



International Council on Systems Engineering  
Delaware Valley Chapter Meeting

**Joint Meeting with IEEE Philadelphia Section**

**Speakers:**

- Clifton Baldwin, Federal Aviation Administration's (FAA) William J. Hughes Technical Center  
"Project Management and its Relation to Systems Engineering"
- Dr. John Sudano, Lockheed Martin (Moorestown, NJ)  
"The Generalized Belief Fusion and Its Equivalence to the Naïve Bayesian Fusion."

**Date:** Tuesday, November 18, 2003

**Time:** 6:00 p.m. \$15 for Filet Mignon  
(Vegetarian Dinner only if requested ahead of time)

7:00 p.m. Meeting begins

**Place:** Drexel University Faculty Club, 33rd & Chestnut Sts., 6th Floor, Philadelphia, PA

**Free Parking:** East Side of 33rd St., between Walnut & Chestnut Sts.  
(To avoid towing, park outdoors within fenced area and place a sheet of paper inside your windshield with large printed letters: "IEEE MEETING" on it)

If you would like to attend, please contact Julie Longo at [jlongo@jlatechvideo.com](mailto:jlongo@jlatechvideo.com) or by phone, 856-478-4295, by November 10<sup>th</sup> with your dinner selection.

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The Delaware Valley Chapter has donated \$100 in 2002 and 2003 to promote National Engineers Week. Ralph Hill, INCOSE Liaison to NEW stated, "On behalf of INCOSE and NEW 2004, I want to thank Delaware Valley for their continued support of National Engineers Week."

Information regarding upcoming INCOSE elections will be provided to members within the next few weeks.

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For further information about the International Council on Systems Engineering, please see:

- The INCOSE website at <http://www.incose.org/> and
- The Delaware Valley Chapter web site at <http://www.incose.org/delvalley/>

## **Project Management and its Relation to Systems Engineering**

Recently the Federal Aviation Administration (FAA) has been putting a strong emphasis on project management. Most people have a general idea what project management is, but few can define it specifically, even if they have the title project manager. For the most part, it is the label given to anyone leading a project, but leadership is only one of many qualifications for the role. The Project Management Institute (PMI), a professional organization devoted to promoting the field of project management, has published several standards on the subject as well as led some research to determine the desired abilities of a project manager. Once there is a clear understanding of what is a project manager, the distinction between project manager and systems engineer becomes vaguer. Many of the same characteristics apply to both, yet there are differences.

The presentation will offer some generally accepted definitions for project management, project manager, and systems engineer as well as taking a look at PMI. Using PMI's standards, the desired competencies of a project manager are discussed. Finally, the similarities and differences of a project manager and systems engineer will be explored.

**Clifton Baldwin** is a computer scientist in the Systems Engineering Division at the Federal Aviation Administration's (FAA) William J. Hughes Technical Center. Despite the title, he has been working to implement best practices in various aspects of project management and systems engineering over the past two years. The Project Management Institute (PMI) certified Mr. Baldwin as a Project Management Professional in 2002. Over the past three years he has served on the core teams of two major projects at PMI developing standards in project management. Prior to joining the FAA in 2001, he was a Technical Project Manager at the National Institutes of Health in Bethesda, Maryland. In his spare time, Mr. Baldwin is a part-time professional tutor of mathematics at Ocean County College. Mr. Baldwin holds a Masters of Science in Information and Telecommunication Systems from Johns Hopkins University and a Bachelors of Arts in Mathematics from Rutgers University. He and his wife Susan live in Bayville, New Jersey.

## **The Generalized Belief Fusion and Its Equivalence to the Naïve Bayesian Fusion**

In the design of fusion systems, a processing objective is to collect or gather the most correct information from such data. The generalized belief fusion algorithm (depending on the probability proportionality weighting functions used) is shown to be equivalent (in the probability estimate) to the Dempster-Shafer (D-S) theory of evidence, the Modified Dempster-Shafer (MDS) theory and other new fusion methodologies. Equivalence between Belief Fusion and Naïve Bayesian fusion is also shown. The objective of this paper will demonstrate that these new fusion methodologies will converge faster to correct results. A numerical example comparing five belief fusion variants is presented for the same inputs.

**Dr. John Sudano** is presently employed as a principal member of the engineering staff with Lockheed Martin, Moorestown, NJ, where he is doing research in the automated integration of dissimilar sensor information for identification, for robust tracking, the representation of true position and velocity tracking errors and precise gravitational representation for missile tracking. Some of his other research interests include tracking and information discrimination in hostile environments, automated identification methodologies, statistical signal processing, and error estimation in information-fusion processes.

Dr. John Sudano received a Ph. D. degree from New York University, an M.S. from Michigan State University, and a B.S. from Fairleigh Dickinson University, all in Physics. He presently has three patents and has published 34 technical articles. He has been a member of the IEEE for 25 years. Presently, he is the vice-chair of the executive committee of the IEEE Philadelphia section and vice-chairperson of the Philadelphia section of the Aerospace and Electronic System Society.