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THE SUNCOAST SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.



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This Month's Meetings

**Tuesday, May 11th: EXCOM Meeting
(Please note the temporary date change!)**

Meeting starts at 5:30PM At TECO Plaza

Register online at <http://time2meet.com/fwcs-excom/index.html>

Meeting is open to all FWCS Members

Robotics and Automation Society Meeting

Tuesday, May 18, 2010

Location is Whiskey Joe's

7720 W. Courtney Campbell Causeway

[Details on Page 6!](#)

Arc Flash Seminar

Friday May 21, 2010

Seminole Electric, 16313 North Dale Mabry Hwy,

[Details on Page 4!](#)

Upcoming Meetings!

FECA Annual Engineers Conference

Thursday, June 10, 2010

Sand Pearl Resort, 500 Mandalay Ave Clearwater, Florida

[Details on Page 5](#)

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All material for THE SUNCOAST SIGNAL is due in electronic form by 1st Sunday after the 1st Tuesday of the month preceding the issue month. Address all correspondence to:

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This Month...(Editor's Column)

I went to the Sun-n-Fun Fly In which is held at Lakeland Linder Airport each year and I learned quite a bit about the state of General Aviation aircraft in regard to avionics. The surprise is the use of the so called "glass cockpit" in so many of the aircraft. The glass cockpit is an LCD panel that displays the primary flight instrumentation and replaces the electro-mechanical gauges that were common when I was flying. The panel includes a secondary display of a GPS Moving Map for navigation. In the past such displays were only in military aircraft. They began appearing in Experimental Aircraft several years ago in the form of engine monitoring and GPS navigation equipment. Even Cessna Aircraft offers Garmin displays in all their current models. I was also a bit surprised to learn that they offer two carbon fiber composite airframes. For the student pilots of the future, it's no more flying with a yoke mounted GPS and trying to read a sectional chart when flying cross country.

We have several meetings this month so make plans to attend if you can. There is also an article on Toastmasters that will appear in a future issue of the Spectrum in an abbreviated version.



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IEEE Website Redesigned!

IEEE has redesigned the main website (IEEE.org), the Web gateway to the world's largest association for technical professionals and the primary communications vehicle of the IEEE. With a fresh design, the site includes many improvements to help its users find the information and resources they want more quickly and easily.

More than five million users from over 200 countries visit the Main Site each year. After extensive audience research and testing the site is now more representative of the breadth of IEEE. This new site is designed to better serve our users, whether a professional, academic, student, researcher, a member of the general public or the media.

Design

The site features a new clean visual design including:

- a more consistent user experience throughout the site,
- an improved look and feel that better reflects the dynamic IEEE brand,
- a redesigned home page that provides a more content-rich experience; better showcasing up-to-date information related to a broad range of IEEE activities.

Navigation

The site features an improved navigation to help users accomplish their tasks. Improvements include:

- IEEE Meta Navigation allowing easy movement between the primary IEEE sites IEEE Xplore Digital Library, IEEE Standards Association, Spectrum Online and more,
- Streamlined Global Site Navigation to simplify the process of finding content,
- Enhanced landing pages that provide a contextual entry point for deeper level content and are a better representation of the content within the section,
- Audience-centric right navigation menus in key sections,
- "On this page" modules on lower level pages to aid discovery and reduce the need for scrolling.





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IEEE-USA has launched a new, interactive online publication, [IEEE-USA in ACTION](#). Made possible by the U.S. dues assessment, this new publication is free to all U.S. IEEE members. IEEE-USA in ACTION is your new source for learning about the programs, products, services and activities that IEEE-USA has to offer, and to find out what IEEE-USA is doing on behalf of U.S. IEEE members.

http://www.nxtbook.com/nxtbooks/ieeusa/ieeusa_0410/#/1/OnePage





Arc Flash Hazards, NFPA 70E & IEEE Standard 1584

Date: Friday, May 21, 2010
Time: Seminar: Registration 8:30am-9:00am, Speaker 9:00am-3:00pm
Speaker: Bill Vilcheck, Eaton
Location: Seminole Electric, 16313 North Dale Mabry Hwy, Tampa, FL 33618
Cost: \$100 Members, \$150 Non-Members, \$50 Students. (Includes Lunch)
PDH Credit 5 professional development hours will be awarded. Be sure to enter your name and PE number on the sign-up website as it appears on your license.
RSVP: Online at: <http://time2meet.com/fwcs-pes1/index.html>
Make checks payable to: IEEE FWCS
Send checks to: John Stankowich, IEEE PES/IAS Treasurer
2593 Forest Run Court
Clearwater, FL 33761-3716
Space limited to the first 45 registrants!!!
Cancellation must be submitted online 24 Hrs prior to the seminar at:
<http://time2meet.com/fwcs-pes1/index.html>
No shows will be invoiced for the total cost of the seminar.

Questions: Valerie Tur at 813-840-3454 or VTur@tawinc.com

Are you familiar with Arc Flash Hazards, NFPA 70E, and IEEE Standard 1584?

Come to this informative seminar for expert advice on arc flash hazards and an update on the recent changes to NFPA 70E-2009.

Seminar Topics Include

- Existing/Proposed Standards Relating to Arc Flash
- NFPA 70E-2009
- IEEE 1584-2002
- IEEE C2-2007 (NESC)
- OSHA Requirements
- Determining Safe Approach Distances
- Flash Protection Boundary Calculations
- Incident Energy Exposure Calculations
- Determining the Hazard Risk Category (HRC)
- Select Personal Protective Equipment (PPE)
- Practical Methods for Reducing Arc Flash Hazards

Bill Vilcheck received his BSEE and MSEE from West Virginia University and has been employed as a power systems engineer since 1975. He joined Eaton Corporation in 1998. As Principal Engineer, he has been involved in all Power Systems Engineering activities and continues to focus upon power quality engineering, energy management, arc flash safety, and smart grid technologies. Mr. Vilcheck is a senior member of IEEE and member of the Pulp and Paper Industry Committee. He is a Professional Engineer registered in Pennsylvania and West Virginia and co-author of several technical papers





FECA Annual Engineers Conference

Distribution System Protection

Date: Thursday, June 10, 2010
Time: Seminar: Speaker 8:00am-12:30pm
Speaker: Adrian Zvarych, Marion Cooper, Fennell, Everett C, Sowell, Alonzo.
Location: Sand Pearl Resort, 500 Mandalay Ave Clearwater, Florida
Cost: Will range between \$60-\$ 70
PDH Credit 4 Professional Development Hours will be awarded

Topic #1 – Symmetrical Components Concepts

- Provide basic training in symmetrical components, Per-Unit conversions from phase values, using base-MVA ratings, etc.

Topic #2 – Distribution System Overview

- Typical overall distribution system overview and how it interfaces with the overall traditional generation and transmission system.
- Basic review of hardware components: pole mounted cap banks (fixed, timer, and dynamic control), reclosers, fuses, voltage regulators, etc., and why they are needed
- Radial systems and components such as feeder tie point, operating concerns and benefits
- Networked distribution systems and components, operating concerns and benefits (Perhaps use I-Drive UG network as an example)
- Voltage Regulation concepts. Voltage control at the bus (aka PEF) and at the feeder (aka FPL), load reduction profile, Underfrequency/Undervoltage load shedding concepts

Topic #3 – Distribution Protection Coordination

- Starting at the substation, provide an overview of coordination alternatives between substation breaker, reclosers, and lateral fuses
- Transformer damage curve
- Coordination curves – fuses, relays, reclosers
- “Fuse Save” vs. “Fuse Blow”
- Run through an example coordination for a typical radial feeder with a modicum of reclosers and lateral fuses

Topic #4 – Smart Grid Concepts

- AMI/AMR
- RF Network Connections to the Meter
- Dynamic Recloser and Cap Bank Controls
- Communications to reclosers and cap banks
- Improving Power Factor at the station bus
- Dynamic load controls at the home, along the feeder (cap banks & voltage regulators), and in the substation



Ultrasound Pioneer to Receive Highest Award

Ultrasound pioneer Gerald J. Posakony will be honored with the John Fritz Medal -- the highest award in the engineering profession -- tonight by the American Association of Engineering Societies (AAES). Posakony's pioneering contributions to the fields of ultrasonics, medical diagnostic ultrasound and nondestructive evaluation technologies will be recognized during AAES' 31st annual awards ceremony at the Great Hall of the National Academy of Engineering.

Posakony's work on medical ultrasound technology began in the early 1950s when he was the lead engineer on an ultrasonic diagnostic imaging system for investigating human disease processes. His efforts, particularly in the development of ultrasonic transducers -- the "eyes" of an ultrasound system -- have contributed greatly to modern ultrasound technology. The medical imaging of muscles, tendons and internal organs is used to gauge their size and structure and determine if pathological lesions are present. Obstetric sonography is important in monitoring the health of a pregnant woman and her unborn baby.

Posakony also designed, fabricated and tested an ultrasonic phased array system for the Electric Power Research Institute to conduct inspections of nuclear power plant components. The transducer he developed to test for aging in the Sparrow solid rocket motor enabled the U.S national inventory to be screened and aged motors to be removed. A former senior research scientist at Pacific Northwest National Laboratory in Richland, Wash., Posakony graduated from Iowa State University in 1949 with a degree in electrical engineering. He holds 13 patents and became an honorary IEEE member in 2009.

The John Fritz Medal is presented each year for scientific or industrial achievement in any field of pure or applied science. It was established in 1902 as a memorial to the engineer whose name it bears. Past recipients include Alexander Graham Bell (1907), Thomas Edison (1908), Alfred Nobel (1910), Orville Wright (1920) and Guglielmo Marconi (1923).



Robotics and Automation Society (Third Tuesday of the Month)

At our March meeting, Terry Willingham and her son Chris gave us an introduction to their team's efforts. Terry is the coach of the First Tech Challenge team, "Team Duct Tape". They had just won the Florida state championship and are going to the FIRST World Championship in Atlanta, Georgia on April 14 – 17.



May's meeting will be held on Tuesday May 18. At:
Whiskey Joe's
7720 W. Courtney Campbell Causeway

The entrees are:

- Chopped Salad \$19.25
- Chicken Sandwich \$16.70
- Signature Burger \$16.70
- Fish & Chips \$19.25

The entree price includes meal, non-alcoholic drink, tip and tax. Social time starts at 6:00 PM with the dinner meeting starting at 6:30pm. If you select not to eat, there will be a minimum \$2.00 charge. You will need to pay by check or cash at the meeting. Make your check payable to IEEE FWCS. RSVP by email to george@imbedded.com and provide the names and food selection for each person in your group. Bring some friends; this meeting is open to everyone that is interested. As this is being prepared the Topic of our May meeting has not yet be solidified, but be assured it will be interesting.

George Schott

Tampa Bay IEEE RAS Chapter Chairman



What is a Toastmaster?

I am sure that most of the readers have heard of Toastmasters and you probably think that it is a club where members give speeches on various topics. You would be partially correct but Toastmasters has a lot more to offer than just speeches. How many of you have been asked to make a presentation on a project, or been asked to critique an idea or process or been to a job interview where you had to think on your feet? I imagine that nearly everyone could answer yes to at least one of these questions. Your local Toastmasters club can help you improve in each of these areas when you become a member and participate in the meetings.

First, Toastmasters is known for teaching you how to write and deliver speeches on topics of your choosing. It is done by completing 10 speech projects in the Competent Communicator Manual. It starts with the “Icebreaker” speech which is 4-6 minutes long and allows the club to learn more about you and also see what you do well in speaking and areas for improvement. Each speech project after that focuses on a specific skill, like organizing your speech, vocal variety and body language. There is also a speech that emphasizes multimedia presentations like PowerPoint. Each speech builds on the skills learned in the previous project. When you complete the manual you are awarded the Competent Communicator certificate.

For each formal speech made by a club member an Evaluator is assigned to listen to the speech and make notes on what the speaker did well and suggestions for improvement. At some point in the club meeting, the Evaluator goes before the group and delivers a 2-3 minute presentation on the speech project. To be a good Evaluator you need to develop good listening skills and be able to compose a short speech in just a few minutes and deliver it in a way that allows the speaker to learn from the project. Being an effective evaluator and offering constructive criticism is a valuable skill in the workplace.

Prior to a Toastmasters meeting, one of the members volunteers to be “Table Topics Master”. This person will develop a list of questions or topics, usually around the theme of the meeting. A member is selected at random and given the topic. The task is to give a concise answer delivered in 1-2 minutes. This exercise gives you practice in thinking on your feet and responding to unexpected questions.

Finally, one of the most valuable skills is being the Toastmaster of the meeting. You develop a theme, organize the meeting, print an agenda and make sure the meeting goes smoothly and orderly with everyone getting to speak and keeping the meeting lively and fun and starting and ending on time.

So you can see that there is much more to Toastmasters than just giving speeches. I hope you take the time to visit a club near you and enjoy the benefits of membership!



Identity Theft -- Distinguished Visitor Meeting

On March 30, 2010, the FWCS Computer Society hosted an IEEE Distinguished Visitor, Dr. Hal Berghel, who presented the topic: Identity Theft and Financial Cyber Fraud in the New Millennium. Dr. Berghel is a professor and director of the School of Informatics and the associate dean of the Howard R. Hughes College of Engineering.



Dr. Berghel explained the origins of modern ID theft and financial fraud and provided several examples of how crimes are perpetrated by modern e-criminals. Modern criminal exploits and the details of specific crimes were also presented. In addition, Dr Berghel explained technologies that may be used to thwart these activities. For further reading, there are many security articles on Hal Berghel’s web site. <http://www.berghel.net/publications/articles.php>

There you will find publications including the following:

- Data Hiding Tactics for Windows and Unix File Systems
 - Phish Phactors: Offensive and Defensive Strategies
- We hope to have Dr. Berghel return and present “Internet Forensics -- New Frontiers” in the future.
By James Lumia, Computer Society Chair





Florida West Coast Section, Tampa

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May 2010 Calendar of Events (For more information see P. 1) *inside this Signal...*

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9 <i>Mother's Day</i>	10	11 <i>EXCOM Meeting at TECO Hall</i>	12	13	14	15
16	17	18 <i>RAS Chapter Meeting</i>	19	20	21 <i>Arc Flash Seminar, see page 4</i>	22
23 30	24 31	25	26	27	28	29