

The SunCoast Signal

Vol. 68, No. 04, April 2022

Florida West Coast Section (FWCS). Serving 2,300 members in the following Counties: Charlotte, Citrus, DeSoto, Hardee, Hernando, Hillsborough, Lee, Manatee, Pasco, Pinellas, Polk and Sarasota



Advancing Technology for Humanity Florida West Coast Section (FWCS) Please Check the Website Often for UPCOMING EVENTS (Front Page Right Column)

https://r3.ieee.org/fwc/

The SunCoast Signal

The Institute of Electrical and Electronics Engineers, Inc.

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PE Corner Art Nordlinger, PE, Senior Member Records Retention

Chapter 61G15, Florida Administrative Code, contains two separate provisions that require licensees to retain records. The first of these provisions is found in Chapter 61G15-22, *License Renewal, Continuing Education*.

Chapter 61G15-22.008, *Record Keeping.* It is the licensee's responsibility to maintain sufficient records to demonstrate completion of qualifying professional development hours for at least two licensure cycles (four years).

This provision requires each licensee to keep sufficient records to demonstrate that the minimum number of continuing education hours have been completed. These records are to be kept for no less than two renewal cycles or four years from the close of the renewal cycle that they were earned in. So, some records may actually need to be kept for up to six years for those professional development hours that were earned close to the beginning of a renewal cycle. For example, the most recent renewal cycle ended in February 2021. If you took a CE class in March 2021, you will need to keep that certificate until at least February 2027.

The second of these provisions is found in Chapter 61G15-30, *Responsibility Rules Common to All Engineers*.

Chapter 61G15-30.009, Retention of Engineering Documents. At least one copy of all documents displaying the licensee's signature, seal which is legible to the reader, date, and all related calculations shall be retained by the licensee or the licensee's employer for a minimum of three years from the date the documents were sealed. These documents shall be maintained in hardcopy or electronic format.

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This provision requires each licensee to keep at least one copy of every document that was signed, sealed, and dated, regardless of whether it was physical or electronic. The provision requires these records to be kept for no less than three years from the date the documents were sealed. It allows the licensee to maintain these documents in hardcopy or in electronic format, provided the signature and seal can be verified. For example, in the case of an originally physically signed, dated, and sealed (embossed) document, the embossed copy can be scanned and maintained digitally provided the embossing on the original can be seen within the copy (typically accomplished by rubbing graphite over the embossing).

The provision also requires that each licensee or their employer retain all calculations relating to the signed, sealed, and dated documents for no less than three years from the date the documents were sealed. It also allows the licensee to maintain these documents in hardcopy or in electronic format.

One final word of caution. With the everincreasing push toward paperless files, and the proliferation of hacking and ransomware attacks, computer back-ups and offsite storage are more critical than ever. The loss of stored information does not alleviate the licensee from his or her obligation to comply with any of these requirements.

Whether you are a PE looking to attain required CEHs, or an engineer looking to learn something new or keep current with the latest trends in the profession, IEEE has seminars that will meet your needs. Sign up now!

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Tour - FPL Manatee 400 MW Energy Storage Facility

Date: Friday, April 22, 2022 Time (EST): Morning/AM Session – 8:30am – 11:30am OR Afternoon/PM Session – 1:30pm – 4:30 pm **Speaker:** Florida Power & Light (FPL) Storage Facility Site Engineers Location: FPL Manatee Energy Storage Facility - 19052 FL-62, Parrish, FL 34219 Cost: \$30 Members/\$60 Non-Members/\$10 Students CEU Credits: No CEU's provided for this event. Florida provider #0003849. **RSVP:** https://events.vtools.ieee.org/m/300997 - Morning/AM Session https://events.vtools.ieee.org/m/301429 - Afternoon/PM Session **ONLY REGISTER FOR ONE (1) SESSION** Seats are limited to 15 attendees per session **Questions:** Robert DeMelo - robert.demelo@ieee.org

The IEEE Florida West Coast Section PES/ IAS, in collaboration with Florida Power & Light (FPL), is bringing to the IEEE community this awesome tour of the world's largest solar-powered battery storage facility – FPL's Manatee Energy Storage Center in Parrish Florida.

This tour event will consist of 1 to 1.5 hours of classroom instruction going over the site by engineers intimate with the project, covering various engineering and construction topics related to the site. The second part of the event will be a walkdown of the energy storage facility where FPL engineers will be going through the yard, opening an isolated container to go over the battery modules, answer questions, etc.

This should be a really great event and the first in-person tour for the IEEE FWCS PES/IAS since the start of the pandemic in early 2020. Mark your calendars and register for this exciting event.

Please be mindful of required personal protective equipment (PPE). The PPE requirements for the site is long pants, boots, cotton long-sleeve shirt, and hardhat (hardhats will be provided by FPL). Please also be cognizant of the start time when you register as we will be starting promptly on time. If you are not a morning person or are driving a distance, please consider registering for the afternoon/PM session.



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Artificial Intelligence (AI)-driven iDERMS solution for Utility Scale Renewable Power Plants Lunch & Learn

Date: Thursday, May 12, 2022

Time: 12:00 – 1:00pm (log-in to the seminar begins at 11:45)

Speaker: Girish Sekar, MS - Director of Implementation, Energy for Veritone Inc.

Brian Buckley, PE - Manager of Unit Commitment, Tampa Electric Co.

Location: Webinar - Online

Cost: FREE

CEH Credits: No CEH's provided for this event. Florida provider #0003849.

RSVP: Online at: https://events.vtools.ieee.org/m/305050

Questions: Robert DeMelo - Robert.demelo@ieee.org

Distributed energy resources can deliver significant value to grid operators, consumers, and the environment, by improving grid reliability, resilience, and meeting decarbonization targets. However, this doesn't come without challenges.

This webinar will provide an overview of challenges and benefits of operating a utility scale renewable power plant, and the role an intelligent distributed energy resource management system (iDERMS) plays in it. Using real-life examples and results, you will learn how to plan, optimize, and control multiple DERs – solar and battery storage – to improve overall grid reliability and maximize your DER investments. We will also introduce Veritone's Artificial Intelligence (AI)-driven iDERMS solution and show how a renewable plant can benefit from the power of the AI.

Girish Sekar, MS is a Director of Implementation at Veritone. Girish has spent more than a decade working on smart grid and microgrid solutions for electric utilities around the world. At Veritone, Girish leads customer implementation efforts and customer success. Prior to Veritone, Girish held various roles at OATI, building the industry standard DERMS platform being the highlight. Girish earned a B.S. in Electrical Engineering from VIT University and a M.S. in Electrical Engineering from Arizona State University. In his free time, Girish enjoys watching and playing soccer, both on the field and online.

Brian Buckley, PE is a Manager of Unit Commitment at Tampa Electric Company. Brian has spent more than a decade responsible for directing shortterm resource scheduling and availability, fleet optimization, and unit commitment planning of generation assets. Currently Brian is responsible for NERC Compliance and has operated a Li-ion BESS for over two years. Brian earned a B.S. in Mechanical Engineering from Georgia Tech and is a Professional Engineer in the State of Florida. In his free time, Brian enjoys playing guitar and boating in Florida.

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IEEE Aerospace and Electronics Systems Society

Software Defined Radio (SDR)

Date:	Thursday, April 28, 2022
Time:	6:00pm—7:30 pm
Speaker:	Michael A. Mayor, MSE, PE (State of VA)
Location:	Webinar - Online
Cost:	FREE
CEH:	No CEH's provided for this course
RSVP:	Online at: https://events.vtools.ieee.org/m/307478
Questions:	Michael Mayor - michael.mayor@ieee.org

Software Defined Radio (SDR) is a radio communications system where components that have been traditionally implemented in hardware (e.g. mixers, filters, amplifiers, modulators / demodulators, detectors, etc.) are implemented instead by means of software. SDR implementations make possible and practical many features which were once impossible to implement.

This presentation will address different applications of SDRs. Software Defined Radios have significant utility for the military and cell phone services, both of which must serve a wide variety of changing radio protocols in real time. The presentation will extend to introducing Cognitive Radio Systems.

Speaker: Michael Mayor is a Consultant providing Systems Engineering Services to the Aerospace and Defense Industries in the areas of Secure Information Systems and Secure Communication Networks.

Formerly, he was Vice President / Chief Scientist, Advanced Technology Research, in the Aerospace / Communications Division of ITT Defense Electronics. In this capacity, he conducted Research and Directed the Development of a wide range of Terrestrial and Airborne Secure Wireless Communications Networks, Emitter Geolocation Systems and their Subsystems. These included: Radio Frequency Transceivers, Software Defined and Cognitive Radio Systems, Digital Receivers and Digital Signal Processing algorithms. These developments extended to the application of Digital Instrumentation to System Test and Validation.

He is a Life Senior Member of the IEEE. He holds a Master of Science in Engineering (MSE) in Systems Engineering from the School of Engineering and Applied Science, University of Pennsylvania. He is a Licensed Professional Engineer in the State of VA and a member of the National Society of Professional Engineers.

- IEEE Region 3 Senior Membership Roundup; Saturday, April 19, 2022; 12:00 pm-5:00pm Please contact Andy at andrew.seely@ieee.org to participate.
 IEEE Admission & Advancement Review Panel Meeting;
 - Saturday, April 23, 2022; Panel meets to finalize the Senior Member Applications

2022 Robofest Qualifying Competition; Saturday, April 9, 2022, Starting at 9:00 am Clearwater Main Library; 100 N Osceola Ave., Clearwater, FL 33755 www.robofest.net

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SO YOU ARE NOT A SENIOR MEMBER YET? Hermann Amaya April 2022

2022 year of Senior Elevations for FWCS-SMEC

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We have started the new session of the Senior Member Elevation process with a good step by holding the first Candidate Interviews for 2021 on January 29th leading to the first A&A Review Panel on February 19th and we will follow the Admissions & Advancement Committee Schedule for this year as indicated below. In these interviews we had the participation of 22 Senior Member Candidates ranging from Region 3 Life Members, Florida West Coast members and other R3 sections.

It is very important is to mention that we had the participation of the Piedmont Section with the presence of Clemson University who became interested in our Senior Member Elevation Program and wanted to have some of their members elevated to the rank by making use of our program. So, we provided training in advance to the actual Interviews and showed them how to conduct these meetings and carry forward the elevation process for them to become independent and perform their Senior Member Elevations. If your Section is interested in setting up their own Senior Member Elevation Program, they may contact me and we will discuss the way we could be of help to do this.

We are now preparing for the next session of the Interview meetings to take place on March 19th, 2022, leading to the next A&A Review Panel of April 23rd, 2022. I will be send out the Eligibility Notifications letting those Members that are eligible to advance to the rank of Senior Member that they must get their resume ready in accordance to the established format and send it to me right away so I can schedule you for Interview Meeting and initiate their Nomination, a process where the Senior Member Elevation Committee of FWCS will ease the dif-

Greetings to all Members and welcome to the ficulty of advancement by providing a Nominator and two additional Reference Providers for each candidate.

> So, if you receive this Notification letter, please respond keeping in mind that this is an honor that you have earned through your service to your profession and you should accept it. I will clarify that this honor in no way will change your IEEE dues and no money will have to be paid to attain it. All you have to do is not to fill out an IEEE Nomination application online, submit your dully formatted resume as indicated in your Eligibility Letter and participate in a scheduled 30-minute interview with your reference providers.

> The Admissions and Advancement Committee Review Panel meets only six times a year and they have already issued their schedule for 2022, and the A&A Review Panel will meet on February 19th, April 23rd, June 25th, August 13th, October 1st and November 19th to review the applications of all IEEE Candidates that request advancement and I hope yours will be there. The Senior member Candidate Interviews will be programmed based on these dates and will be announced to the candidates for their participation.

> We wish to extend our appreciation to everyone for your contributions to the Elevation Process. To the Senior Member Reference Providers Team goes our recognition and thanks for without their support our program could not serve the members the way it has done it to this date.

> I am very pleased to announce that all 22 new Senior Members submitted for Nomination, were elevated at the A&A Review Panel of February 29th, 2022. And here are their names:

Gupta	Ashok	Stopper	Herbert
Giles	Olin	Ferrando-Klemet	Anne
Chester	David	Rutkevicius	Marius
Patil	Mike	Balestra	Chester
Casey	Francis	Gehringer	Edward
Oliver	Dale	Croft	Robert

Razza	Tehseen		
Hawkinson	Chris		
Lao	Yingjie		
Khan	Sakib		
Kapadia	Apojova		
Harrell	Rod		

Smith	Therese		
Daniel	Bill		
Gobbi	Richard		
Hamby	Sidney		

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From McDonald's and Manholes to Signal Processing and Steganography

An interview with Richard Simard, IEEE Senior Member and a Senior Electrical Engineer by Charles Rockridge, a third-year Electrical Engineering student at the University of South Florida

In an interview with Richard Simard, an IEEE Senior Member and a retired engineer with massive experience in different fields, we explore his interesting journey and learn about his role in developing the S-280 tactical shelter, his switch to steganography after 30 years of experience, and more. The interview was conducted and written by Charles Lockridge, who is a third-year Electrical Engineering student at USF.

Mr. Simard graduated from New York's University of Buffalo in 1971. Growing up, he engaged in activities like camping, fishing, and traveling, and he recalls working at McDonald's before anywhere else. However, his interest in engineering was cultivated as he pursued mathematics in high school and surrounded himself with like-minded people. "I was kind of a geek," he says. "The people I hung around with were very studious; they loved mathematics courses."

After college, his first job was in communications–a not-so-glorious position that had him climbing into manholes. Mr. Simard continued to engage himself and expand to other fields, quickly developing a knack for special challenges like a long haul, deployable communications and putting together aspects of systems such as air conditioning, security, and remote terminals. It was not long before he was recognized and given a position in research and development at the Air Force Research Laboratory in Rome, New York.

It was there that he and a team, within 14 months, developed the S-280 tactical shelter for communications operations abroad. This was a highlight of Mr. Simard's career, demonstrating both technical and interpersonal skills to accomplish a task in a very tight window. He was heavily involved with the military and briefed many VIPs, including generals, senators, and secretaries like Hillary Clinton. In fact, Mr. Simard points to his involvement in the military as one of the things which kept him on his toes due to the cutting edge nature of that environment. Even in the middle of his career, he continued to innovate on the frontier of steganography research. He had frequent brainstorming sessions with Dr. Jessica Fridrich while they explored what was a new field at the time. Mr. Simard describes it as "applying signal processing technology and mathematics to digital images to embed information at the pixel encoding level."

With steganalysis and digital data forensics, he could work inside the bits of data in an image to get the information he wanted. Was there embedded data in an image? What digital camera captured the photo? It was questions like these that he specialized in answering. In 2000, he was awarded patent No. 6,094,483 for Secure Encryption and Hiding of Data and Messages in Images with Dr. Jessica Fridrich.

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QUESTION: How has the IEEE been of value to your career? Are there any specific examples of how it enabled you professionally?

Mr. Simard has reaped many benefits from the organization. He attended IEEE-sponsored conferences on image processing and communications, listened to talks, and was a profuse reader of academic papers. He says that the access to research papers was a big thing for him; if something he read sparked an idea, he would email the author to discuss potential applications. When Mr. Simard was getting married and looking for insurance policies, the IEEE provided not only research papers but also a low cost life insurance policy. As a result, he describes it as a very professional organization both career and healthwise.

QUESTION: Do you have any predictions for the future of your field?

Mr. Simard says that more advanced integration of sensors and systems is the way to go. "We see articles about autonomous cars driving on highways," he says. "That's the integration of visual, radar, position sensors coming together for the objective of being able to drive."

QUESTION: I see in your notes that you cited no regrets or mistakes. Did you experience any major setbacks in your projects which were used as learning experiences? For instance, during the development of the S-280 Shelter?

Rather than experience huge setbacks, Mr. Simard had frequent meetings with his team strictly to analyze what *could* go wrong and how they would respond. This diligence and preparation saved a lot of headache, limiting most issues to minor software problems.

LESSONS LEARNED/ADVICE:

Mr. Simard puts a big emphasis on education, insisting "it should not stop when you finish college." He says to read research magazines, IEEE publications, and take advantage of company benefits which could pay for advanced degrees.

"What worked for me–and it may not work for everybody–I call it review and re-stimulate your thinking skills at one-third career intervals. Two thirds point in my career, I again started taking courses in areas I wasn't necessarily working in but thought would be important for the future. Almost three-thirds through, in other words, 28-30 years I'd been working, I got into steganography."

Among his advice for other engineers is to be a mentor and encourage colleagues' growth. Encourage coworkers. Encourage innovative thinking. Help colleagues to advance positions even if they end up leaving your team. In his words, "Facilitate their happiness."

Calling ALL Life Members!

CQ CQ CQ! Calling all Life Members! The Life Member Affinity Group (LMAG) has been somewhat dormant since the COVID pandemic, but we are ready to swing back into running an active meeting schedule. We are looking for input from our members.

What topics would you like to be presented? What facilities would you like to tour for a technical presentation? Are you able to host a meeting to enlighten our members on your recent or past engineering projects?

Feedback is requested so we can plan an interesting slate of meetings for the year. Please respond to me or any of the Section officers. We also encourage joint meetings with other Florida West Coast Section technical societies to share meetings of common interest across disciplines.

Richard Beatie, PE Senior Life Member Chair, Life Member Affinity Group r.beatie@ieee.org

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Engineer's Week Banquet By Sean Denny

The 2022 Tampa Bay Engineers Week Banquet was held at Bryan Glazer Family Jewish Community Center on February 24, 2022. I arrived early at 5:00pm to attend the pre-dinner networking. I greeted the guests while enjoying the food, drink, and engineer vendors during the pre-dinner networking in the ante-room lobby. I welcomed each Lignell Teacher, IEEE Members, and School Officials. Ι interviewed the Lignell Teachers Danielle Smith and Adam Ritzenthaler. I met Danielle's parents and her nominator Kimberly Watts. Robofest Chair Emma Alaba attended at my request and helped take photographs at the dinner. After 6:30pm, we were invited into the ballroom for the Banquet.

Don Germaise took the position of Master of Ceremonies to announce the theme "Reimaging The Possible" and calling everyone to take a seat. Eight Engineering Organizations worked together to organize the 41st Engineers Banquet. The Students from six Engineering Organizations won Student Engineer Awards first. IEEE Student was Noah Hamilton from USF.

Then we enjoyed dinner. I had Chicken, Shrimp, Rice, Asparagus, salad, and roasted pear cheesecake. Mr. Germaise announced the Lignell winners individually as I filmed them on the stage. The committee under the leadership of Suzy Folsom and Michelle Navar chose two Hillsborough County teachers for the Lignell Award this year which included: Adam Ritzenthaler (Alonso High Chemistry & Engineering) and Danielle G Smith (C Leon King High Chemistry).

We took group pictures with the winners. David O'Brien showcased a tribute to Jim Howard (IEEE) (1950-2020). Suzy Folsom introduced the Keynote Speaker Dr. Tracy Fanera. She discussed how her research of Red Tide at MOTE Marine Aquarium led to working on a Hydroponics project with NASA. Ariana McGuirk won the IEEE Young Professional Award and Lisa C Lohss was our IEEE Engineer of the Year. The committee took a bow and had a group picture on the stage before going home.



Award Presenters on Stage



Lignell Award Winners: Danielle G. Smith and Adam Ritzenthaler

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