

Applied Space Systems Engineering

Date **Saturday, 21 November 2009**
Time **8:30 AM – 5:00 PM**
Location **Booz Allen Hamilton, Colorado Springs, CO**



If the capability gaps in Acquisition and in complex systems implementation are to be closed, then aerospace Systems Engineers need to stay grounded in the basics of Space Systems Engineering. Using material from the text *Applied Space Systems Engineering* (ASSE), the FireSAT case study, hands-on exercises, and the accumulated experience of the presenters and their colleagues, this tutorial instructs an SE: in designing systems, in managing Systems Engineering processes, and in realizing systems.

At the end of this course you should be able to: ...

- Define key terms used in systems engineering in general, and space systems engineering in particular
- Explain systems engineering processes used to characterize an existing need and develop new operational capabilities to address that need throughout the acquisition lifecycle
- Describe lessons learned from past space systems engineering projects
- Apply systems engineering process and tools to real world problems in various stages of lifecycle development
- Critically analyze existing mission requirements, concepts of operations, functional and physical architectures and other system engineering process outputs
- Synthesize systems engineering best practices—beyond a “cookiecutter” approach—to critically evaluate your current technical challenges and enhance your ability to intelligently balance cost, schedule, performance and risk on your own projects and programs

Attendees can pre-order a copy of *Applied Space Systems Engineering*, edited by Larson, Kirkpatrick, Sellers, Thomas, and Verma, McGraw-Hill, 2009, or purchase a copy at the tutorial (subject to availability). Note: the INCOSE Colorado Front Range Chapter offers this tutorial to advance the knowledge and practice of SE, and takes a neutral position on the content or quality of any books associated with a tutorial.

The Presenters:

Dr. Jerry Jon Sellers is the author of *Understanding Space: An Introduction to Astronautics* and co-editor of the new *ASSE*. He is a partner and Chief Financial Officer of Teaching Science and Technology, Inc. (TSTI). He was the director of the U.S. Air Force Academy’s Space Systems Research Center. He has over 24 years of space systems experience including Guidance & On-board Navigation Officer in Space Shuttle Mission Control; Assistant Professor of Astronautics at the U.S. Air Force Academy; and Chief of Astronautics for the Air Force European Office of Aerospace Research & Development. He is currently Adjunct Professor at Stevens Institute of Technology and a Visiting Reader for University of Surrey, Guildford, England, where he earned his doctorate. He is an Associate Fellow of the AIAA, and a member of the AIAA Space Systems Technical Committee.



Dr. Pete Van Wirt is a former Deputy Department Head for Labs and Research of the Department of Astronautics at the U.S. Air Force Academy. He served as a systems engineer for the Peacekeeper Missile Program at Norton Air Force Base and as a program manager at Eglin Air Force Base. He has over 20 years of aerospace engineering experience and over 10 years teaching experience. He earned his doctorate at the Utah State University and is currently Adjunct Professor at Stevens Institute of Technology. Dr. Van Wirt is a contributing author to *ASSE*.



For those who have Certified Systems Engineering Professional (CSEP) designation from INCOSE, the tutorial counts for up to 7.5 Professional Development Units (PDUs). The exact number of PDUs depends on the finish time.

Registration and Important Details

The tutorial is open to INCOSE members and non-members. The cost is \$80 for INCOSE regular members, \$30 for INCOSE Senior members and for students, and \$120 for other non-members. Non-members will receive the member rate if they apply for INCOSE membership at the time of registration. (An application form for INCOSE membership is attached as the last page of this announcement.) Booz Allen Hamilton (host facility) employees who are INCOSE members receive a \$10 discount. Register in advance using the attached registration form, with payment *by cash or check* no later than 13 November 2009 to:

Applied SSE Tutorial
INCOSE Colorado Front Range Chapter
P.O. Box 631201
Highlands Ranch, CO 80163-1201

You will receive acknowledgement of payment receipt by e-mail. Hard-copy tutorial notes are included in the tutorial cost. Refreshments are provided; participants make their own arrangements for lunch. Address questions to Jerry Huller, email: jerry DOT huller AT incose DOT org, telephone: 720.858.5060.

Any cancellation requests are due by telephone or e-mail five calendar days before the tutorial (for a full refund). Pro-rated refunds may be granted after that date, based on a case-by-case review of extenuating circumstances.

Registration and sign-in at the tutorial begins at 8:00 a.m.

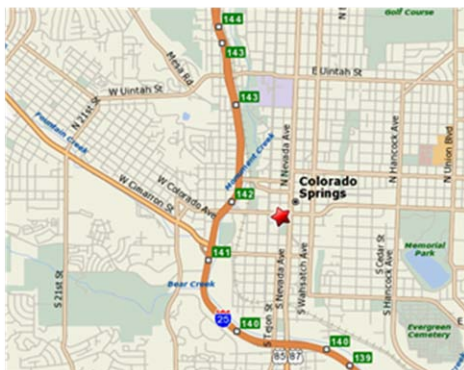
Location

Booz Allen Hamilton
121 S. Tejon Street, Suite 900
Colorado Springs, CO 80903
(512) 587-3573

Directions: From the I-25 intersection at I-70, head southeast on I-25 S toward Exit 208, go 67.5 miles, take exit 141 for US-24/Cimarron St, go 0.2 miles, turn right at W Cimarron St/US-24, go 0.6 miles, turn left at S Tejon St, go 0.3 miles to Booz Allen Hamilton. Park in the “Plaza of the Rockies” underground parking lot just south of Colorado Avenue. Take the elevator to the first floor of the Plaza. Walk to the South Tower elevator adjacent to the Nosh Restaurant. A Booz Allen Hamilton employee or Plaza security guard will escort you to the 9th floor conference room. Those who register will be sent more extensive directions and parking instructions.

Google Maps link:

<http://maps.google.com/maps?hl=en&source=hp&q=121+S+Tejon+St+Colorado+Springs+CO+80903&ie=UTF8&hq=&hnear=121+S+Tejon+St,+Colorado+Springs,+CO+80903&gl=us&ei=7OS6SsaWJ9eTtgfhy7itDQ&ll=38.834276,-104.823346&spn=0.006569,0.013754&z=16&iwloc=r0>



TUTORIAL ENROLLMENT FORM (Return with Payment)

Applied Space Systems Engineering (ASSE)

21 November 2009

Colorado Springs, CO

Name: _____ Company: _____

Email: _____

Mailing Address (number, street, city, zip code): _____

Day Phone: _____ Alternate Phone: _____

Please provide an alternate phone number in case we have to reach you about last minute changes for the tutorial.

Indicate if a member of INCOSE: Yes No INCOSE Member No. _____

Circle the enclosed amount:

| | INCOSE Member | Non-Member | Non-Member <i>plus</i> one-year INCOSE membership | Student Non-Member <i>plus</i> one-year INCOSE membership | Other (student or INCOSE Senior member) |
|--|---------------|------------|---|---|---|
|--|---------------|------------|---|---|---|

Fee: \$80* \$120 \$185* \$50* \$30*

Indicate if you would like to pre-reserve a copy of the ASSE textbook (include additional payment of \$55.00): Yes

* Fee for students (at least 3/4 of full time) is \$30. Indicate school: _____

* Fee for INCOSE Senior members is \$30. Indicate if a Senior member: Yes

* Booz Allen Hamilton employees who are INCOSE members receive an additional \$10 discount.

Indicate if discount applies: Yes

Your registration needs to be *postmarked no later than* midnight, 13 November 2009. Coordinate in advance with Jerry Huller, 720.858.5060, if your registration may be late. Payment, *by cash or check*, is due *prior to* the start of the tutorial, unless you obtain approval in advance from Jerry.

Note: *you are not registered until* you receive a confirmation email, or other written paperwork, from the registrar, Jerry.

Mail completed form(s) and a check made out to "INCOSE Colorado Front Range Chapter" to:

Applied SSE Tutorial
INCOSE Colorado Front Range Chapter
P.O. Box 631201
Highlands Ranch, CO 80163-1201

Please note that the INCOSE Colorado Front Range Chapter is *not* set up to take payment by credit card for the tutorial. For questions about alternate arrangements, call Jerry Huller at 720.858.5060 during business hours.

INCOSE Colorado Front Range chapter website: <<http://www.incoseco.org>>

INCOSE Central website: <<http://www.incose.org/>>



INTERNATIONAL COUNCIL ON SYSTEMS ENGINEERING
7670 Opportunity Rd #220, San Diego, CA 92111 (USA)
Phone: (858) 541-1725 or (800) 366-1164
Fax: (858) 541-1728 Email: info AT incose DOT org
World Wide Web URL=http://www.incose.org/

Individual Membership Application

FOR NEW MEMBERSHIPS

1. Membership Type *Please circle the amount remitted*

11/08

Membership year is annual based on the date of enrollment.

Membership entitles the member to soft copy only for The SE Journal and INSIGHT.

Please see the INCOSE web site for details and eligibility.

DUES

All members may buy hard copies of the Journal and INSIGHT at a reduced rate. (see #6 below)

Regular Membership \$105

Developing Country \$53 (Please contact info AT incose DOT org to verify whether your country qualifies)

Student Membership * \$20

*** Student members must be enrolled at least ¾ time in engineering or related fields and proof of class registration must be submitted with application.**

2. Personal Information *Please write address exactly as it should appear on a mailing label.*

Name FIRST (Given name) M.I. (if any) LAST (Family/Surname) Nickname Check One Mr. Ms. Dr.

Mailing Address (NOTE - We prefer to mail to your home address.) Check One Home Office

Zone or City Code (nonUS only) City State / Prov Zip/Postal Country

Office Phone Office Fax

Email Home Phone (Optional)

3. Professional Information

Company / Agency / Institution

Position / Title

4. INCOSE Chapter Affiliation *Chapter list is available at www.incose.org/chapters/findachapter.cfm*

Colorado Front Range Chapter I wish to be a Member-at-large Please assign me to the closest chapter

I do not want to vote in INCOSE elections electronically. Please send me a paper ballot.

I do not wish to receive emails from INCOSE

Please do not publish my information in the INCOSE Membership Directory

5. Today's Date _____.

6. Hard copy purchase Journal \$30 _____ INSIGHT \$20 _____

7. Amount Enclosed \$ _____ (U.S. Dollars Only)

Check One: _____ Check from U.S. Bank (payable to INCOSE) _____ Money Order _____ Charge Card

Amex, MasterCard or Visa Card Only – For INCOSE Membership Only

Card Number _____ Expiration Date _____

Name as it appears on card _____ Signature _____