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Message from the chair

Dear IEEE members and friends,

I am very excited to start a new year as a volunteer and humbled to know a few people actually voted for me. I want to wish you all a belated happy new year and thank all existing and former volunteers of our section, sub-sections, affinity groups and local society chapters! Without you we simply could not exist.

Reflecting on the past year of activity, we had some lingering difficulties but nevertheless we prevailed and won the Best Large Section award in Canada. We maintained healthy fiscal management of our resources and expenses, and our ICF managed Vancouver Scholarship Fund continued to grow. Our public image continued to improve and you can see photos of our former Chairs Kouros Goodarzi and Prof. Dave Michelson in the latest IEEE Canada Review publication.

The New Year brings some challenges and new opportunities. We continue to look for volunteers and we have a few open positions. It only takes a few good people to make history and we need you here! This year we have some old business to complete (for example our centennial monument) and the restructuring of some of our Joint Chapters. We would like to make sure we represent and serve all technical societies and local member's needs. We excelled in the past with WIE, TISP and HIC activities and also established a Consultants Network affinity group. We will look into further activities such as social networking and career fairs to engage a maximum number of members. As for technical meetings, I can see a growing problem of locating affordable presentation space. We would strive to create alliances and hold joint events with other local organizations. A fund raiser combined with entry by donation worked well in the past.

Over the last few years we have reduced our dependence on mailing the newsletter, in line with the trend to electronic communication and social media. But we need to progress further in enhancing its immediacy, while recognizing the gap between those who are not comfortable with twittering, blogging, etc. and the GOLD members who cannot survive without the latest innovations.

We will have to sharpen our skills on this front. I want to use this opportunity and call for fresh new ideas for activities. For example would anyone be interested to join a meeting remotely via web conference? Does anyone have any fresh ideas for a social event activity and location? We are listening and promise to consider suggestions.

Alon Newton SMIEEE
IEEE Vancouver Chair

Jean-Marc Moreau
Agilent Technologies

Wednesday 13 February
10:30 -12:00

UBC Electrical and
Computer Engineering
Room 418 MacLeod Bldg
2356 Main Mall,UBC

Information
Joint Aerospace and
Electromagnetics chair
Dave Michelson
davem@ece.ubc.c

Non-Linear characterization of active components - X-Parameters and new VNA technologies

In today's ever changing communications field, the demand for higher bandwidth and performance is applying pressure to the design cycles to the modern radio. Historically narrow band communications relied on design methods that could us compact models for active devices. With the demand for wider bandwidth communications and ever increasing power efficiency goals the focus on the non-linear interactions of devices and circuits is needed.

New Vector Network Analyzer technologies allow the efficient measurements of non-linear properties of active components. The new data format, X-Parameter, will be introduced where linear and non-linear characteristics of devices can be contained within this single behavior model. This non-linear model can then be used to design your systems with minimal hardware iterations.

Speaker: Jean-Marc Moreau is an Application Engineer for Agilent Technologies. He has been working with customers across Canada and mostly in his home area around Toronto Ontario, since 1998. He has helped Universities and private companies with emerging technologies and the application of instrumentation to make accurate measurements.

He works closely with the RF and Microwave communication industry, both in manufacturing and Research and Development. As an integral part of his job, Jean-Marc has delivered technology and Instrument training and short courses in RF, microwave and radio test solutions. His experience spans test technologies from high power transistor and lumped elements to large scale system level testing.

IEEE Joint Aerospace and Electromagnetics Chapter

Lee Vishloff
Tech-Knows Services

Wednesday 06 February
8:30am to 4:00pm

Sheraton Wall Centre
Hotel, **Room TBD*
1088 Burrard St,Van. BC

Information
Joint Aerospace and
Electromagnetics chair
Dave Michelson
davem@ece.ubc.c

*see Twitter article
bottom next page

Overview of Machine-to-Machine (M2M) for engineers and managers

This one-day course was developed by Wavefront for the IEEE Communications Society's Education Board. It provides engineers and managers with the insights and perspectives required to take their cellular-based Machine-to-Machine (M2M) solutions from promising concept to marketplace success by successfully navigating the maze from analysis, design, approvals and support, all the way through to marketing options and launch.

At the end of the course, attendees will be able to:

- Define M2M and clarify the main components that comprise a cellular M2M solution
- Understand the processes involved in bringing a solution to the M2M marketplace.
- Describe the wireless technologies and hardware available, and the selection criteria for an M2M solution.
- Explain the Regulatory, Industry and Carrier Certification Processes for wireless devices and what certification may be required depending on the solution and country.
- List steps to consider when designing the solution up front in preparation for ease of certification.
- Describe the Over-the-Air Performance Considerations.
- List the M2M platforms available to manage the SIMS/Devices.
- Explain how to prepare for deployment of an M2M Solution, and determine whether it is ready to serve customers.
- Describe the M2M business case and how to select an appropriate business model.

Fee: $400 + HST (includes lunch and refreshments)
Register for this course as part of your Wavefront M2M summit registration and save $100!
More information: http://wavefrontsummits.com/m2m/#ieee

IEEE Joint Aerospace and Electromagnetics Chapter

An IEEE Vancouver Consultants Network Affinity event

Monday 18 February - 7pm

Room 4247
Douglas College
New Westminster

Information
CNA chair
Jim McKay
jbmckay@telus.net

Marketing and lead finding for engineering and technical consultants

The topic of the presentation is intended to improve the audience's understanding of the process of technical marketing and sales lead generation. Using examples from his experience as a consultant to high-tech & engineering companies Mr. Speed will show how to prepare to launch a consulting practice and maintain a steady flow of business.

Speaker: David Speed P.Eng. graduated from UBC with a BASc in Mechanical Engineering and is a business leader and technical sales professional with over 25 years of experience in the industrial and municipal utility fields. David has built sales teams and successfully developed new business using a strategic approach to sales. He is currently providing business development consulting services to high-tech and engineering firms and is partnering with an Alberta-based engineering and construction company to establish a BC branch office for the company.

Please RSVP to Jim McKay at jbmckay@telus.net so we know how many to expect! We encourage you to pass this invitation on to others in your network who might be interested in attending.

Our new Signal Processing chair Ivan Baljic

Dear Members,

At the last IEEE Vancouver Section Executive Meeting held at BCIT on January 9, 2013, I was appointed the Chair of the Signal Processing (SP) Chapter. I would like to take this opportunity to thank the executive committee for the appointment, and to introduce myself. I would also like to thank the past Chairs of the SP Chapter, Dr. Z. Jane Wang and Dr. Mehrdad Fatourechi, for their help during the transition process and advice on running the Chapter.

I am an Associate Professor of Engineering Science at Simon Fraser University. My research and teaching interests revolve around signal processing, especially image and video processing, compression, and communications. I have always viewed the Signal Processing Society SPS as one of my homes within IEEE, so I look forward to engaging with the members of the signal processing community, and the broader
engineering community, at the grassroots level in the Vancouver Section.

As we start making the schedule of activities for this year, I would like to encourage all members, as well as those who may be thinking of becoming members, to contact me regarding initiatives and ideas for future events. These events may be formal, such as workshops, talks and presentations by professionals in the field, but also less formal, community-building events. As an example of a possible format for these less formal events, please google "SFU Philosophers' Cafe," an award-winning series of informal meetings at various locations ("libraries, community centres, beaches, and bistros") around Metro Vancouver, whose goal is to stimulate discussion on a variety of topics of interest to the community. I look forward to meeting you in person and working with you within the SP Chapter of the IEEE Vancouver Section.

Ivan V. Bajic, Ph.D., P.Eng.
ivan_bajic@ieee.org www.sfu.ca/~ibajic

IEEE Vancouver Contact uses Twitter for updates @ieeecontact

Sometimes IEEE Vancouver events materialize too late for publication in Contact. Other times events are published but are missing some detail, such as venue or starting time. Two such cases occur in this issue:
1 - the CNA event, above, is missing a location;
2 - the M2M event, previous page, is missing a room number

As soon as the missing data becomes known @ieeecontact will broadcast a tweet containing the missing detail. Each tweet will contain a hashtag specific to the event organizer. In the case of the CNA event, the tweet will contain #CNA, and the M2M tweet will contain #JAE, the hashtag for the event's organizing entity.

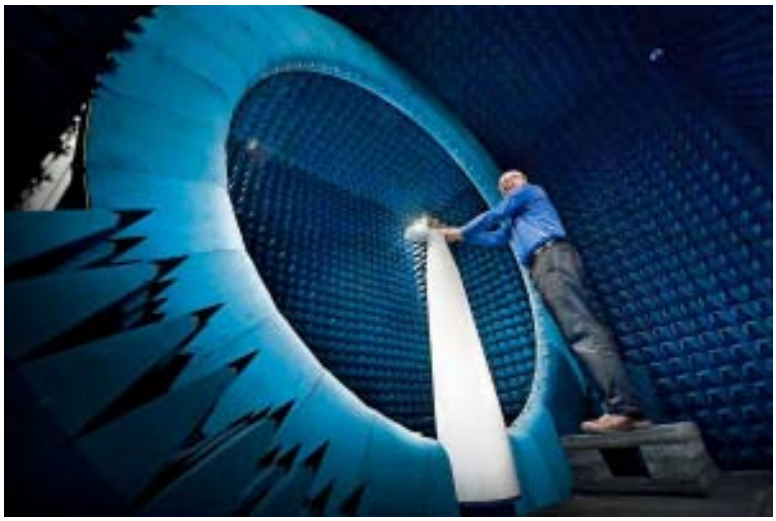
Followers of @ieeecontact will thus be able to filter for tweet updates of particular interest. The full set of hashtags used by @ieeecontact are maintained in the 2013 Roster available under the 'Contact Us' tab at www.ieeecontact.org. For convenience, they are also listed in the next column.

@ieeecontact hashtags used in Contact update tweets

Northern BC sub-section	#NBC
Okanagan sub-section	#OK
Joint Aerospace & Electromagnetics	#JAE
Joint Applied Physics	#JAP
Joint Circuits and Systems	#JCS
Joint Communications	#JCOM
Joint Computing	#JC
Joint Chapter CS-23/RA-24/SMC-28	#JCRS
Consultants Network affinity	#CNA
Electron Devices	#ED
Engineering in Medicine & Biology	#EMB
Joint Industry Applications & Electronics	#JIA
Joint Management	#JMGT
Joint Oceans, Geoscience & Remote Sensing	#JOG
Joint Power & Energy	#JPE
Power Electronics	#PE
Signal Processing	#SP
Joint Solid State Circuits & Technology	#JSS
Women in Engineering affinity	#WIE

Collaborators drawn to SFU's new wireless communications lab

The Sierra Wireless Mobile Communications Laboratory at Simon Fraser University helps to place B.C. at the forefront of radio science research. The laboratory, comprising world-class antenna research facilities such as spherical and planar near-field pattern measurement chambers, supplements SFU's existing wireless communications equipment and knowledge, and extends the outreach of SFU's research by fostering collaborations in B.C. and around the world. Wireless communication is seen in consumer devices from cell phones to computers, and provides the majority of connectivity to the internet. The technology, while already extremely advanced, is undergoing constant improvements, driven by soaring public demand and the need to share the finite, shared resource of the radio spectrum.



There are hundreds of wireless companies in B.C., and very few can afford specialized performance testing equipment such as those used in pattern measurement. Such companies can have a new advantage through the SFU facility. "SFU is engaging new research partners and industry in B.C.," said SFU Engineering Science professor Dr. Rodney Vaughan. "Upcoming projects include developing new antenna concepts for satellite communications; new micropower on-chip antennas; high power microwave antennas for 'green energy' vacuum food drying; and spatial signal processing for acoustic noise reduction which uses similar processing to multiport antennas for interference suppression."

Each of these applications depends on patterns in completely different ways. Accurate pattern measurement is an extremely complex process. An antenna's pattern – the directional intensity - is its most complicated fundamental property. In some cases the pattern covers all directions, like the light from a bulb, and in other cases it is directional, like the beam from a flashlight. It is usually represented mathematically with a large set of numbers. Pattern measurement involves precision robotics, radio frequency electronics, large scale data acquisition, complicated mathematical transformations and computing, and other signal processing, all working together in order to estimate vector 3D spatial patterns at different frequencies. For proper characterization of the pattern, tens of millions of measurements are taken from multiple, precisely defined spatial locations and orientations, and at multiple, precisely defined radio frequencies.

The Sierra Wireless Laboratory is one of the most advanced in the world, allowing patterns to be measured quickly. The measurements must be executed in a closed environment, which suppresses reflections of the radiowaves used for the measurements, and which is shielded from all other radiowave signals. The raw measurement data is processed to derive the pattern, and then further mathematical manipulations derive other useful properties of the antenna.

Sierra Wireless seeded the funding to develop the Mobile Communications Laboratory. This gift enabled further support from the Canada Foundation for Innovation (CFI), Western Economic Diversification Canada and B.C.'s Knowledge Development Fund. Additionally, Sierra Wireless and SFU established an endowed Professorship in Mobile Communications, held by Dr. Rodney Vaughan. "Sierra Wireless has made a long-term commitment to strengthening the relationship between industry and local universities, and to promoting excellence in research and training at SFU," said Jason Cohenour, President and CEO of Sierra Wireless. "We believe that investments in building the wireless industry ecosystem in British Columbia provide a lasting positive impact on both the industry and the community."

The Sierra Wireless Lab fosters a two-way flow of knowledge between SFU and industry. The presence of the Laboratory has already led to new interactions with many companies, from household names to new start-ups. SFU's research in radiowave propagation, communications signal processing, antenna design, and antenna evaluation methods will be used by industry for new and improved products.

Wavefront Wireless summits celebrate Canadian wireless innovation

The second annual Summits Week is focused on addressing industry-specific challenges with mobile and wireless technologies, including machine-to-machine, Bring Your Own Device, big data, and enterprise mobility applications.

In so many ways, M2M technologies are changing the way we do business. It's estimated there will be 50 billion connected devices by 2020. In 2011 Cisco estimated there were 10 billion networked devices worldwide. The innovation and business opportunities for Canada are significant, and there's no question we should be seizing the leadership initiative in the space.

This year's Summits features detailed presentations and valuable discussions around three vital industries, each with massive opportunities: health, energy, and transportation. The Wireless Summits are bringing together global enterprise industry leaders, wireless and M2M solution providers, and mobile operators. The lineup of keynote speakers is impressive, including Google's Developer Advocate Tim Bray; Deloitte's CIO Terry Stuart; Henning Schulzrinne CTO of the FCC; and many more industry leaders from the likes of HP, RIM, Sierra Wireless, Rogers Wireless, Deutsche Telekom, Volkswagen, and GE.
On February 4 and 5, Wavefront's 2013 M2M Summit will be featuring leading machine-to-machine technology developers, and global business leaders sharing their vision for driving innovation, accelerating ideas and growing market opportunities. It promises to be a great learning opportunity. Attendees will appreciate conversations about industry-specific best practices on ROI models, implementation, and business processes related to healthcare, energ, transportation, and manufacturing sectors.

February 5 and 6 features the Business Summit, which is a mobile-focused event connecting business leaders, technologists and systems integrators. Discussions will highlight business challenges, innovation solutions and strategy, and share best practices in wireless, including BYOD, big data, and mobile commerce.

According to James Maynard, the CEO of Wavefront, "The Wireless Summits bring to life much of what we strive to achieve at Wavefront—facilitating the success of Canadian wireless companies by connecting them with the critical resources, partners and opportunities that accelerate growth and commercialization," Maynard added. "We manage to do all of this in just three days and under one roof, which is remarkable."

Considering that more than 84% of Canadians carry mobile devices—making today's business workforces and consumers not only mobile-enabled, but "mobile-reliant"—this event will be hitting all the right notes. Don't miss out on the learning experience, and the opportunity to get better connected. Tickets are still available; register at http://www.wavefrontsummits.com/

IEEE Vancouver AGM 2013
Saturday 23 March
06:00 - 10:00pm

IEEE Vancouver is pleased to invite all members to join us for this year's Annual General Meeting. We have an exciting evening planned for our members and their guests, a fabulous location overlooking the Burrard Inlet, delicious food, outstanding speaker, and the opportunity to network with your friends and colleagues.

AGM speaker
Isidor Buchmann
Cadex Electronics Inc.

Vancouver Convention Centre (East)
Room Number: Parkview Terrace
999 Canada Place, Vancouver

Register online at
https://meetings.vtools.ieee.org/meeting_registration/register/15965

Registration deadline: 20 March noon
$25 students and life members
$35 members
$45 non-members (1 guest per member only)

Register before 01 March noon for 20%early birddiscount
$20 students and life members,
$28 members, $36 non-members.

Online payment is available and encouraged in the registration process. Guests should be registered separately using the same link. Please also make sure you have included your IEEE membership number and a contact email for yourself and your guest. For more information, or to arrange for other means of payment, please email Steven McClain at stevenmcclain@ieee.org.

Join our social media team!

IEEE Vancouver is preparing new initiatives for social media including Facebook, twitter, LinkedIn and other channels.

If you have experience in setting up, designing and managing social media, we want to hear from you. Please consider joining our social media team. The Vancouver section twitter feed is @ieeevanc

For more information, please email Communications committee chair Pieter Botman, p.botman at ieee dot org.

IEEE Vancouver 2013 Roster

www.ieeecontact.org/2013Roster.pdf

The IEEE Vancouver roster of volunteers has been updated for 2013 and is maintained under 'Contact Us' at www.ieeecontact.org.

Note that the roster also contains a list of hashtags used by Twitter feed @ieeecontact to distinguish among tweeted updates to specific chapter, affinity, and sub-section event organizers.

ICICS

Electrical and Computer Engineering

IEEE VANCOUVER SECTION

ICICS-ECE-IEEE Workshop on Future Communications and Multimedia Systems

CONNECTING PEOPLE AND MACHINES

Featuring

- Smart Cities – Technologies, Big Data and Citizens
- The Status of Digital Watermarking
- The Future of Internet TV

Friday, March 8, 2013
8:00 am – 4:30 pm
UBC Vancouver Campus
Kaiser Building
2020 – 2332 Main Mall

For free registration, technical program and other details, please see

www.icics.ubc.ca/workshops/comm2013

a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

How to be an independent contractor/consultant

Barry Hagglund
IceLight Solutions

Wednesday 27 February
6.00 – 8.00 pm

BC Hydro
Edmonds Centre Room
6911 Southpoint Dr Bby

Light refreshments served

Information
GOLD chair
Ophir Kendler
ophir2k@ieee.org

- Are you thinking of career as an independent consultant?
- How should I proceed?
- How to plan for it?
- What are the pitfalls to avoid?

A seasoned professional, Barry Hagglund is here to guide you!

Speaker: Barry Hagglund, Vice-President and partner at IceLight Solutions, is a seasoned executive in the technology industry. Before founding a company that developed technology to save lives of emergency response personnel, Barry successfully managed large engineering development teams for companies in the semiconductor industry and the telecommunications industries such as PMCSierra.

Mr. Hagglund holds a Bachelor's Degree in Electrical Engineering from the University of Saskatchewan.

GOLD
Graduates Of the Last Decade