The Integrator

INCOSE North Star Chapter

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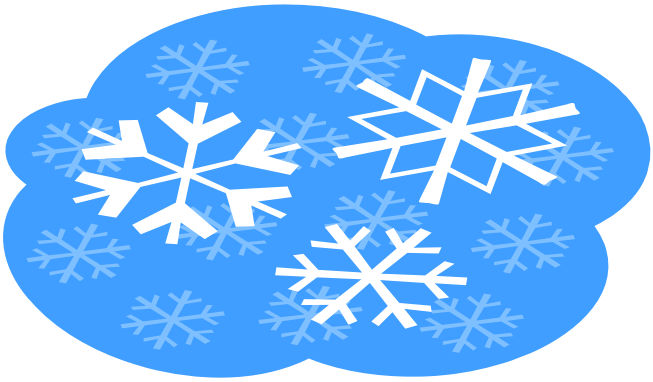
North Star Newsletter

INCOSE North Star Newsletter Communication

The INCOSE Leadership wishes you and yours a prosperous 2009!

Eileen Arnold, Editor, BAE Systems



Systems Engineering at its Best!

Systems Engineering Process Implementation and Maintenance

Implementation and maintenance of the systems engineering process for a project or program requires a deliberate effort for proper incorporation. Activities associated with an implementation and maintenance process for the systems engineering process include:

1. Establish the context for describing the systems engineering process (system approach, system hierarchy, and development process life-cycle model).
2. Establish the requirements for implementing and maintaining the system engineering process for a project or pro process to apply to the specific project or program.

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Chapter President's Corner

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

The year 2008 has been a good one for the North Star Chapter with many interesting topics for our monthly meetings and several new attendance records. We have made careful plans to support implementation of our new five year growth plan and to again provide a program of meetings that will truly meet the needs and interests of our members. Following the 2009 theme, "Practical Application of Systems Engineering" the following will be the topics and venues for the 2009 monthly program:

- Jan: SE Initiatives at Starkey Labs with tour,
- Feb: SE in production at PaR Systems, with tour,
- Mar: SE in a Student Project at Wayzata High School,
- Apr: SE in Determining Architecture at Eaton Corp.,
- May: SE in the U of Minnesota Solar House Project,
- Jun: Dry run of papers for INCOSE 2009 plus a tour of the ION Corporation laboratory facility,
- Jul: The North Star summer social,
- Aug: SE in Design at the ADC Corporation,
- Sep: SE in Conducting Trade Offs at Medtronic,
- Oct: SE in Operations and Maintenance at the Minneapolis Water Works,
- Nov: SE in Requirements Development at Honeywell,
- Dec: Hoilday Party.

We look forward to another exciting program. To get involved, please contact:

jpalmer@usfamily.net or NeillBRadke@Eaton.com

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

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3. Define a plan for incorporating these goals.
4. Establish requirements for application of key focus area activities and products necessary to accomplish each goal.
5. Incorporating key focus area requirements into the systems engineering process definition and establish requirements traceability between activities and products and the process.
6. Periodically review the goals for significant changes. Incorporate changes as necessary using the requirements traceability to identify activities and products in the process definition that must be evaluated for potential impact due to a change in process goals.
7. Identify the goals of the systems engineering
8. Establish training as needed based upon:
    a. Development process and other related processes
    b. The systems engineering process
    c. Characterization of the systems engineering process to a specific project
    d. Application of methods and tools relevant to the systems engineering process.
    e. Improvement of the systems engineering process
    f. Metrics
9. Establish metrics and monitor their effectiveness:
    a. Key focus area specific metrics
    b. Systems engineering process metrics
    c. Systems engineering process maintenance metrics

All programs are unique, so to be effective and efficient, application of the systems engineering process will depend on an accurate characterization of programs. Understanding the characteristics of a program provides us the opportunity to emphasize or deemphasize specific systems engineering activities to obtain an optimal balance between utility, performance and cost, and schedule. For example, a safety critical system will require a much more extensive system safety assessment, than a system that has little or no bearing on the system safety. Likewise, a system using advanced and unproven technologies will require more extensive systems synthesis and test than a system using proven technologies.

A number of factors contribute to the unique environment that each program or project exhibits, such as size, complexity, familiarity, criticality, technical risk, who the customer(s) are, etc, that will have a bearing on what the systems engineering process will look like for a specific program. The characteristics can be placed into three broad categories, (1) program characteristics, (2) customer characteristics, and (3) company characteristics. They can be combined with a high degree of independence, creating a wide variety of business conditions that impact the systems engineering activities. A key to successfully meeting the performance, cost, and schedule objectives of a program is the appropriate emphasis and weighting of each process based on the program's characteristics.

WELCOME, NORTH STAR NEW MEMBERS!

FirstName	LastName	Company	Title
Sudar	Arivazhagan	Medtronic	Sen FW Eng
Melvin	Chiang	Eaton Corp	SE
Magdi	Essawy	Starkey Labs	Manager of SE
Howard	Gerwin	John Deere PS	Eng Manager
John	Heitzman	Gen Dyn C4	SE Manager
Brian	Larson	Boston Sci	Prin SE
Kevin	Lindner	LMCO	SE
John	Long	ATK MSG	Senior SW Eng
Daniel	Makousky	BAE Systems	Sr Staff SE
David	Mallmann	Medtronic	Eng
Mark	McCutcheon		Elec Eng
Rob	Schlafmann	Medtronic	PrinFW Eng
Ken	Timmerman	Medtronic	PrinFW Eng
David	Urban	Medtronic	EE
Eerik	Villberg	Medtronic	Sr. EE
Jon	Ward	Eaton Corp	Chief Eng
Richard	Winegardner	LMCO	Staff SW Eng
Chen	Wong	Boston Sci	SW Eng