

Ottawa Chapter Newsletter

P.O. Box 11232, Ottawa, Ontario, Canada, K2H 7T9

September 2009



OTTAWA SRE CHAPTER

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Int'l Rep. - VACANT
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POINT OF VIEW

Without changes we will continue to experience an operating deficit for at least the third year in succession. The budget proposal for 2009-2010 reflects a **deficit of \$462.99**. Our only real source of revenue comes from membership fees, with a minor and variable source from the sale of CDs (virtually at cost) to the local membership.

Our major single expense is the cost of meetings. This is a variable expense depending on the number of meetings (virtually a fixed expense if the number of programmed meetings remains at 6 and the location remains the same). Other operating expenses include SRE International dues, P.O. Box Rental and Postage, Printing, Mailers and Copy expenses. The budget did not make any allowance for the additional expense of copying the annual RAMS master disc so that we can distribute it to our out of town members (one of the few benefits they receive from our chapter) or make available for sale (at or only marginally above cost) to local members.

For the program year 2008-2009 we had 31 paid members, several of whom were late payers. Our membership fees have remained constant at \$40.00 since the program year 2003/2004. Options to resolve the problem are to reduce the number of meetings, find a less expensive place to meet, or raise the cost of membership. What are your thoughts?

- Vern Robertson, Treasurer

CHAPTER NEWS

After nine years Aaron Dinovitzer has given up the helm and James Menard was 'promoted' to the office of President. Long time members Peter Cheng and Bill Fung are also permanently retiring. See Bill's reflections on the

next page. That leaves several openings for anyone with an interest in promoting the reliability engineering profession. Contact any of the officers in the box at left if you want to help keep your chapter alive. Join in!

09/10 OTTAWA SRE TECHNICAL PROGRAM

Here is the program of R&M related presentations put together for you by the members named above:

23 Sept. 2009: Quentin Qiu, DND; ILS Challenges of Halifax Class Frigate Modernization.

28 Oct. 2009: Chris Francis, DND; Dynamic Monte-Carlo Simulation of Aircraft Fleet Operational Availability.

25 Nov. 2009: Romney B. Duffey, AECL; Predicting and Managing the Safety and Reliability of Modern Technological Systems.

24 Feb. 2010: Louis Saucier, DND; Performance Based Accountability.

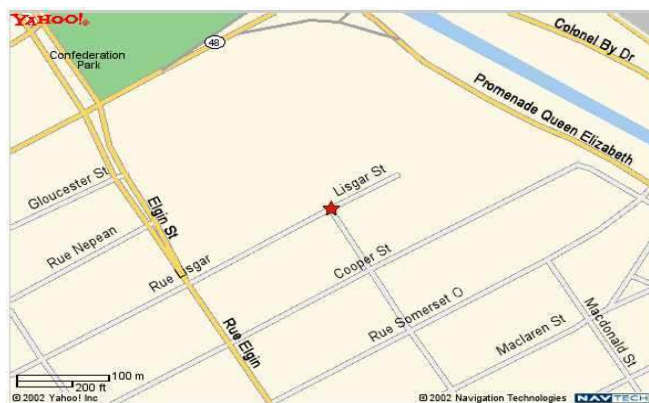
24 Mar. 2010: TBD

28 Apr. 2010: David Smith, Trytel; Reliability Old and New /Annual General Meeting

We look forward to seeing you there, and ask you to consider participating in the technical program.

MEETING LOCATION

The 'Crow's Nest' at the Naval Officers Mess, HMCS Bytown, is located at 78 Lisgar Street. You can park in the Wardroom parking lot after 1700. As well, meter parking is free after 1730 Monday to Friday on the streets near the mess. Parking is also available in the Lisgar Collegiate parking lots after 1700.



Meetings are on Wednesday nights. The usual timings are:

6:30 p.m. Mess opens

7:15 Presentation

8:00 - 9:00 Questions and Discussion

REFLECTIONS ON BEING A RELIABILITY ENGINEER

After working in the reliability field for 36 years, I am going to retire at the end of August, 2009.

The jobs I've held were mostly interesting because I managed to work in the areas of robotics, integrated cockpit instruments and displays, avionics equipment, communication radios, automatic train control system, etc., to name a few. It is the variety of different systems that takes the monotonous out of the job. In my 36 years of experience, I can say that the job security of this engineering discipline is quite stable compared with other disciplines.

The dichotomy of whether or not reliability adds intrinsic value to the design is often debated by developers and program managers. Sometimes I question if the discipline really made an impact on the design. Industry uses the discipline's output such as reliability prediction to assist bidding and marketing efforts; contractors perform the repetitive routine of producing Failure Modes Effects Analysis (FMEA) for satisfying the military's overall Integrated Logistics Support requirements. These activities could be misused, misinterpreted, or misquoted to serve other purposes.

In my 36-year career, I can only recall two events that I consider having a significant impact on the equipment (or maybe a negative impact on the financial aspects of the company). The first event was to conduct a PRT (Production Reliability Test) on ADF (Automatic Direction Finder) equipment. The PRT discovered a production defect (a cold solder joint), and as a result, the ADF units that were already shipped to the customer had to be recalled and reworked. The second event was to perform a FMEA on a train control console. The FMEA discovered that there was a Single Point Failure in the implementation of the relay logic for the "Deadman Switch". This prompted a re-design and a rework of the train control console in the production area.

Young engineers may not find the reliability discipline attractive because the work contributed to the overall efforts is not prominent and obvious to management. Today's job markets do not encourage young engineers to enter into the discipline, and employers use "hired-hands" to cover the short-term manpower requirement. The majority of reliability engineers seem to be in the aging population category, and young bloods are rare. With one month to go before retirement, my organization has not been successful in searching for a replacement.

- Bill Fung

RELIABILITY IN THE NEWS

Scientists have created a "kernel" -- the basis of a computer's operating system -- that is proven reliable with mathematics, a milestone which they claim will pave the way for a new generation of software with unprecedented levels of reliability.

"Formal proofs for specific properties have been conducted for smaller kernels, but what we have done is

a general, functional correctness proof which has never before been achieved for real-world, high-performance software of this complexity or size," said Dr Gerwin Klein of NICTA in Australia, who led an international team.

According to the scientists, the proof also shows that many kinds of common attacks will not work on the Secure Embedded L4 microkernel.

For instance, the microkernel is impervious to buffer overflows, a common form of software attack where hackers take control of programs by injecting malicious code. "Our kernel cannot be subverted by this kind of attack," Klein said.

<http://www.hindu.com/thehindu/holnus/008200908141140.htm>

GILB'S LAWS OF UNRELIABILITY:

Computers are unreliable, but humans are even more unreliable.

Corollaries:

At the source of every error which is blamed on the computer you will find at least two human errors, including the error of blaming it on the computer.

Any system which depends on human reliability is unreliable.

A system tends to grow in terms of complexity rather than of simplification, until the resulting unreliability becomes intolerable.

The error-detection and correction capabilities of any system will serve as the key to understanding the type of errors which they cannot handle.

Investment in reliability will increase until it exceeds the probable cost of errors, or somebody insists on getting some useful work done.

CD OFFER

Tony Wild will be offering his University of Ottawa lecture notes on the optimum approach to problem solving in pdf format by spring 2010.

Copies of the 2008 RAMS Proceedings and the 2008 RAMS Tutorial Notes on CDs are available to members. The cost of either is \$5.00. For copies contact Vern Robertson at vrobertson@rogers.com or 613-830-3744. Copies will also be available at regular meetings.

FUTURE CRIMS

There appears to be interest in running another CRMS. The last was in 2003 and was quite successful and topped-up the treasury. A separate meeting may be required to discuss prospects. As a first step the old committee and the current executive are being polled by email.

SREO NEWSLETTER

If you have a topical issue or commentary you wish to share with the SRE community, please send it to James Menard menardsj@sympatico.ca. Deadline for the next Newsletter is Dec 31, 2009. Thank you.