open Source, and was president of Linux Capital Group, a venture fund that specialized in Linux.

Perens spent 20 years in the computer graphic animation industry, 12 of them at [Pixar Animation Studios](#). He has a credit on the films *A Bug's Life* and *Toy Story II*.

17. Andrew Aikens, **How Open Source is Transforming the Business of Technology**

Today open source is impacting all areas of technology, but most importantly it is impacting the business value of technology and those firms that supply proprietary and open source solutions, and how end users procure, implement, and use those solutions.

This presentation will provide an overview of the current state of open source; we will address adoption trends, economic forces impacting the technology supplier eco-system, and legal issues. We will touch upon entrepreneurial and start up opportunities, how to get started in, and engage with the open source community and identify key success factors.

Andrew Aitken is Founder and Managing Partner of Olliance Group, an independent, open source strategy-consulting firm, offering education, business strategy, and technology planning services. Andrew has over 18 years senior management experience building and leading national professional services companies. Prior to founding Olliance, Andrew held positions as VP of Business Development, Corporate Strategy, and Marketing, with various national technology services providers, including Renaissance Worldwide and eWork. In 2001 Andrew founded Olliance Group with other industry veterans, to provide management and business strategy consulting to companies leveraging open source. Andrew is a frequent speaker on the topic of open source. He has chaired and spoken internationally at multiple industry and government conferences, is a member of Open Source Software Institute's Board of Directors, SDForum's Board of Advisors for Open Source, Chair for their Open Source Conference and on the Board of Advisors for SugarCRM. Andrew has personally worked with companies such as: Sun Microsystems, IBM, Sun, Nokia, HP, and others, assisting them with developing their open source strategies.

18. Rick Munden and Stephan Rosner, **Open Source Hardware Design**

Free Models: What are they? How are they used? How can they be free?

The Free Model Foundry provides VHDL and Verilog component models to the electronics industry. This presentation will explain what makes these models ideal for board-level verification and how to use them. It will also explain the FMF business model and how FMF can provide these models to end users without cost or restrictions.

Richard Munden has been using and managing CAE systems since 1987. He has been concerned with simulation and modeling issues for as long.

Richard co-founded the Free Model Foundry (<http://eda.org/fmf/>) in 1995 and is its president and CEO. He has a day job as CAE/PCB manager at Siemens Ultrasound (previously Acuson Corp) in Mountain View, CA. Prior to joining Acuson, he was a CAE manager at TRW in Redondo Beach, CA. He is a well known contributor to several EDA users groups and industry conferences.

His primary focus over the years has been verification of board-level designs.

Open Source Memory Models

Over the past years a large variety of memory interfaces and controllers has evolved in the industry that is being used in increasingly complex system designs. The memory system is typically one of the most critical parts in a system because it is a key contributor to performance and cost. This is true especially for embedded systems such as cell phones. Therefore, correct modeling of the memory system is crucial to successfully accomplish design goals and minimize debug time in those systems. This implies to model memory system as early as possible i.e. in early architectural stages and with the accuracy needed. For analysis and debug at that stage models are ideally available as open source code e.g. for analysing what-if -scenarios for combining MCPs.

This presentation discusses the Spansion approach to Open Source Models and their support. It focuses on design and verification methodology to show how reliability (accuracy, low risk of bugs) of the Spansion models is achieved. It discusses the features of the Spansion Models and includes a demonstration of where to download models from as well as how to integrate them in system level simulations.

Stephan Rosner is a Hardware Systems Engineer at Spansion LLC. He is developing open source models for memory interfaces and controllers.

19. Stephen Williams and Brien Anderson, **Open Source EDA Tools**

Icarus Verilog in Mixed Vendor Environments - Stephen Williams

In real design work, no tool is an island, whether open source or proprietary. A software tool that performs its specialized task is only useful if it fits into an overall design flow that includes tools from diverse sources and vendors. "Fitting in" can mean, for example, sharing input (such as Verilog synthesizers and simulators), generating data for each other (simulator and wave form viewer) or directly cooperating (Verilog simulator w/ C-coded test benches.)

This presentation will show how the open source Verilog compiler Icarus Verilog has fit into mixed vendor environments. Some case studies are given that show how the various tools cooperate in the overall design process.

Stephen Williams is the author of Icarus Verilog, an open-source Verilog compiler. Williams is a software engineer specializing in embedded software/drivers for Picture Elements, Inc. in Berkeley, California. Williams got lost one day in the computer lab at his local university. He was an electrical engineering student but emerged with a degree in computer science instead. Ten years later, after working on various software projects, especially large and highly distributed systems, he found himself tangled in the wires of high-speed digital cameras. Since then, he has tied those experiences together, working on device drivers, embedded systems and EDA tools.

Open Tools in the Design Process – Brien Anderson

This presentation will cover use of open EDA tools in developing design from schematic to board and back again. We will discuss going from FPGA, ASIC etc to a schematic and then to PCB board and back again. The target is a commercial EDA toolset such as Cadence. The ASCII files and Perl scripts used to interface from the open EDA tools to the commercial toolset and back will be described.

Brien Anderson is a design engineer with Acuson (division of Siemens Medical).

J1-3. Dr. Robert Stewart, University of Strathclyde , **DSP for FPGAs**

An abstract was not available at press time.

Dr Bob Stewart is currently faculty in the Department of Electronic and Electrical Engineering at the University of Strathclyde, UK. Prior to joining University of Strathclyde, Dr Stewart was a visiting Professor in Department of Electrical Engineering at the University of Minnesota in 1990, and a visiting scholar at the University of Southern California in 1986/7. More recently in 1997/98 he was appointed a part-time Visiting Professor at the University of California, Los Angeles. In 1999 Bob worked on a Royal Academy of Engineering Industrial Secondment scheme with Entegra Ltd, and its customers.

Bob Stewart's general research interests are in the areas of adaptive signal processing and digital communications, particularly 3G DSP strategies. Current research projects in Dr Stewart's research group include work on adaptive channel equalisation, adaptive receiver techniques for multi-user communications (CDMA), oversampling strategies for sigma delta ASICs, sub-band strategies for acoustic echo control, multimedia integration of DSP educational tools and LPC strategies for speech coding. Dr Stewart's current work is funded by a number of companies and agencies including the Engineering and Physical Sciences Research Council and Motorola. Dr Stewart has consulted on digital signal processing to companies including British Telecom, Motorola, Ericsson, GEC-Plessey Telecommunications, Lucent, Marconi Instruments, Racal, the BBC, Robert Bosch and a number of DSP technology start-up companies.

Bob Stewart is also the presenter of the European DSP Foundation Course which, since its inception in 1994, has been presented to more than 900 attendees in Europe and the USA. Over the last 10 years Dr Stewart has published more than 130 technical papers, one textbook and is the author and designer of the DSPedia CDROM, and of the CompanionCD for the textbook Digital Communications by Bernard Sklar (Prentice Hall, 2001). Dr Stewart is a Chartered Engineer, and a member of the IEEE and the IEE. He is also a member of the EURASIP ADCOM committee.

J4. Dr. Robert Stewart, University of Strathclyde , **WiMax**

An abstract was not available at press time.
Please see bio above.

J5. Dr. Robert Stewart, University of Strathclyde , **Ultra Wideband**

An abstract was not available at press time.
Please see bio above.

J7-a. Robert Bartz, NTEC, **Wireless Lans**

An abstract was not available at press time.

Jc-d. Sam Patadia, eSmart Source, Inc., **RFID Workshop**

RFID Workshop is half-day program that helps answer basic questions about Radio Frequency Identification (RFID) technology, standards, hardware, software and the various applications available in the market today. It will help you understand the latest technology trend, the business cases, and the standard development.

Audience: Anyone with a desire to learn the basics about RFID.

(See also the half-day seminar on **Packaging and Manufacturing of RFID Technology** on Wednesday afternoon at Wescon. [LINK](#))

Attendees typically include:

Systems Architects, Application Architect, Systems Engineers , Applications Engineers , Hardware Engineers ,Software Engineers, Solution providers, Packaging Engineers, Distributors, Supply Chain Consultants, RFID evangelists, Project Managers, Managers, Group Managers, Vice Presidents, Executives and anyone else interested in what the experts are predicting for this exciting technology and how RFID will affect their enterprise.

Sam Patadia is senior information technology professional with over 25 years experience as project manager, software architect, systems engineer, instructor, and trainer in RFID application integration, software design and development, middleware, and data acquisition and control systems.

Sam has taught several short courses in RFID technology at places like Mitre Institute, National Institute of Standards and Technology, Software Development Forum, San Jose State University, and the Singapore Manufacturer's Federation.

He holds a bachelor's degree in Mechanical Engineering from University of North Carolina and a Master's degree in Computer Aided Engineering from the same.

He lives with his family in San Jose, California. He enjoys visiting and photographing places with rocks, water, and trees.

Track title	A. Microsoft .Net Development	B. Software Development Process
Organizer	Brad Rogers	Walt Whipple, Wingineering, LLC
Tuesday, April 12		
8:30 a.m.-10:15 a.m.	A1. Walt Whipple, Wingineering, LLC, Getting Started with Windows development in .Net	
10:45 a.m.-12:15 p.m.	A2. Continuation of A1	
1:30 p.m.-3:15 p.m.	A3. Brad Rogers, Electronic Spin, Introduction to Visual Basic .net	B3. John Blyler, Portland State Univ, Systems Engineering Dept. / Chip Design magazine, Risk Analysis and Reduction for Hardware/Software Systems
3:30 p.m.-5:15 p.m.	A4. Continuation of A3.	B4. Continuation of B3
7:030 p.m.-8:45 p.m.		
Wednesday, April 13		
8:30 a.m.-10:15 a.m.		
10:45 a.m.-12:15 p.m.		
1:30 p.m.-3:15 p.m.	A8. Brad Rogers, Electronic Spin , Introduction to C Sharp dotnet	
3:30 p.m.-5:15 p.m.	A9. Continuation of A8.	
7:030 p.m.-8:45 p.m.		Ba. Walt Whipple, Walt Whipple, Wingineering, LLC, Introduction to Visual Source Safe for Parallel SW Development
Thursday, April 14		
8:30 a.m.-10:15 a.m.		Bb. Walt Whipple, Wingineering, LLC, Introduction to C/C++ DLL, VB ActiveX Wrapper, and VBScript with XML Development for Testing
10:45 a.m.-12:15 p.m.		Bc. Continuation of Bb.
1:30 p.m.-3:15 p.m.		Bd. Continuation of Bc.

Track title	C Policy Concerns	D. Professional Activities
Organizer	Dave Perry	Art Sutton
Tuesday, April 12		
Track title		
Organizer		
Tuesday, April 12		
8:30 a.m.-10:15 a.m.		
10:45 a.m.-12:15 p.m.		
1:30 p.m.-3:15 p.m.		
3:30 p.m.-5:15 p.m.		D4. Walt Whipple, Wingineering, LLC, Job Shopping for Fun and Profit.
7:030 p.m.-8:45 p.m.	C5 B. K. Richard, Bishop Peak Group, Sustainable Energy Future	D5. Continuation of D4
Wednesday, April 13		
8:30 a.m.-10:15 a.m.	C6 Continuation of C5	D6. Continuation of D5
10:45 a.m.-12:15 p.m.	C7 Greg Hutchins, Quality Plus Engineering, Risk Management (Sarbanes/ Oxley Act)	D7. Continuation of D6
1:30 p.m.-3:15 p.m.	C8 Continuation of C7	
3:30 p.m.-5:15 p.m.	C9 Continuation of C8	
7:030 p.m.-8:45 p.m.	Ca Continuation of C9	
Thursday, April 14		
8:30 a.m.-10:15 a.m.	Cb Joe Weiss, Kema, Inc., Control System Cyber Security (SCADA and PC)	Db. Gary Hinkle, Auxilium, Inc., Professional Development and Consulting, Leadership Skills for Engineers
10:45 a.m.-12:15 p.m.	Cc Continuation of Cb.	Dc. Continuation of Da.
1:30 p.m.-3:15 p.m.		Dd. Continuation of Db.

Track title	E. Laser Space Communications	F. Career & Employment Resources
Organizer	D.G. Aviv	Paul Kostek, Boeing
Tuesday, April 12		
8:30 a.m.-10:15 a.m.	E1. D.G. Aviv, ARC, Inc., Overview of Laser Space Communications.	F1. Paul Kostek, Personal Positioning
10:45 a.m.-12:15 p.m.	E2. D.G. Aviv, ARC, Inc., Block Diagram Vview of Laser Space Communi-cations Systems.	F2. Orin Laney, What Every Engineer Should Know about IP
1:30 p.m.-3:15 p.m.	E3. D.G. Aviv, ARC, Inc., Calculating the Optical Signal Power Budget	F3. Cay Humphries, Creative Job Search for a Changing Economy
3:30 p.m.-5:15 p.m.	E4. D.G. Aviv, ARC, Inc., Modulation Schemes for Laser Space Communications Systems.	
7:030 p.m.-8:45 p.m.	E5. D.G. Aviv, ARC, Inc., Acquisition, Tracking, and Pointing in Laser Space Communications Systems.	
Wednesday, April 13		
8:30 a.m.-10:15 a.m.	E6. D.G. Aviv, ARC, Inc., Atmospheric Penetration for Laser Space Communications Systems.	
10:45 a.m.-12:15 p.m.	E7. D.G. Aviv, ARC, Inc., Selection of Ground Systems for Laser Space Communications Systems.	
1:30 p.m.-3:15 p.m.	E8. D.G. Aviv, ARC, Inc., Low Altitude Satellites as a Potential Wireless/ Internet Type System	
3:30 p.m.-5:15 p.m.	E9. D.G. Aviv, ARC, Inc., Description of the 5-GENIN (5-th Generation Internet) System	F9. Ken Doniger, Interviewing
7:030 p.m.-8:45 p.m.		
Thursday, April 14		
8:30 a.m.-10:15 a.m.		
10:45 a.m.-12:15 p.m.		
1:30 p.m.-3:15 p.m.		

Track title	G. Hardware Design	H. Fundamentals of Communications and Coordination
Organizer		Maurice Sharp
Tuesday, April 12		
8:30 a.m.-10:15 a.m.		H1. Basics of Effective Coordination.
10:45 a.m.-12:15 p.m.		H2. Effective Requests Prerequisite: H1
1:30 p.m.-3:15 p.m.		H3. Continuation of H2
3:30 p.m.-5:15 p.m.		H4. Learning from Mistakes Prerequisite: H3
7:030 p.m.-8:45 p.m.	G5. Brad Rogers, Electronic Spin , Zigbee, Wireless Control that Simply Works	
Wednesday, April 13		
8:30 a.m.-10:15 a.m.	G6. Continuation of G5.	H6. Producing Satisfaction in Others Prerequisite: H3
10:45 a.m.-12:15 p.m.		H7. Integrating the Basics of Coordination Prerequisite: H1 and H2, 3, 4, or 5.
1:30 p.m.-3:15 p.m.		H8. An Introduction to Advanced Coordination Concepts. Prerequisite: H6
3:30 p.m.-5:15 p.m.		
7:30 p.m.-8:45 p.m.		
Thursday, April 14		
8:30 a.m.-10:15 a.m.	Gb. Jarek Kaczynski, Aldec Corp., System C	Hb. Handling Conflict Prerequisite: H8
10:45 a.m.-12:15 p.m.		Hc. Continuation of Hb.
1:30 p.m.-3:15 p.m.	Gd Murray Rubens, Ruben Engineering, HDL	Hd. Putting it all Together Prerequisite: H8

Track title	I. Open Source Designs	J. RF Systems
Organizer	Ed Perkins	
Tuesday, April 12		
8:30 a.m.-10:15 a.m.		J1. Robert Stewart, DSP for FPGAs
10:30 a.m.-12:15 p.m.		J2. Continuation of J1
1:30 p.m.-3:15 p.m.		J3. Continuation of J2
3:30 p.m.-5:15 p.m.		J4. WiMax
7:030 p.m.-8:45 p.m.		J5. Ultra Wideband
Wednesday, April 13		
8:30 a.m.-10:15 a.m.	I6. Bruce Perens, The Emerging Economic Paradigm of Open Source	
10:30 a.m.-12:15 p.m.	I7. Andrew Aikens, How Open Source is Transforming the Business of Technology	J7. Robert Bartz, NTEC, Wireless Lans
1:30 p.m.-3:15 p.m.	I8. Open Source Hardware Design: Rick Munden Free Models: What are they? How are they used? How can they be free? and Stephan Rosner, Open Source Memory Models	J8. Continuation of J7
3:30 p.m.-5:15 p.m.	I9. Stephen Williams and Brien Anderson, Open Source EDA Tools	J9. Continuation of J8
7:030 p.m.-8:45 p.m.		Ja. Continuation of J9
Thursday, April 14		
8:30 a.m.-10:15 a.m.		
10:30 a.m.-12:15 p.m.		Jc. Sam Patadia, eSmart Source, Inc., RFID Workshop
1:30 p.m.-3:15 p.m.		Jd. Continuation of Jc.

IEEE Wescon Tutorial Program Registration Form
Santa Clara Convention Center
 April 12—14, 2005

SFBAC GRID version D 3/6/05
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For IEEE members, please place your current membership card here and copy it with the form to register. If you cannot find your card, please fill in the following information and bring it to the tutorial. Student non-members, please copy your student ID card here.

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Please indicate the track letter for each time period below for which you wish to register. Include all time slots for each session for which you are registering.

Tuesday, April 12

8:30 a.m.—10:15 a.m. _____ 1 10:45 a.m.—12:15 p.m. _____ 2
 1:30 p.m.—3:15 p.m. _____ 3 3:30 p.m.—5:15 p.m. _____ 4
 7:00 p.m.—8:45 p.m. _____ 5

Wednesday, April 13

8:30 a.m.—10:15 a.m. _____ 6 10:45 a.m.—12:15 p.m. _____ 7
 1:30 p.m.—3:15 p.m. _____ 8 3:30 p.m.—5:15 p.m. _____ 9
 7:00 p.m.—8:45 p.m. _____ a

Thursday, April 14

8:30 a.m.—10:15 a.m. _____ b 10:45 a.m.—12:15 p.m. _____ c
 1:30 p.m.—3:15 p.m. _____ d

Total time slots: _____
 Price per time slots: \$ _____

Total amount to pay: \$ _____

Universal Pass: \$ _____

Price per 105 minute time slot

	Early	Regular	Late
Non-member	\$37.50	\$50.00	\$75.00
IEEE Member	\$22.50	\$30.00	\$45.00
Student non-member	\$18.75	\$25.00	\$37.50
IEEE Student member	\$11.25	\$15.00	\$22.50

Price for universal pass to all sessions

	Early	Regular	Late
Non-member	\$562.50	\$750.00	\$1,125.00
IEEE Member	\$337.50	\$450.00	\$675.00
Student non-member	\$281.25	\$375.00	\$562.50
IEEE Student member	\$168.75	\$225.00	\$337.50

1. If you register for a universal pass, please indicate the time slots that most interest you although you may attend any sessions you wish. This will allow us to consider your registration in the go/no go decision on sessions.
2. **Registrations must be received with payment: Early by March 11, Regular by March 25, Late by April 8 or at the show.**
3. If a session must be cancelled, a full refund for that session will be offered. Registrants will be notified via email in that event. Other choices will be offered. Payment of refunds will be delayed to allow checks to clear.
4. No refund will be available for cancelled registrations although a request to change sessions will be considered if the change is favorable considering the numbers of registrations.
5. No arrangements to accept credit cards have been made. Purchase orders will not be accepted without payment.
6. Currently there is no provision for awarding Continuing Education Units (CEUs) although an application will be made.
7. Handouts will be provided except for early and regular registrants; late registrants will be able to purchase them at the show.
8. Non-members include Affiliate and Associate members. Student non-members must be undergraduates.