Seminar by IEEE ComSoc/BTS/CES Ottawa Joint Chapter, IEEE PES Chapter, IEEE Ottawa Section, and IEEE Algonquin College Student Branch are inviting all interested IEEE members and nonmembers to *IEEE Communications Society distinguished lecturer* on

Autonomous Aero-Visual and Sensor Based Inspection Network for Power Grid Asset Monitoring

by

Dr. Arun K. Somani, Anson Marston Distinguished Professor,
Iowa State University, Ames, IA, USA

DATE: Thursday September 22, 2011
TIME: Registration, Refreshments & Networking: 6:30 pm.; Seminar: 7:00 pm - 08:00 pm
PLACE: Algonquin College, Room T129, T-Building, 1385 Woodroffe Ave., Ottawa, On., Canada
PARKING: Parking area # 9. Please respect restricted areas. No fee after 5:00 p.m.
ADMISSION: Free. Registration required. To ensure a seat, please register by e-mail contacting: Wahab Almuhtadi at almuhtadi@ieee.org.

Abstract

This talk introduces a theoretical and experimental program to develop the inspection and fault detection technology needed to integrate MAVs for persistent intelligence, reconnaissance, maintenance and surveillance for obscured or logistically challenging assets in non-urban environments. The design is explained using a context of heterogeneous deployment of wireless sensors for real-time asset monitoring by anticipating exceptional conditions and building the system to cope with them. The system converges towards an error-free state with self-stabilization, the ability to fall back to a safe mode in a financially feasible manner. This sophisticated mechanism requires a real-time capacity estimation capability to sustain the quality-of-service, which can be achieved by a distributed sensor network. We discuss issues in design and information propagation in such sensor clustered topology, optimization for power-aware networking, and link and node capacity assignment to achieve the desired goals.

Biography

Arun K. Somani is currently Anson Marston Distinguished Professor of Electrical and Computer Engineering at Iowa State University. Prior to that, he was a Professor in the Department of Electrical Engineering and Department of Computer Science and Engineering at the University of Washington, Seattle, WA and Scientific Officer for Govt. of India, New Delhi from. He earned his MSEE and PhD degrees in electrical engineering from the McGill University, Montreal, Canada, in 1983 and 1985, respectively.

Professor Somani's research interests are in the area of computer system design and architecture, fault tolerant computing, computer interconnection networks, WDM-based optical networking, and reconfigurable and parallel computer systems. He has taught courses in these areas and published more than 250 technical papers, several book chapters, and has supervised more than 100 graduate students (35 PhD students). He is the chief architects of an anti-submarine warfare system for Indian navy, Meshkin fault-tolerant computer system architecture for the Boeing Company, Proteus multi-computer cluster-based system for US Coastal Navy, and HIMAP design tool for the Boeing Commercial Company.

He has served on several program committees of various conferences in his research areas, served as IEEE distinguished visitor and IEEE distinguished tutorial speaker, and delivered several key note speeches, tutorials and distinguished and invited talks all over the world. He received commonwealth fellowship for his postgraduate work from Canada during 1982-85, awarded Distinguished Engineer member of ACM, and elected a Fellow of IEEE for his contributions to “theory and applications of computer networks.”