Worcester County IEEE
Newsletter

Worcester Section - Computer Society and Delphi Developers Group
XML - Extensible Markup Language
Phil Storey, Application Engineer, Arbortext, Inc.
Monday, September 18, 2000, 7 PM, Allaire Corporation, Newton, MA
An explanation of XML technology, how it relates to HTML, relevant standards committee activity, its current status in the industry, and its future prospects

Computer Society of the Worcester County Section of the IEEE
Successful Engineering Management:
8 Lessons Learned
Johanna Rothman
Wednesday, September 27, 2000, 6:30 PM, Quantum, Shrewsbury
Engineering managers frequently have to learn management skills the hard. This talk describes some engineering management tips and tricks learned through trial and error.

Worcester Section - Computer Society and Delphi Developers Group
Palm OS, Pocket PC, and Windows Thin-Client Application Development
Corey Wood, Systems Engineer, Extended Systems, Inc.
Monday, October 16, 2000, 7PM, Allaire Corporation , Newton, MA
An overview a wireless/wired programmable middleware solution that provides real-time access to enterprise server processes for mobile devices and Windows clients.

Worcester County Section and Power Engineering Society
A Review and Demonstration of the Toyota Hybrid Electric Vehicle
Maurice Boiteau, Bernardi Toyota
Wednesday, October 18, 2000, 7PM, National Grid (NEES), Westboro
A discussion of the engineering details of the Toyota Electric Hybrid vehicle and a demonstration of its features.

Worcester Section - Computer Society and Delphi Developers Group
Advanced Debugging Techniques with CodeSite 2.0
Ray Konopka, President/Founder, Raize Software
Monday, November 20, 2000, 7PM, Allaire Corporation, Newton, MA
This months presentation will investigate advanced software debugging techniques with the new version of CodeSite. CodeSite, an advanced debugging.

IEEE Power Engineering Society Chapters Congress 2000

Ric Perron

Over one hundred delegates from 38 countries gathered in Seattle, Washington on 20 – 22, July 2000 to participate in the second *Power Engineering Society* (*PES*) Chapters Congress. Approximately one half of the delegates came from the United State; the rest came from countries such as India, Russia, Japan, Australia/New Zealand, Europe and Latin America. The *Power Engineering Society*, the only *Society* to hold a Chapters Congress, held its first Congress in Denver in August 1996. *PES* is the third largest Society in the IEEE. The *Computer Society* is the largest, followed by the *Communications Society*, which observed this Congress and may hold their own in the future.

The *PES* Governing Board noted new economic, membership and volunteerism dynamics evident in the *Society:*

Due to the changing economic dynamic in deregulation, employers are providing less financial support to *PES* delegates.

A new *PES* membership dynamic is evolving evidenced by a faster increase in membership outside of the United States.

PES is experiencing a stagnant volunteerism dynamic; the *Society* needs to increase awareness of the advantages of participating in Society activities, particularly in volunteer leadership positions.

The *Society* presented four tutorials: a Financial Tutorial, a Membership Tutorial, a Technical Tutorial, and a Multi-Subject Tutorial:

The Financial Tutorial addressed IEEE and *PES* Chapter's finances and discussed IEEE financial resources and special program resources, such as the Distinguished Lecture Program, available for the Chapters.

The *PES* Membership Tutorial addressed membership requirements and grades, how to obtain and use membership data, *PES* membership programs and resources, and ideas on how to build Chapter membership.

The *PES* Technical Tutorial discussed the various types and sources of technical programs, and how to have successful technical presentations.

The *PES* Multi-Subject Tutorial presented information about IEEE resources for Chapter leaders, including IEEE-USA, IEEE awards, and IEEE Professional Development.

Nearly half a day was devoted to Regional Caucuses. Delegates met in five sub-groups, divided with consideration of regional similarities and differences. One group consisted of Regions 1, 2, and 3. Regions 4, 5, 6, and 7 gathered in another. And lastly the delegates from Regions 8, 9, and10 each met separately.

The Regional caucuses identified current issues contributing to *Society* dynamics and made some recommendations:

Region 1	Difficulty in getting people to attend local meetings. Can we share electronic presentation means and have chat rooms with presenters.
Region 2	Improve the public image of engineering and the profession.
Region 3	Need tools to Quantify benefits of IEEE and PES membership.
Region 4	*PES* to Motivate industry executives to promote IEEE membership.
Region 5	Provide a list of timely "sexy" topics, not necessarily technical, to attract participation.
Region 6	Provide better communication among Chapter Chairs via mandatory Chapter Regional Representatives e-mails and Web broadcasts notes.
Region 7	Expand *PES* horizons to incorporate new realities in the power business, e.g., business, environmental, etc.
Region 8	Send regularly updated *PES* membership information to Chapters.
Region 9	Promote and support major technical activities in Region 9 (i.e., T&D 2002).
Region 10	Organize a Regional Chapters meeting in Region 10 every two years.

After they participated in twelve concurrent half-day problem-solving sessions, delegates convened to discuss their issues and ideas and to vote for the top ten solution candidates. They made the following recommendations to the Governing Board:

1 *PES* to provide tangible incentives to Chapter officers, i.e., waive or reduce *PES* dues, IEEE gift certificates, discount on publications.

2 *PES* to plan another global Chapters Congress with all ten regions.

3 *PES* to provide financial support for Chapter officers to attend conferences- e.g., registration fees.

4 *PES* to develop industry-focused information packages, such as videos and bullet-sheets, highlighting IEEE/PES membership benefits.

5 *PES* to provide free *IEEE* and *PES* videos and CD-ROMs to Chapters and to student branch Chapters.

6 *PES* to encourage Chapter Regional Representatives to meet with Chapter chairs once per year.

7 *PES* to provide, possibly on the Web, an annual information package, including guide, checklist of awards, etc.

8 *PES* to promote Power Engineering by supporting student scholarships and awards.

9 *PES* to provide Chapter chairs with the names and Technical Interest Profiles (TIP) of new and relocated *PES* members so that they can mentor/encourage young/new member participation, and possibly develop joint Chapters.

10 *PES* to provide information about financial programs and incentives on a Web site and at meetings.

The Congress ended on a positive, future-oriented note. The *PES* Governing Board noted new economic, membership and volunteerism dynamics in the *Society* and pre-

sented four related informational tutorials. Two separate delegate groups met in intensive problem-solving sessions and recommended their solution candidates with an implementation action time-line of two years—when the next Conference is scheduled. Delegates identified current issues and made administrative, financial and educational recommendations to the *PES* Governing Board designed to promote a stronger Society, more responsive to industry changes and to member needs.

The activity of *PES* is now; the hope of *PES* is the future.

Ric Perron, 508-869-2871, perron@ma.ultranet.com.

Section Supports Shrewsbury's Robotics Summer Enrichment Pilot Program

(for an expanded report go to http://www.ultranet.com/~ieeeworc/00-01/lego.html on the Section web site)

The Worcester County Section, IEEE was a sponsor for Shrewsbury's Robotics Summer Enrichment Program, a pilot program offered to fourth and fifth graders. FIRST (For Inspiration and Recognition in Science and Technology) and LEGO developed a partnership "The First Lego League (FLL)" with the goal of inspiring curiosity among 9-12 year olds in science and technology through the use of LEGOs. Based on FLL's philosophies, rules, and guidelines, this summer enrichment was developed to introduce elementary aged students to hardware engineering, software engineering, robotics, and the dynamics of participating on an engineering team solving an engineering design project.

Using LEGO/Mindstorms kits, engineering procedures, teamwork, tools, materials, and lots of hands-on experience, twenty-eight "student engineers", instructor, coaches (high school FIRST Team 467 students), parent volunteers, and professional engineers were challenged to design, build, debug and program LEGO robots. A complete, regulation playing field was built, with structures provided the student engineers with obstacles they needed to consider when testing and programming their robots.

The student engineers documented every phase of their participation, just as a professional engineer would. Their learning experiences their and frustrations in the dynamics of teamwork, problem-solving, project management, creativity, persistence, design concepts, strategy, and competition in each of their individual Student Guides. Each team presented and demonstrated their robot to their families and friends.

A video was made documenting the children's experiences and is currently being aired on Shrewsbury's Educational Cable Television Channel. Also, the completed robots were displayed and demonstrated at IEEE's Region I Officers Training Workshop in Cornwall, Canada on August

18th and 19th, and at Compaq Computer Corporation in Shrewsbury (another sponsoring organization).

This fall, Shrewsbury plans to offer after-school LEGO/Mindstorms robotics programs at its Middle School and at each of its four elementary schools. Each FLL team will compete at the FLL competition to be held at Bay Path Vocational Regional High School on Saturday, December 10th. The Middle School team also plans to compete at the Massachusetts Regional FFL competition. This program will also provide a segue for the the middle school students into Shrewsbury's High School FIRST competitions.

You can view this program, their follow along after school program, and FIRST Team 467 as they prepare for FIRST 2001 at their website: http://www.ci.shrewsbury.ma.us/Sps/Schools/High/USFIRST/index.html

A Review and Demonstration of the Toyota Hybrid Electric Vehicle
Maurice Boiteau, Bernardi Toyota

The difficult road to commercialization of highway electric vehicles has taken another step forward. This year has seen the introduction of two electric hybrids after modest success in leasing full electric vehicles in California.

We were fortunate in getting a sales representative and hybrid vehicle from Bernardi Toyota for a Power Engineering Society meeting. Mr. Maurice Boiteau of Bernardi Toyota will discuss the engineering details of the Toyota Electric Hybrid vehicle and demonstrate its features.

Mr. Boiteau is a Sales Consultant and Internet Sales Manager for Bernardi Toyota in Framingham, Massachusetts. He earned his Bachelor of Science Degree in Mechanical Engineering from Northeastern University, College of Engineering. Maurice also consults to industrial clients through his consulting company, ECO Technology. His specialty is the design and development of fluid handling systems through experimental modeling. He has worked on numerous design projects for power plant boiler and pollution control equipment. He has also worked as a Senior Process Engineer for Baker Process in South Walpole, where he contributed to the design and testing of continuous process centrifuges and vacuum filters.

The 2001 Toyota Prius is the world's first mass-produced gas and electric powered hybrid automobile. There are 35,000 vehicles currently on the road since it was introduced in Japan in December 1997. The US version of the car was placed on sale in July 2000 with 12,000 units available for this country this model year.

The Prius has an innovative drive train comprised of a 1.5 liter gasoline engine and a 30 kilowatt electric motor

which drive the front wheels through a continuously variable transmission. The gasoline engine is the primary source of power for the car, and serves to both power the vehicle as well as charge the battery. The Prius does not need to be plugged in to charge the battery, and is compatible with the existing gasoline distribution infrastructure. With the Toyota Hybrid System electronic control unit, kinetic energy is recovered through a regenerative braking system and the electrical energy is stored in a 110 pound nickel metal hydride battery. Electric power is used for accelerating the vehicle from a stop or when additional power is required for passing or climbing hills.

In addition to it's advanced powertrain, the Prius also includes additional energy saving features such as a low rolling resistance tires, low coefficient of drag, and a membrane system inside the fuel tank which reduces fuel evaporation. The interior dashboard features a multifunction touch screen information system that displays the power source in use, instantaneous fuel economy, and regenerated energy, as well as serving as an audio system control panel.

The meeting will be held at the National Grid (formerly NEES) auditorium in Westboro, Ma. At 7 P.M. on October 18, 2000. National Grid is located just west of route 495.

For further information call Stan Tanenholtz at 508-485-7185

Palm OS, Pocket PC, and Windows Thin-Client Application Development
Corey Wood,, Extended Systems, Inc.

Corey Wood, Systems Engineer, Extended Systems, Inc., (www.advantagedatabase.com) will overview a wireless/wired programmable middleware solution that provides real-time access to enterprise server processes for mobile devices and Windows clients. This middleware solution allows developers to build business rules/server processes in Delphi and C++Builder, and execute those processes from Palm OS, Pocket PC, and Windows applications.

This meeting of the Worcester Section - Computer Society, held in conjunction with the Delphi Developers Group of Greater Boston, will be held on Monday, October 16th, from 7:00 to 9:00 at Allaire Corporation, 275 Grove Street, Newton,MA (adjacent to the Riverside-T station). For additional information visit www.DisCom.com/Delphi or contact Al Reinhart, DisCom Systems at 508-869-6417 or Reinhart@DisCom.com.

Successful Engineering Management: 8 Lessons Learned
Johanna Rothman

Many engineering managers came to management through the technical ranks. Although they may have had plenty of engineering training and mentoring, they frequently have to learn management skills the hard way, through trial and error. This presentation describes some engineering management techniques to help people do their best work, and some ways that you can create an environment that enables good work.

For example, one of the most underutilized management tools is a one-on-one session with an employee. A one-on-one gives the manager an opportunity to learn in depth about what the employee is doing-what the employee enjoys, where the employee is succeeding and where the employee needs help. There are many good ways to hold a one-on-one, and a few less useful ways. We'll discuss one-on-ones-what makes them work, and what doesn't, and how to fit them into your busy day.

One way to create an environment of good work is to disable the unnecessary interruptions. We'll discuss what signs to look for, to see if people are being interrupted unnecessarily, and how to observe when people are not putting forth their best effort. Most people want to make their best effort, and we'll discuss how to assess their efforts, and how to help them work better.

This meeting of the Computer Society of the Worcester County Section of the IEEE is scheduled for 6:30 PM, Wednesday, 27 September 2000, at Quantum Corporation, 333 South Street , Shrewsbury, MA 01545. It is open to members and non-members. For more information call Ric Perron at (508) 770 - 6371.

Johanna Rothman observes and consults on managing high technology product development. She works with her clients to find the leverage points that will increase their effectiveness as organizations and as managers, helping them ship the right product at the right time, and recruit and retain the best people.

Johanna publishes "Reflections", an acclaimed quarterly newsletter about managing product development. Johanna's handbook, "Hiring Technical People: A Guide to Hiring the Right People for the Job," has proved a boon to perplexed managers, as have her articles in Software Development, Cutter IT, IEEE Computer, Software Testing and Quality Engineering, Crosstalk, Software Quality Professional, and IEEE Software.

Johanna is the founder and principal of Rothman Consulting Group, Inc., and is a member of the clinical

faculty of The Gordon Institute at Tufts University, a practical management degree program for engineers.

Johanna has an MS in Systems (Software) Engineering from Boston University. She also has a BS in Computer Science and a BA in English Literature from the University of Vermont. She holds two ASQ certifications: Certified Quality Auditor and Certified Software Quality Engineer.

Directions to Quantum from the East: Take Rt 9 West from Rt. 495, go several miles on Rt 9 (through Westboro, Northboro, to Shrewsbury). After passing the Rt. 20 interchange, make a left at the next traffic light onto South Street. The Ragsdale Superstore is on the south east corner, what used to be Fretter's that used to be Grossmans. Quantum Research Center is located up the hill on the left.

Directions to Quantum from the West: Take Rt 9 East (Worcester, to Shrewsbury). After passing the Rt. 140 interchange, make a right at the next traffic light onto South Street. The Ragsdale Superstore is on the south east corner, what used to be Fretter's that used to be Grossmans.

Quantum Research Center is located up the hill on the left.

Ric Perron, tel: 508-869-2871, Internet: perron@ma.ultranet.com

XML - Extensible Markup Language
Phil Storey, Arbortext, Inc.

XML, with its highly flexible syntax for describing virtually any kind of information, is currently the most promising language for storing and delivering information on the World Wide Web. Phil Storey, an Application Engineer at Arbortext, will explain the XML technology, how it relates to HTML, relevant standards committee activity, its current status in the industry, and its future prospects. Arbortext (www.arbortext.com) is a founding member of the W3C XML Working Group, sits on W3C steering committee, co-submitted the XSL proposal, and is currently a member of the XSL Working Group. Information on XML can be found at www.arbortext.com/Think_Tank/think_tank.html

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Advanced Debugging Techniques with CodeSite 2.0
Ray Konopka, Raize Software

This months presentation will investigate advanced software debugging techniques with the new version of CodeSite. CodeSite, developed by Ray Konopka, President/Founder, Raize Software (www.raize.com), is an advanced debugging tool based on the time-honored approach of sending messages from an application to a message viewer. However, unlike all of its predecessors, CodeSite handles much more than simple strings, and provides an extensive set of tools to aid in analyzing the messages generated by an application.

This meeting of the Worcester Section - Computer Society, held in conjunction with the Delphi Developers Group of Greater Boston, will be held on Monday, November 20, from 7:00 to 9:00 at Allaire Corporation, 275 Grove Street, Newton,MA (adjacent to the Riverside-T station). For additional information visit www.DisCom.com/Delphi or contact Al Reinhart, DisCom Systems at 508-869-6417 or Reinhart@DisCom.com.