Midwest Gateway Newsletter

International Council on Systems Engineering

Complexity
By Bob Scheurer

Complexity is a hot topic these days. At a personal level, we often complain when we deal with what appears to be too much complexity. It can be especially frustrating when we experience unanticipated performance or unintended effects from what might be called an overly-complex system. This can diminish a product's or service's usefulness to us or cause us to lose faith in its proclaimed benefits. Meanwhile, our customers now realize that they take on added risks from increasingly complex systems. These risks may be experienced in the areas of operational costs, safety concerns, training issues, and others.

What makes complexity particularly challenging is that it can mean something different to different people. We may recognize complexity when we see it but have a hard time telling someone else how to recognize complexity when

INCOSE Midwest Gateway 2011 Elections

We are looking for motivated SE Leaders to become candidates to run for election to serve on the MGC of INCOSE Board of Directors (BOD).

INCOSE Midwest Gateway Leadership BOD open positions include:

President – Runs the Chapter Operations/Meetings

- 1 year term (2012) with obligation as Past President (and runs the elections committee) the following year.

President Elect – Acts as a Vice President

- 3 year commitment – president elect in 2012, President in 2013, and Immediate past president 2014.

Secretary – Takes minutes at monthly BOD meetings

- 2 year term, 2012-2013

Treasurer – Manages the Chapter funds/budget.

- 2 year term, 2012-2013

Director(s) – Run the MGC committees and handle special projects, Promote chapter programs (i.e. Outreach and Lunch meetings)

- 2 positions, 2 year term, 2012-2013

For more info on elections or to become a candidate, please contact Bob Scheurer, Past President robert.scheurer@incose.org

Master of System Integration at Washington University

This program leverages the best practices and emerging trends in systems engineering and integration to help working professionals master the concepts and techniques necessary to understand the entire life cycle of a complex system: conceive, plan, create, execute, use, test, analyze, support and retire.

The program culminates with a cap-stone project that incorporates systems integration concepts, processes and products. This project includes lessons learned throughout the program to demonstrate the student's mastery of systems engineering and integration concepts and techniques. Students will work in multidisciplinary teams, delivering a final product that applies their cumulative coursework within a context of a real industry project.

The program allows students to integrate experience with academics and executive level case studies and projects for a comprehensive, authentic learning experience.

The program focuses on the following topics in a broad and challenging curriculum:

- System Analysis, Design and Integration

- Systems Architecture

- Operation Research and Analysis

- Affordability Engineering

To learn more about the program, please call 314-935-5484, or visit http://engineering.wustl.edu/msi.

FIRST Lego League

Ratchet Rockers is high school robotics team located in the Wentzville Missouri school district. The team competes in FIRST Robotics Competition (FRC). The Ratchet Rockers were part of the 2008 PBS documentary on FIRST Robotics. This past season the team made it to the quarter final round in a division of the Inter-national Championship.

Here are a couple of pictures from the Robotics event our chapter sponsored in July for INCOSE. Note all the trophies they've won!

Complexity cont'd

they see it. Is there a way to measure complexity? If the answer is yes, it would seem that the measurement could be a sliding scale: yesteryear's complexity may pale by next year's complex systems.

In trying to define what we mean by complexity, we need to differentiate between it and other similar terms, such as simple and complicated. "Simple" appears as an easy term to grasp; something that's simple can potentially become well understood. Meanwhile, something that's complicated may have many

tedious steps, but they are repeatable never-the-less and lead to predictable outcomes. At the pinnacle, complexity can involve numerous attributes which collectively could lead to indeterminate outcomes. In summary, baking cookies is simple, going to the moon is complicated, but raising children is complex!

However we see it, we each likely have to deal with complexity every

day of our lives. The better we understand complexity and ways for managing it, the more likely we will be able to experience a positive outcome from whatever the complex system is. To paraphrase Albert Einstein, our jobs as systems engineers are to identify ways for making delivered systems as simple as possible, while still meeting requirements and garnering satisfied customers, --- but no simpler!…

Quote of the Day

The best way to adapt to change is to be the one who's changing things.

*Jeff Tomchick,
Manager of Learning
Technologies at THINQ*

INCOSE MWG 2011 Board of Directors

President:
Bill Bezdek
william.bezdek@incose.org

President-Elect (Vice President):
John Headrick
john.headrick@incose.org

Secretary (11/12):
Mike Mobley
michael.mobley@incose.org

Treasurer (10/11):
Bill Schoening
william.schoening@incose.org

Directors (11/12):
Bill Jennings
william.jennings@incose.org
Steve Gunther
steve.gunther@incose.org

Directors (10/11):
Dale Waldo
dale.waldo@incose.org
John Headrick
john.headrick@incose.org

Past President:
Bob Scheurer
robert.scheurer@incose.org