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Dimitar Filev
Ford Motor Company

**Distinguished Lecturer**

Friday 16 January
3 - 4 pm

Kaiser Building
Room: 2020/2030
UBC

Sponsored by the joint chapters of IEEE Control Systems, Robotics and Automation, and Systems, Man and Cybernetics socities and IEEE Joint Industry Applications and Electronics


**Information**
CS/RA/SMC
Joint chapter Chair
Ryozo Nagamune
nagamune@mech.ubc.ca
or
Jeff Bloemink
Joint IAS Chair
j.m.bloemink@ieee.org


# Evolving embedded systems and their vehicle applications

## Postponed to March - TDB

The emerging trend of increasing flexibility, adaptation, and autonomy of embedded control and information systems is the driving force behind the evolving systems paradigm. Evolving systems are systems with flexible model structure that adjust to changes which cannot be solely handled by parameter adaptation. Evolving intelligent systems develop their structure and knowledge representation through continuous learning from data and interaction with the environment. They exploit synergies between two powerful concepts – real time data granulation and machine learning - with model structure that may include regression models, neural networks, fuzzy, and/or stochastic models.

Practical applications encompass a wide range of systems with variable parameters and structure, and multiple operating modes. This presentation provides an overview of the multiple facets of evolving systems theory and describes some of their automotive applications to adaptive process control, automated calibration, anomaly detection, driver state estimation, and fuel economy optimization.

**Speaker:** Dr. Dimitar P. Filev is the Executive Technical Leader - Intelligent Control & Information Systems, Ford Research & Advanced Engineering. He is conducting research in modeling and control of complex systems, intelligent control, fuzzy and neural systems, and their applications to automotive engineering.

He is the recipient of the 2008 Norbert Wiener Award of the IEEE SMC Society, the 2007 IFSA Outstanding Industrial Applications Award, and the highest Ford Motor Company corporate awards – he was awarded 6 times with the Henry Ford Technology Award and with the 2010 Inaugural Dr. Haren Gandhi Research & Innovation Award for development and implementation of advanced automotive technologies, and for his long term research contributions.

He has published 4 books and over 200 papers, and holds over 60 US and foreign patents. Dr. Filev is a Fellow of IEEE. He received his PhD. degree in Electrical Engineering from the Czech Technical University in Prague in 1979.

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1951-2011 IES 60th anniversary

# EMC failures
# - hidden circuits and antennas

Lee Vishloff
Tech-Knows Services

Tuesday 17 February

5:30 PM

Alpha Technologies Ltd. 7700 Riverfront Gate Burnaby, BC

This 60 minute presentation is aimed at the electronics circuit designer trying to resolve or prevent EMC problems in digital and analog circuits.

The talk will identify the commonly created structures that result in EMC radiation that are part of the electronic circuit being designed, but which are not visible in the commonly used schematic capture tools. Out of sight, out of mind - until we fail EMC.

These hidden circuits and antennas are at the root of many common EMC failures. By examining the EMC problem from a wireless communications perspective with sources, channels, antennas and receivers we can gain a perspective that helps us to identify and resolve EMC issues at the appropriate location in our product, and at the lowest cost. The talk will also discuss some practical approaches used to defeat the hidden elements of our circuits including the PCB stack up, planning ground returns, ribbon cables, filtering techniques and others.

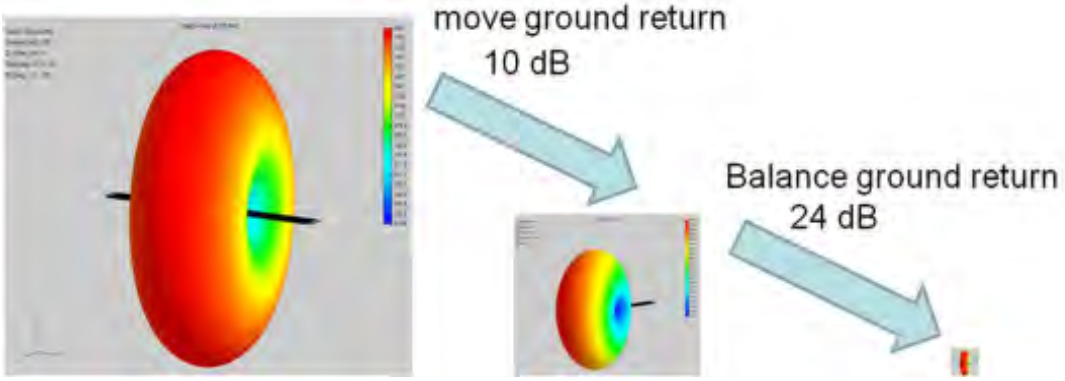
There will be ample time for questions and discussion.

**Speaker:** Mr. Vishloff is the principal engineer in a wireless consultancy working in the areas of cellular-based M2M solutions, short-range wireless products and EMC Consulting. He is a regular contributor to the IEEE Communications Society training program teaching several courses in Wireless Technology.

He has over 30 years of experience in wireless systems and product design. During his career he has designed a wide range of wireless products including satellite systems, terrestrial radio systems, short-range video, rural communications, aeronautical and others. Lee brings a wide range of practical experience with hands-on and management experience in wireless telecommunication systems, modem, RF, analog, digital, embedded firmware and mechanical design technologies.

He has spent the majority of his career working with equipment manufacturers with stints in the semiconductor and consulting businesses.

Lee has a degree in Electrical Engineering from the University of British Columbia and completed his management education at Simon Fraser University and the AEA/Stanford Executive Institute. He is a Professional Engineer, Senior Member of the IEEE and an IEEE Certified Wireless Communication Professional. He is also active in the IEEE Vancouver executive (2014 Treasurer and 2015 Vice-Chair candidate)




**Information**
Joint Aerospace and Electromagnetics Chairs
Dave Michelson
davem@ece.ubc.c
Steven McClain
StevenMcClain@ieee.org

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