



**THE
OTTAWA**

AFCEAN
March 2004

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AFCEA Golf Tournament

May 27, 2004 at The Meadows Golf Club.

For more information go to: www.afcea.ca/ott/golf.htm

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SPONSORSHIP

The Ottawa Chapter of AFCEA wishes to thank Elytra for sponsoring the March PD Meeting.

PD Presentation Report

**Security Issues in Voice over Internet Protocol (VoIP)
Randall Sutton, President Elytra Enterprises Inc.**

March PD Meeting Presentation, reported by Dave Edmunds

Mr. Sutton opened by outlining his presentation, which covers the rising trend in VoIP traffic, an introduction to protocols and technical terms, security issues, and preventive measures.

He stated that many people do not realize that many of their telephone conversations are now actually (Continued on Page 2)

New Members

Corporate Members:

Bell Canada – Enterprise: Gary Cameron, Robert Huband, Murray Mason, John Ouellette, Louis Savoie and Rick Tingman; Emcon Emanation Control Ltd.: Robert Moon; MacDonald Dettwiler & Assoc.: Andy Bobas, Lee Carson, Terry Doyle, Claude Gelin, Joe Hood, Simon Jacques, Dana Maxwell, John Moloney, Allen Stotz and Eric Widdis; Northwind Systems: Brenda Peever; Telesat Canada: Elaine Robichaud; Unisys Canada Inc.: Rebecca Huff and Steven Johnston; Validian Corporation: Steve Brown, Albino Genovese and Andre Maisonneuve; Xwave Solutions: Barry Dulan, Michael Gagne, Ron Schneider and Jeremy Wallace.

Individual Members:

Glenn Beaton, Ahearn & Soper Inc.; John Crupi, IBM Canada; Peter Gartenburg, L-3 Communications; Doug Gau, NDHQ/DGEAS; Paulette Hatch, PNH Consulting; David Langlois, ING Engineering; Luigina Polidori, Douglas Romain and Debbie Wolfenden of itex.

Chapter website: www.afcea.ca/ottawa.htm

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Security Issues in VoIP

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being passed over the Internet. Six years ago, 150 million minutes were passed using VoIP; two years ago, traffic had climbed to 19 billion minutes, accounting for 11% of the world's international traffic.

Mr. Sutton said that one of the major protocols used for VoIP is the Session Initiation Protocol (SIP) developed internationally by the Internet Engineering Task Force (IETF) for voice, lately expanded into video and Instant Messaging. Both SIP and H.323 handle basic call-control tasks (such as dial tone) and provide similar functions as standard telephony, i.e., caller ID, call transfers, etc. H.323 is the International Telecommunications Union (ITU) umbrella standard for multimedia communications (voice, video, data) over Local Area Networks (LANs). Megaco/H.248 is a joint IETF/ITU Media Gateway Control Protocol which separates call control from media conversion. A Session Controller connects H.323 (Gatekeeper) endpoints and SIP endpoints (SIP proxy server). Mr. Sutton recommends the "Protocol Dictionary" at <http://www.javvin.com> for further details on protocols. SIP differs from H.323 in that most of the intelligence is in the user IP phone, which therefore operates in a more peer-to-peer fashion. H.323 uses "dumb phones"; the intelligence resides on the server. H.323 has an advantage as a replacement for legacy PBXs, while SIP has a much broader scope for non-VoIP applications.

Turning to security issues, Mr. Sutton pointed out that historically, using landline telephones, the worst you normally contemplated was loss of dial tone, whereas now there are all the standard Internet attacks, such as virus, spam, fraud, intrusion, and brute force attacks — denial of service. He said that many vulnerabilities are being found in protocols and implementation of protocols, leading to severe denial of service, buffer overflow, and loading of malicious code. Major software producers are trying to discover vulnerabilities and prepare patches for their products. SIP phones frequently don't comply with the SIP specification, leading to failed device registration or authentication and network crashes, but most problems arise when transferring SIP calls outside the corporate network, where vendor shortcuts lead to incompatible protocols. They may also lack compatible failure fallback systems.

To open his discussion of preventive measures, Mr. Sutton discussed the expectations we have of a telephony system: Reliability, Resiliency, Business Continuity/Disaster Recovery, and Security & Privacy. He then presented important steps to securing a VoIP network. Voice should be separated from data by software separation of virtual LANs, and routing through robust firewalls occupying a separate voice zone. Close off unused voice ports. Use strict device authentication with protection against spurious addresses and unauthorized intruders. Use a server which makes dynamic IP address assignments, or use static addresses under a rigorous control system. Use encrypted text messaging. Use Advanced Encryption Standard (AES) to protect voice media. Encrypt logistic traffic. Use encrypted Virtual Private Networks (VPN).

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AFCEA Membership Information

For information about joining AFCEA, or to make changes to your membership profile (e.g. change of address), visit the AFCEA International website at www.afcea.org - click on "Join/Renew" or check the Portal.

If you should encounter problems, call 703-631-6158 or email services@afcea.org.

The AFCEA Ottawa Chapter would like to express its continuing gratitude to TIME ICR for providing its voice message system.



Security Issues in VoIP

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To close his presentation, Mr. Sutton displayed a diagram showing how VoIP can be set up as a VPN using tunnelling. Tunnelling involves packets of bits (e.g., encrypted voice) being carried through the firewall as the content of normal IP packets (e.g., data bits not enciphered).



Randall Sutton receives certificate from AFCEA Ottawa Chapter President Debbie Wolfenden

[Mr. Sutton's presentation slides, giving a telephone number and email address, can be found at www.afcea.ca Ottawa Chapter]

[Webopedia (<http://www.webopedia.com/>) is a free online dictionary for words, phrases and abbreviations related to computer and Internet technology. I found it very helpful while reading the presentation slides — DWE]

Upcoming Events

Upcoming Luncheons:

April 6th, RCAF Mess

May 4th, Army Officers' Mess

Please note location for upcoming events.

WATCH THE WEBSITE FOR FULL DETAILS OF THIS YEARS SCHEDULE

April PD Meeting:

Tuesday, April 6th, 2004 at 12:00 noon

RCAF Officers' Mess, 158 Gloucester Street, Ottawa

Speakers: Randy Alward and Ned Ahearn, Unisys

Meeting sponsor: Unisys

Booking Arrangements:

Please check the Chapter website www.afcea.ca/ottawa.htm or call 594-8788. Space is limited. Cost: \$15.00/person for industry or \$5.00/person for government employees. Pay by credit card in advance, or by cash or cheque at the door.

Registration deadline is Fri., April 2nd

PD Presentation Abstract: "Securing Our Supply Chain"

Our inbound supply chain is vulnerable to a terrorist attack, not to mention other criminal activity such as theft and smuggling. It is inter-modal and complex, sea, air, rail and road. A terrorist attack would have a devastating economic impact, far exceeding 9/11, and it would be 'company-ending'. Notwithstanding, we inspect less than two percent of the containers arriving at our ports. To do otherwise would cause unacceptable delay and cost. We can and are reducing this vulnerability with the application of information management and technology. We can secure containers with electronic locks; we can track containers with Radio Frequency ID (RFID) and GPS; we can add sensors to detect chemical and biological contaminants; we can use manifests and other intelligence to target high risk containers for more detailed inspections; and we can secure our ports, airports and workers. However, information technology should not be thought of as simply a means of reducing the threat of a terrorist attack, it should be viewed as an enabler that improves cargo transit, including 'just-in-time' delivery. There must be a Return on Investment!

METHODS OF PAYMENT FOR LUNCHEONS & EVENTS

There are three methods of payment, available to you at:

<http://www.afcea.ca/ottawa.htm>.

Members wishing to pay in advance for their chapter luncheon or for a table by credit card (Visa, MasterCard or AMEX) may download the form, sign it and fax it to the AFCEA Ottawa Chapter - Administration Services: (613) 594-8717. Payment will be acknowledged by email and a receipt will be mailed.

YOUR INPUT-NEWSLETTER SUBMISSIONS

In keeping with Chapter direction to bring more discussion to the areas of professional development and to broaden the scope of the AFCEAN newsletter, we would welcome your articles, comments and contributions. Letters to the Editor are most welcome. Please feel free to submit your items of topical or general AFCEA interest (contracts and awards, promotions, upcoming events and courses) to the Editor for publication. Original articles which you the members may wish to submit or comment upon for publication are most welcome. **Please take advantage of this opportunity to let AFCEANs worldwide know what you and your Chapter are doing.** If you have any questions concerning the appropriateness of a submission please do not hesitate to contact the AFCEAN Editor. **Bill Hawken at 841-2912 or hawkenw@hotmail.com**