

The Integrator

INCOSE North Star Chapter



Volume 4, Issue 3

June 2008

North Star Newsletter

INCOSE North Star Newsletter Communication

June is the month of the INCOSE International Symposium. The theme, Systems Engineering for the Planet, should provide a rich environment for new SE thought! A debrief will be part of our July Meeting. Eileen Arnold, Editor, BAE Systems

Systems Engineering at its Best!

Systems Engineering and Integration:
An Executive Perspective

Dr. Michael Pennotti
Industry Professor and
Associate Director, SDOE Program
Stevens Institute of Technology
Hoboken, NJ edited from presentation.

The growing role of systems integrators in both defense and commercial marketplaces, together with the increasing complexity of systems of all types, has created a renewed interest in, and emphasis on, the practice of systems engineering. No longer can a company or a battle force hope to gain competition advantage simply by having the best products. Increasingly, it is the way that individual products work together, and how they interact with other systems that surround them, that differentiate the winners from the losers in every type of conflict.

Stevens Institute of Technologies convened a panel of executive experts in the fields of defense, aerospace, information technology, and telecommunications to discuss the current state of systems engineering and priorities for the future. The results of the forum are presented here as a basis for recognizing the challenges and opportunities facing systems engineers in the twenty first century.

Systems engineering is a process that ...

- Defines a system's purpose, requirements and

Chapter President's Corner

Neill Radke, Eaton Corporation and John Palmer, U of Minnesota, 2008 Co-Presidents

Great news – the North Star Chapter has been officially notified that we received the Golden Award for chapter achievements in 2007! That was only possible through the efforts of many and reflects the good health of our local organization. However, we cannot rest on our laurels and expect a repeat for 2008. We must proceed onward and upward if we are to maintain our record. To that end the Leadership Group, at its May meeting, decided to develop a strategic plan for future chapter activities and will hold a separate meeting dedicated to developing it in September. Anyone and everyone who is interested in helping to guide our future efforts will be invited to attend and participate. So, put on your thinking caps and, if you have ideas you would like us to consider, please let either John Palmer jpalm@usfamily.net or Neill Radke nbrjcr@yahoo.com know. We will put your idea on the agenda and your name on the invite list when we announce the date and place.

North Star is now a full fledged member of MFESTS, the Minnesota Federation of Engineering, Science and Technology Societies. MFESTS provides an avenue for communication and coordination between many technical societies as well as sponsoring or participating in a number of interesting activities such as science fairs. We believe this association with MFESTS will provide new opportunities for our members to learn and grow in their chosen profession. Keep tuned for activities we feel may be of interest as our participation matures. In the meantime, take a look at the MFESTS website at www.mfests.org to review its objectives.

North Star Chapter Website
<http://www.incose.org/northstar>

Continued on page 2

- external interfaces before detail design is begun
- Focuses on the interfaces between components, not just the components themselves
 - Addresses all phases of the life-cycle up-front, when leverage is maximized

We asked panel members to talk about the best experience they had on a project. We then asked them why it was the best. The reasons given for being the best were:

- Clear measures of success (3-4) defined
- Single, passionate champion
- Dedicated team
- Creative people
- Process
- Time/cost constraints

We then asked panel members to talk about their worst experiences and why it was the worst. The reasons given follow:

- Time/cost constraints
- Skipped steps
- No up-front analysis
- Too few questions
- Suppressed dissent
- Lack of system test
- Appetite too big
- Inadequate communication

The Top 5 Top Five Systems Engineering Issues in the Defense Industry (January 2003) identified by the NDIA SE Division Task Group Report included:

- [Lack of awareness of SE importance](#)
- [Too few qualified people](#)
- Insufficient tools and environments
- Inconsistent requirements process
- Poor initial program formulation

The panel was asked about the first two of the issues identified in the NDIA study. Is Awareness of SE Benefits an Issue? A resounding “Yes” filled the room. A follow-on, “How have you convinced others of the benefits?” resulted in:

- Training (including in science and engineering)
- Autopsy on failures
- Analysis of the successes
- Making it part of everyday work

What do the panelists look for when they are looking for qualified people?

- User perspective
- Understand the business (big picture)
- Experience
- Communication skills
- Broad and up vs. deep and down
- Creative people

- How do the panelists find the people they need?
 - Grow their own
 - Hire and rotate
 - Bring in a catalyst

The executive panel was quite clear about what they held systems engineers accountable for.

- System performance – that is, that the system operates as a system
- Producibility/supportability
- Lifecycle cost

Participants: Jerry Beck – OSD, Natalie Crawford – RAND, Cliff Geiger – OCNO, Ralph Giffen – LMCO, Ken Horn – RAND, Jack Irving – LMCO, John Marione – Lucent, Gordon Neary – Boeing, Ralph Nelson – IBM, Antti Perttula – Nokia, Art Pyster – FAA

WELCOME, NORTH STAR NEW MEMBERS!

Name	Company	Title
Ahmed Abdulle	Goodrich	SW Engineer
Jacob Bird	Goodrich	Elect. Engineer
Chris Buck	Ecolab	SW Engineer
Keith Edstrom	Pulmonetic Sys. Inc.	Engineer
Timothy Gvertin	Goodrich SIS	SW Engineer
Kellene Hadrava	BAE Systems	Sr. Controls Engineer
Kurt Hordstrom	Pulmonetic Sys. Inc.	Mfg Test Engineer
Chris Leitschuh	Lockhead Martin	SW Engineer Sr.
Brian Naslund	Goodrich S&IS	Senior Systems Engineer
Greg Peterson	BAE Systems	Senior Staff Systems Engineer
Mark Ridgley	Cardinal Health	Manf. Test Engineer
Anthony Scinicariello	Medtronic, Inc.	Principal Systems Engineer
David Sellnow	Alliant Techsystems AW	System Reqts Engineer
Rod Templen	Goodrich Sensors & Integrated Systems	Design Engineer
Stacy Walts	Boston Scientific	Sr. Systems Engineer
Daniel Wiersma	Alliant Techsystems	Systems Engineer
John Zimmerman	Lake Regian Medical	Senior R & D Engineer