The Integrator

INCOSE North Star Chapter

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North Star Newsletter

INCOSE North Star Newsletter Communication

The theme for the newsletters of 2008 is, "Systems Engineering: What makes us unique?" This month's article starts the year out with an article that discusses applications whereby SE didn't work, identifying 7 examples of problematic approaches. Do you recognize these behavior's in YOUR Company's SE implementation? Come to our meetings to find answers to Project dilemmas. You are welcome at our meetings, whether or not you are a member.

Eileen Arnold, Editor, BAE Systems

Systems Engineering at its Best!

Why Systems Engineering Doesn't Work – Discussions and Observations on Failed SE Applications *(Reprinted by permission)*

Terry Kuykendall, the INCOSE Atlanta Chapter President in 2006, gave an insightful review of the types and causes of systems engineering failures that harm our profession.

He identified seven examples of problematic systems engineering approaches:

The "Unknown" SE
The "Orphan" SE
The "Secretary" SE
The "Mystic" SE
The "Mensa" SE
The "Theoretical" SE
The "All-Or-None" SE

The sections on the following pages explore the symptoms and failures of each type.

The "Unknown" SE – Systems engineering responsibilities are dispersed among other project elements without coordination of requirements. Actions typically fulfilled by the SE organization are incomplete

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Chapter President's Corner

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

Maintaining and growing a successful chapter of INCOSE is a challenge. The INCOSE North Star Chapter won the Silver Award for chapter achievements in the past and has submitted for the Gold for 2007. To that end, the chapter Leadership Group, which consists not only of the elected officers but any members interested in active participation, meets every month to review plans and progress. However, the most important get together comes every October when that group meets on a Saturday and spends the time necessary to lay out the program for the coming year. This includes choosing the theme around which to build the monthly chapter meetings as well as the Spring and Fall tutorials. Then, deciding what the membership will really be interested in takes a bit of debate but the result is a topic, candidate speaker, hoped for sponsor company or organization, and planned location for each month. A "Champion" is also appointed for each month whose task it is to take care of all details for that meeting, prepare the email notices to the membership - and ask for help when needed! Emphasis is placed on tours of company facilities when possible and good advertising is maintained through email notices, posters and a system of "Ambassadors" maintained at various companies in the Twin Cities area. The monthly Leadership Group meetings are always open to non-members and, provide follow-up and replanning when expected arrangements do not come out as anticipated.

The foundation of a successful chapter, we believe, is active participation of the membership. Although not all members play key roles, the North Star Leadership Group provides the active core and is the moving force in the chapter. Anyone interested in putting in their "Two Cents" or "Dipping their oar in the water" is always welcome. Come join us!

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or omitted.

The "Orphan" SE – Someone is assigned to be the "designated SE representative" without true support from the management organization. SE functions are external to the project processes, so there is little integration of activities.

The "Secretary" SE – The SE role is limited to requirements management, and must operate external to the primary project functions. The SE function is restricted to a "bookkeeping" or "secretary" management of project requirements and data bases, with no interactive involvement in the engineering process.

The "Mystic" SE – The persons or organizations responsible for SE treat the SE function as a "mystic" role that only apostles or initiates can understand, providing little input or explanation regarding the roles and functions of the SE specialists. As a result, the lack of communication of the purpose and scope of the SE function within the project leads to misunderstanding, mistrust, and conflict on critical issues. In addition, the SE function may be excluded from key issues and decisions.

The "Mensa" SE – A key SE specialist acts as if he/she has advanced intelligence because of knowledge of esoteric SE applications or principles. The "Mensa" SE constantly brings up issues and concepts only marginally relevant to the project in order to appear to be superior. The superior attitude of the SE creates friction, dislike, and disruptive situations within the project or program.

The "Theoretical" SE – The SE specialist has studied SE theory, tools, and techniques, but has little experience in actually applying these concepts to "real life" projects. All SE concepts are presented with eternal loops, feedback, alternate paths, and no real or recommended solutions. SE products are printed out, put in binders, and stored on shelves – never to be used.

The "All-Or-None" SE – SE specialist has the perspective (or opinion) that SE can only succeed when a full, comprehensive program has been implemented. The SE function requires resources disproportionate to the overall project, and cannot be supported. Insistence on such an SE program that is not "right-sized" for the project leads to nonproductive utilization of [limited] resources.

Terry concluded by stating that SE Projects should: (1) ensure SE functions and activities are clearly translated, and are clearly understood, (2) assign a "good ambassador" for SE within each project or program, (3) use the right SE tools for the task, and (4) seek opportunities to promote and prove SE as a critical and integral function to the engineering disciplines.

Good Systems Engineering, in the context of the Project size, complexity, and personnel, provides recommended solutions and practices that all systems engineers can apply to prevent or resolve these failures. Pay attention to technical, communication, and organizational interfaces. Plan for a complete Systems Engineering Lifecycle. Measure success as you go.

INCOSE Atlanta Chapter Presentation by Terry Kuykendall

WELCOME, NORTH STAR NEW MEMBERS!

Name	Company	Title
Achi Kiliaki	GD – C4S	Systems Engineer
Gordon Kranz	GD - C4S	Sr Program Mgr

2008 Meeting Calendar

Date	Topic/Theme	Location
17 January	**Technical Management**	Timber Lodge
21 February	**Requirements Analysis**	BAE Systems
13 March	**Functional Analysis**	Medtronic
10 April	**Architecture**	U of Minnesota
8 May	**Implementation & Symposium Papers**	U of St. Thomas
12 June	**INCOSE International Symposium**	**Utrecht, Netherlands**
10 July	**Tour, Social & Debrief**	TBD
14 August	**Integration**	Boston Scientific
11 September	**Verification & Validation**	MTS
9 October	**Operations & Maintenance**	TBD
6 November	**Risk Management**	ATK
14 December	**Member Holiday Party + Guest**	TBD

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