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THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

<http://www.ieee.org/fwcs>

Volume 48 - No. 6

June 2005

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# Power System & Substation Grounding Seminar

Sponsored by

The IEEE Power Engineering Society  
Florida Electric Cooperatives Association

**Four professional development hours will be awarded for completion of the seminar. Florida Provider Number EXP00015**

- Speaker:** Ghaff Khazami, P.E.  
Chair. PES/IAS FWCS  
MEGAWAY, Inc. Consulting Engineers
- Date:** June 9, 2005
- Time:** 8:00 AM – 8:30 AM  
Registration and continental breakfast Seminar  
8:30 AM – 2:15 PM with a one hour break  
for lunch (not provided)
- Location:** Sheraton Sand Key, 1160 Gulf Blvd.,  
Clearwater, FL.  
Phone: (727)-595-1611
- Cost:** Members \$75, Non-members \$100 (Prices were  
incorrectly listed in May Signal) Company name,  
attendee's name, & PE license number (if applicable),  
must be provided along with payment
- Registration:** Register with FECA (Registration Form on Page 5)

*Registration must be paid in advance. Send checks payable to FECA to:  
Raymond G. Trusik, Florida Electric Cooperatives Association, Inc.  
2916 Apalachee Parkway, Tallahassee, FL 32301*

For more information please contact Art Nordlinger 813-630-6203 or email  
[a.nordlinger@tecoenergy.com](mailto:a.nordlinger@tecoenergy.com)

**Directions to hotel:** Take I-75 or I-4 to I-275 to Memorial Hwy/ State Road 60  
West. Take SR60 West across the Courtney Campbell Causeway, through  
Clearwater and across the Memorial Causeway to Gulf Blvd..

IEEECS/AESS/PLUG  
Joint Meeting

## High-Speed Memory Interface with Xilinx Virtex-4 FPGAs

15<sup>th</sup> June 2005  
Avnet, Clearwater, FL

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IEEE-FWCS Section  
Meeting

## Robotic Technologies for Urban Search and Rescue

27<sup>th</sup> June 2005  
Tampa, FL

See Page 3

## 2005 IEEE EXECUTIVE COMMITTEE FLORIDA WEST COAST SECTION

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THE SUNCOAST SIGNAL is published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). THE SUNCOAST SIGNAL is sent each month to members of the IEEE on Florida's West Coast. Annual subscription is included in the IEEE membership dues. The opinions expressed, as well as the technical accuracy of authors, advertisers or speakers published in this newsletter are those of the individual authors, advertisers, and speakers. Therefore, no endorsement by the IEEE, its officers, or its members is made or implied.

All material for THE SUNCOAST SIGNAL is due by 7<sup>th</sup> day of the month preceding the issue month. Address all correspondence to:

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## IEEE-USA Applauds House Plans for Innovation Summit

WASHINGTON (12 May 2005) IEEE-USA applauds Reps. Frank Wolf (R-Va.), Sherwood Boehlert ( R-N.Y.) and Vern Ehlers (R-Mich.) for announcing plans for an Innovation Summit this fall.

"We congratulate these members of Congress for recognizing the importance of innovation and technology to our nation's continuing economic well-being and national security," IEEE-USA President Gerard A. Alphonse said. "There's an urgent need to convene key stakeholders from all sectors to better understand the challenges to U.S. high-tech innovation and propose solutions we can all work on together."

IEEE-USA is an organizational unit of the IEEE. It was created in 1973 to advance the public good and promote the careers and public policy interests of the more than 220,000 technology professionals who are U.S. members of the IEEE.



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## Six FWCS Members Elevated to IEEE Senior Membership in April

The following Six Florida West Coast Section Members were recently elevated from Full Membership to Senior Membership: **Jacob Chacko, Marion H. Cooper, Lawrence T. Hersh, Joseph Mitola III, Sudeep Sarkar, James W. Wall.** Hearty Congratulations and many thanks for your years of service to the engineering profession!! For questions regarding the IEEE Senior Membership Program, please contact Tom Blair [tom\\_blair@ieee.org](mailto:tom_blair@ieee.org).

## Upcoming PES/IAS Meetings

Your local PES/IAS Chapter is currently working on several upcoming events. We are working on arranging a training seminar on the 2004 NFPA 70E and Electrical Safety. Details are being finalized now and will be announced in the next Signal newsletter.

We are also working with General electric on arranging a tour of their transformer repair facility in Manatee county. More details will be announced in the next Signal newsletter.

Your PES/IAS Chapter is continuously looking for suggestions for events and meetings that would be beneficial to our local members. If you have any suggestions or if your company would like to sponsor a meeting or tour, please contact Ghaff Khazami at [gkhazami@megaway.com](mailto:gkhazami@megaway.com) or Tom Blair at [tom\\_blair@ieee.org](mailto:tom_blair@ieee.org)

# Robotic Technologies for Urban Search and Rescue

**Date/Time:** 27<sup>th</sup> June 2005 at 11:30 AM  
**Location:** TECO Hall, 702 N. Franklin Street, Tampa  
**Food:** Lasagna with salad and dessert  
**Cost:** \$10 members, \$15 non-members, \$5 students

**Topic:** Various search and rescue technologies using robots will be presented by Mr. Matt Long of Center for Robot-Assisted Search and Rescue. Also new sensors technologies, current limitation of technology and main applications of technology to search and rescue in the emergency rescue, medical reachback and chem./bio areas will be discussed. Mr. Long will have a robot for show-and-tell.



**Biography:** Matt Long is a Ph.D. candidate in Robotics at the University of South Florida (USF). He earned his B.S. in Mathematics and Computer Science 1998 from the Colorado School of Mines and his M.S. in Computer Science from USF in 2004 for creating a distributed architecture for teams of heterogeneous robots. This architecture is in use on a number of platforms at USF. He has done prior work in sensor fault tolerance for unmanned systems and is a volunteer with the Center for Robot-Assisted Search and Rescue (CRASAR). His research interests include distributed robotics and computing, software agents, and computational intelligence.



**Reservations:** Make reservations on line: <http://www.weiquality.com/fwcs-meetings/> or call Quang Tang at (813) 739-1222. June 22<sup>nd</sup> is last day to make reservations.

## It's been a great ride!!

By Srinivas Katkooi

Time flies!! It has already been close to two years, since I have taken over as the Signal Editor. When I volunteered my time to edit the Signal, I underestimated the amount of work required to maintain the high quality standards that my predecessor, Quang Tang, had set. In general, I also underestimated the job of an editor. After serving as the Signal editor, I have a new found respect to the editorial job. Being Signal editor, taught me several lessons, the important one being: an editor must be able and efficient in several ways – to précis a long-winding article into a short-and-crisp one *without losing the author's purpose*, to transform every article into one with aesthetically good looks, to proof-read every article carefully, no matter how boring or interesting it is, to nag people about their timely contributions, and finally to save, save, and save the valuable space.

It was a smooth transition; I inherited a few past Signal articles from Quang. I started using them as templates. I am amazed to see how well *Microsoft Word* can be used to produce a newsletter! Prior to this, I had little experience with Word and, frankly, was not looking forward to work with Word! To my surprise, *Microsoft Word* has evolved indeed! It has been a pleasant experience, drawing tables, boxes, and editing images, etc.

It was a great pleasure formatting (and reading at the same time) *Brain Teaser Column* challenges. This column has renewed my interest to look at fundamentals of electronics. Once talking to Butch about his column, he remarked that the sole purpose of the column is to keep engineers in touch with the fundamentals that they have learnt way back in school but are no longer applying them in their daily work. The only regret I have as the editor is not being able to *match* each column with an appropriate clipart. Butch does great story-telling, and I wanted to match it with a picture! Hopefully, Paul can (and want to?) do this.

Volunteering as Signal Editor has paid off for me! While editing Signal, I enjoyed the articles, I learnt new stuff, I made a lot of friends..what else can I ask for? If you have not already done so, volunteer your time to IEEE. You will get handsome rewards for your time.

I thank IEEE FWCS for providing this wonderful opportunity. In particular, John Conrad, Jim Howard, Jim Anderson, Quang Tang, Tom Blair, Richard Beatie, Art Nordlinger, and Jim Beall. I also thank Mr. Paul Schnitzler (see Page 5 for his brief biography) for stepping forward to be the next Signal Editor. Paul brings a lot of editorial experience to the job. To start the transition, last month's Signal was co-edited by Paul and me. In one afternoon, from Paul I have learnt more tricks in *Word* than I ever did in past 10 years!! I keenly look forward to reading his editions of Signal. Now, I take off on my Sabbatical leave...So long!!

## Digital Hardware Design Topic: High-Speed Memory Interface with Xilinx Virtex-4 FPGA Devices

**Date/Time:** **Wednesday, 15<sup>th</sup> June 2005**

6:00 PM to 7:30 PM

**Speaker:** Mark Graham

**Location:** Avnet Electronics Marketing  
380 Park Place, Suite 170  
Clearwater, FL 33759

**RSVP:** [www.weiquality.com/fwcs-meetings/](http://www.weiquality.com/fwcs-meetings/)

**Speaker:** Mark Graham has been a field application engineer for Xilinx for the past 9 years. Prior to Xilinx, Mark worked for 13 years as a high-speed digital designer for Lockheed Martin and for Texas Instruments. He graduated with a BSEE degree from the University of Tennessee.

### *Open Meeting. Students and Non-members Welcome!!*

Mark will explain the high-speed memory interface solutions that Xilinx offers and will review some of the challenges associated with modern memory interfaces. He will also discuss some details of source-synchronous design techniques and explain the Virtex-4 I/O enhancements which simplify memory interfaces including the ChipSync, Xesium, and SmartRAM features. There will be an introduction of the Memory Interface Generator (MIG) software tool and a demonstration of a design example utilizing the Xilinx ML461 reference board.

Avnet will provide Complementary pizza and cold drinks.

**Directions:** The Avnet local office is between SR60 (Gulf-to-Bay) and Drew Street, just east of US19 (a few hundred yards behind Bennigan's). To get there from the west, go east on SR60. Turn left (north) at the second light after the US19 overpass (Park Place). Take your second left after the light (North Park Place in complex). The tan 3 story building will be a couple hundred yards ahead on the right side. Avnet's number is 727-507-5000. Your Avnet host is Ben Harding (727-510-5325)



## Grounding & National Electrical Code Seminar



*In a joint partnership with IAEI ( International Association of Electrical Inspectors), your local IEEE PES/IAS Chapter is offering this 8 hour seminar on grounding and the 2005 NEC.*

**Date:** **Saturday, August 06, 2005**

**Speaker:** Mr. Jim Pauley, Schneider Electric/Square D

**Location:** Harbor View\_Center, 300 Cleveland St.  
Clearwater, FL 33755

**Cost:** \$110 Members, \$125 Non-Members,  
Student Member fee TBD

**PDH** 8 PDH credits will be offered.

**RSVP:** <http://www.ewh.ieee.org/r3/floridawc/>

Checks payable to: IEEE FWCS. Mail checks to:  
Ralph Painter, IEEE FWCS Treasurer 648  
Timber Pond Drive, Brandon, FL 33510-2937

**Questions:** Tom Blair at 813-228-1111, ext 34407 or  
[thblair@tecoenergy.com](mailto:thblair@tecoenergy.com)

7:15-8:10am	Registration & Contl. Breakfast.
8:10 - 9:50am	Grounding/NEC Seminar.
9:50 - 10:05am	Coffee break
10:05 - Noon	Grounding/NEC Seminar Ct'd.
Noon - 1:00pm	Salad/sandwich buffet luncheon.
1:00 - 2:50pm	Grounding/NEC Seminar Ct'd.
2:50 - 3:05pm	Coffee/soda break.
3:05 - 5:00pm	Grounding/NEC Seminar Ct'd.

**Mr. Jim Pauley** of Schneider Electric/Square D will be the speaker for the grounding and NEC seminar. His primary function for Schneider Electric is as world wide codes liaison. He is active in NECODE CMPs and the NECODE Technical Correlating Committee which compile the NECODE. He has been a frequent visitor to and contributor to Florida Chapter IAEI activities. Expect Jim to reveal intricacies of grounding as well as some of the engineering eloquence inherent in the subject.

## Secrets Revealed: Who Is The FWCS?

By Jim Anderson

As your new Vice-Chairman, it occurred to me that I needed to learn more about who belongs to the FWCS with the hope that this would help me serve you better. The right way to do this would have been to visit all 2000+ members at home instead I decided to take a shortcut and do some number crunching using our mailing list. I fired up Excel, loaded the mailing list and then spent 3 nights happily slicing, dicing, and sorting the data. The end result was not what I was expecting.

First off, I asked which counties do we live in? It turns out that we live in 19 different Florida counties. The top five are Pinellas (20%), Hillsborough (18%), Lee (10%), Sarasota (9%), and Pasco (8%). These 5 counties contain about 65% of the FWCS members. Next I drilled down a bit further and asked what cities members lived in. We live in 117 different cities. The top seven are Tampa (20%), Sarasota (6%), Saint Petersburg (6%), Clearwater (6%), Naples (5%), Palm Harbor (4%), and Bradenton (4%). Together these seven cities hold roughly half of the membership.

Diving down one layer further, I played around with Zip Codes and discovered that the largest number of members (54) live in 33647 [Tampa]. 97% of members have at least one fellow member who lives in their zip code (just goes to show you that the IEEE is everywhere!). Further analysis showed that 57% of members live in Zip Codes that are adjacent to other members. After a little thought I realized that this means that there are islands of members out there members tend to live in the same neighborhoods.

Finally, as I realized that I had spent entirely way too much time on this little task, I asked the computer one more question: what is the most popular first name among the FWCS members? No big surprises here: it was a tie between the 4% of us who are named Robert and the 4% of us who are named John. To keep things fair, I then asked for the most popular female name in the FWCS: Jennifer wins at 0.24% followed by Patricia (0.19%).

The IEEE Florida West Coast Section truly does represent the entire southwestern portion of the state. I guess this just proves that Florida is great place to live and the IEEE is a great organization to belong to.

## SUBSTATIONS COMMITTEE ANNUAL MEETING REPORT

By Tom Blair

The Florida West Coast Section hosted the 2005 Annual Substations Committee Conference in April and it was a great success. There were three technical tutorials and a technical tour held for the event. It would not have been possible without the support of our sponsors:

- Tampa Electric Company
- Engineer Sales Company
- Areva T&D
- Newton-Evans
- Commonwealth Associates
- Electric Sales Associates
- General Electric
- Dymec



Many thanks to the volunteers who dedicated their time and efforts to help with the annual conference. For more details please go to the PES Substations Committee Web Site at: [http://www.ap-concepts.com/ieee\\_substations\\_org.htm](http://www.ap-concepts.com/ieee_substations_org.htm)

The PES Substation Committee is comprised of six distinct sub-committees, which create working groups to continually update the IEEE standards publications. These subcommittees cover various specific areas of interest. Some of the subcommittees involved include the following:

- Data Acquisition, Processing and Control Systems (“C” groups), also meet annually with the Power Systems Relay Committee (PSRC)
- Transmission and Distribution Substations (“D” groups)
- West Coast Interests (“F” groups)
- Environmental Issues (“G” groups)
- High Voltage Power Electronics (“I” groups)
- Gas Insulated Substation (“K” groups)

## Dr. Paul Schnitzler – New Signal Editor

Paul Schnitzler, Ph.D. (E.E.), SLM, has extensive senior level experience in the electronics field including work with both large and small-or-startup companies.

Paul has developed products in wire, wireless, and fiber telecommunications; video systems including cameras and plasma display panels; and software in education, medical, database, and embedded applications. These were accomplished at Bell Laboratories, RCA Corporation, the Time Inc. Magazine Company, Cadence Design Systems, and a variety of smaller companies. Currently, he is an engineering and management consultant as well as Senior Director, Systems, for Deep Sea Link, Inc. a special applications telecommunications company.



He has taught courses in engineering, management, marketing, and creativity for New York University, Drexel University, Fairleigh Dickenson University, Middlesex County College, RCA, Bell Laboratories, Cadence Design Systems, and the IEEE, and is a Professor on the faculty of the Graduate Management School at Northwestern Polytechnic University. He recently taught an invited seminar in Entrepreneurship at Fudan University in Shanghai, China.

Paul earned his Ph.D. (E.E.) from the Polytechnic University of New York and the B.S. and M.S. in E.E. from New York University. He received the RCA Laboratories' Doctoral Study award and the Hugo Gernsbach Award, was elected to Sigma Xi, and is listed in Marquis Who's Who in the World. Paul holds several patents and has published over twenty papers in circuit design, microwaves, television, and telecommunications. He has been a member of the IEEE since his student days.

Paul's website is <http://www.paulschnitzler.com> and he may be reached at [paulschn@ieee.org](mailto:paulschn@ieee.org).

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### Registration Form FECA Sponsored Power System & Substation Grounding Seminar June 9, 2005 – 8:30 am – 2:15 pm Sheraton Sand Key Beach Resort Clearwater, FL

Name of Company \_\_\_\_\_

Number of non-IEEE members attending the June 9  
IEEE seminar @ \$100 each: \_\_\_\_\_

Number of IEEE members attending @ \$75 each \_\_\_\_\_

Persons Attending (please list Name as it appears on the PE License, PE License # and/or IEEE Member #):  
NAME(s) PE License # IEEE Membership Number

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Prepared by: \_\_\_\_\_ Phone # \_\_\_\_\_

**Please fax registration form and mail a check for registrations payable to FECA. All registration fees must be prepaid in order to attend the conference.**

**Mail to: Raymond G. Trusik  
Florida Electric Cooperatives Association, Inc.  
2916 Apalachee Parkway  
Tallahassee, Florida 32301**

**Fax to: (850) 656-5485**

<b>Hotel Information</b> Sheraton Sand Key Resort 1160 Gulf Blvd. Clearwater, FL 33767 Telephone 727-595-1611 Cut off Date May 8, 2005
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**Mention that you are with FECA for the group room rate of \$139 per night single or double. Room rate increases to \$159 per night after 5/8/05. Please cancel within 72 hours of arrival in order to avoid a penalty of one night room fee plus tax.**



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## Students' Corner

### IEEE Student Branch

With finals over the students at USF will get a well earned summer break. Of those students who earned it, I think Kristy Baksh has worked exceptionally hard for it. She has completed her semester, her finals, her senior year, and with this her presidency of the IEEE USF student branch. She did a great job, as the new president I would like to thank her and all her staff. The new staff and I know we have big shoes to fill, and look forward to doing so. The new USF officers are as follows:

Aaron Meltzer	President
John Wells	Vice President Internal
Jeremy Ludes	Vice President External
Rocky Ilen	Treasurer
Andrew Quecan	Secretary

We are all looking forward to a fun and interesting year. To start it off we have a picnic on Saturday June 25<sup>th</sup> from 10am – 3pm. We are going to be doing a ropes course this year, so all of you engineers that think you can pit your climbing and balancing prowess against that of the students, let's see it. For more information contact me or John Wells at [IEEE@eng.usf.edu](mailto:IEEE@eng.usf.edu). Once again we are excited about this next year, and will do our best to increase student involvement and maintain the level of activity we now have. Thanks again to the graduating staff.

## Brain Teaser Challenge Column

By Butch Shadwell

**May BTC** Last month's shocking tale involved, "... pulse(ing) an auto ignition coil to generate the annoying electric shock to the unwanted marauders. I wanted to protect the switching transistor from potentially very high currents if it should stay on too long. What common electrical device from a car when placed in series with the coil primary and the transistor, would allow a high inrush current to saturate the coil quickly and then limit the current to a safe level after a very short while? HINT- This is a very inexpensive two lead component with no semi-conductors."

Several respondents suggested a capacitor, but it would take a huge, and quite expensive, capacitor to supply enough charge to saturate an auto spark coil. The correct answer was a light bulb. The starting resistance of a 25 Watt bulb would allow very high current to flow to the coil for a quick build up of field, but after a few milliseconds the filament would rise in temperature and in resistance, limiting the longer term current flow to about 2 Amps max. Congrats to all of you who got this one!! This is engineering from the old school.

**June BTC** Norman loved pigeons. Hanging around the city park and throwing food to the aggressive birds was his favorite type of outing. He would practice little tricks with them. They seemed to enjoy cooperating when Norman would put a little corn on his tongue and let the birds come and peck it away. Hours would pass as he experimented with his winged friends in this manner.

At the end of every day he used to wonder where his friends went. Thousands of pigeons seemed to just vanish when night came. Norman had heard that pigeons have a small magnet in their heads that helps them navigate by the earth's magnetic field. He decided to try to measure this field. Short of trying to stick a paperclip to a pigeon's head, what technology could he use? Since he must subtract the earth's magnetic field from this measurement, just how strong is the earth's field in most places?

Reply to Butch Shadwell at [b.shadwell@ieee.org](mailto:b.shadwell@ieee.org) (email), 904-223-4510 (fax), 904-223-4465 (v), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328. (<http://www.shadtechserv.com>) The names of correct respondents may be mentioned in the solution.

## June 2005 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7 <i>5:30PM: IEEE FWCS ExCom Meeting, TECO Hall, Tampa</i>	8	9 <i>8AM-2:15PM Power System &amp; Substation Gnd Seminar, Sank Key Sheraton, Clearwater</i>	10	11
12	13	14	15 <i>6PM-7:30 PM IEEECS/AESS/PL UG: High Speed Memory Interface with Virtex FPGAs, Clearwater</i>	16	17	18
19	20	21	22	23	24	25 <i>10AM-3PM: IEEE Student Branch Picnic</i>
26	27 <i>11:30AM: IEEE FWCS Section Mtg, Robotic Technologies, TECO Hall</i>	28	29	30		

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 Or fax your address changes to (732) 562-5445