

Los Angeles Chapter of INCOSE

COMING EVENTS

**February 9th
Tutorial**

**The Object Oriented Systems Engineering
Method**

Date

Saturday, February 9, 2002

Time

8:00 AM to 5:00 PM;
Registration begins at 7:30 AM

Location

Radisson Hotel at Los Angeles Airport
6225 West Century Boulevard
Los Angeles, CA 90045
(310) 670-9000

Registration

Allan McInnes at 310-336-1871
or at allan.i.mcinnis@aero.org

**March 12th
Dinner Meeting**

Time

5:30 Social Hour
6:30 Welcome
6:45 Presentation

Location

The Aerospace Corporation, 2350 E. El Segundo Blvd. El Segundo, CA

Cost

Free for members, \$10 for non-members,
Pay at the door (includes sandwich makings and sodas)

Members and Nonmembers

By March 8, make your reservation (name, citizenship, company, phone number and email address) with Ron Williamson at 310-336-2149 or ronald.w.williamson@aero.org

**June 8th
Mini-Conference**

Theme

Systems Engineering a Global Discipline

Keynote Speaker

Dr. Paul MacCready

Location

Boeing Facility
Long Beach

Issue No. 1

January, 2002



**From the President
2001 What a Year!!
Michael E. Krueger**

In reflecting on last year, we see, of course, the great tragedy of September 11th, but we also saw great solidarity, heroism, compassion and patriotism. We have also seen a national mobilization to prevent tragic events like this from happening again. As a result, we look at life and our relationships differently, we are more patriotic, more tolerant of others, even grateful for the extra wait at the airports while we are being "patted down".

One might ask, "What does this have to do with Systems Engineering?"

I believe we are witnessing today the resilience, adaptability and self-healing properties of the greatest systems engineering feat ever: our SYSTEM of Government. The development of our SYSTEM of government followed principles much like the best systems engineering principles we endorse today. It has a Concept of Operation called the Declaration of Independence. It has Operational Requirements embodied in Articles of the Constitution. And it has top level Requirements –called the Bill of Rights (complete with SHALL statements).

In its Concept of Operation (our Declaration of Independence), the lead off paragraph is a rationale for the concept:

"When in the Course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume among the powers of the earth, the separate and equal station"

This rationale is then followed by the fundamental concept of operation itself:

"We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty, and the pursuit of Happiness. .."

It should be noted that the 56 Stakeholders representing all the then-existing 13 states signed up to the Concept of Operation. It was thus baselined and has not changed since.

Its Operational Requirements (Articles of our Constitution) address how our SYSTEM of Government will operate. The lead paragraph gives the rationale and sets the stage for the rest of the document:

"We the People of the United States, in Order to form a more perfect Union (System of Government), establish Justice, insure domestic tranquility, provide for the common defense, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish the Constitution for the United States of America"

LECTURER

Sanford Friedenthal



Mr. Friedenthal's experience includes the full system life cycle from conceptual design, through development and production on a broad range of systems including missile systems, electro-optical navigation and targeting systems, and information systems. Mr. Friedenthal has been a manager for systems

engineering at Lockheed Martin responsible for ensuring systems engineering processes are implemented on the programs, and enhancing overall systems engineering capability. Mr. Friedenthal is the liaison between INCOSE and Object Management Group (OMG), and acting Chair for the OMG Systems Engineering Domain Special Interest Group (SE DSIG) to support development of a UML profile for System Engineering.

Tutorial Description

The Object-Oriented Systems Engineering Method (OOSEM) bridges the gap between systems methods and object-oriented software engineering. Based upon the widely known Unified Modeling Language (UML), this method brings object-oriented modeling to the systems engineering community, and adapts it for modeling systems-level requirements and design.

This tutorial will introduce participants to the OOSEM method by describing the basic object-oriented concepts, system level activities, the use of UML, and how these topics integrate with object-oriented software engineering activities.

LUNCH

Continental Breakfast, and Lunch will be provided. If you have special dietary needs, please inform us of your preference.

PARKING

A discounted rate of \$5.00 for self-park and \$7.00 for valet parking is available at the hotel.

DIRECTIONS

From the South:

Take the 405 Freeway North to the 105 Freeway West. Exit the 105 Freeway at Sepulveda Blvd North/LAX Airport. Take Sepulveda Blvd North through the tunnel. After passing the LAX Airport off ramp, get into the right turn lane and turn right onto 98th Street. Turn right on Vicksburg Street and turn right into the hotel parking lot.

From the North:

Take the 405 Freeway South to the 105 Freeway West. Follow the above directions after exiting Sepulveda Blvd. North/LAX Airport.

From the East:

Take the 105 Freeway West. Follow the above directions after exiting Sepulveda Blvd. North/LAX Airport.

These Operational Requirements were endorsed by all the stakeholders (representatives of all the then-existing 13 states).

Finally, the top level requirements were identified, documented, and ratified by the stakeholders. These top level requirements are embodied by The Bill of Rights, which consists of the initial 10 Amendments to the Constitution. These initial 10 Amendments were ratified by Congress in 1791.

The Operational Requirements (Constitution) and its Bill of Rights have been modified over the years through a Change Management Process, consisting of a series of amendments. Each amendment was thoroughly reviewed and approved by its Change Control Board (our Congress) before it was adopted.

I hope you have found the above observations and analogies as interesting as I did, and offer them to you as food for thought. If you have any thoughts on this, or know of any work done along these lines, please let me know.

In conclusion, I believe that the basic Systems Engineering principles we prescribe to today were practiced by the Founding Architects of our Nation. As we witness the resilience, adaptability and self-healing properties that result from a SYSTEM of Government that enables the Human spirit, creativity, and compassion of the individual.

God Bless America

Michael E. Kraeger

**Los Angeles Chapter Mini-conference
Saturday June 8, 2002**

**Theme:
Systems Engineering a Global Discipline**

**Key Note Speaker is
Dr. Paul B. MacCready
Chairman, AeroVironment Inc.**



Dr. Paul MacCready, with an academic background in physics and aeronautics, has become meteorologist, inventor, world champion glider pilot, and explorer of new horizons in conserving energy and the environment and in teaching thinking skills.

He received a B.S. in physics from Yale in 1947, an M.S. in physics from Caltech in 1948, and a Ph.D. in aeronautics from Caltech in 1952.

In 1977, his Gossamer Condor won the \$95,000 award offered by British industrialist Henry Kremer for the first sustained, controlled human-powered flight. Two years later, its successor, the Gossamer Albatross, won aviation's largest prize, the \$213,000 Kremer Award for a human-powered flight from England to France. Subsequently, he has led teams at AeroVironment Inc. that have created many additional pioneering vehicles. In 1981, his DuPont-sponsored Solar Challenger carried a pilot 163 miles from Paris to England at 11,000 feet, powered solely by sunbeams. Another of his human-powered airplanes, the Bionic Bat, won two new Kremer speed prizes in 1984. Under the sponsorship of the National Air and Space Museum and Johnson Wax, his team developed a radio-controlled, wing-flapping, flying replica of a giant pterodactyl – a creature from 70 million years ago with a 36-foot wing span. The replica is the key "actor" in a wide screen IMAX film, On the Wing, which connects biological flight to aircraft. In 1987, his group, working in conjunction with General Motors, built the GM Sunraycer, which won the solar car race across Australia (50 percent faster than the second-place vehicle). Next, the same team developed the GM-Impact, a battery-powered car with remarkable performance that became the catalyst for recent developments around the world in efficient battery-powered or alternatively-fueled vehicles. GM turned this into a commercial version called EV-1. In 2001, the solar-powered Helios, a huge, remotely-piloted descendant of the Solar Challenger, reached the stratospheric altitude of 96,863' (the highest an airplane has ever maintained level flight – by two miles) – a step toward month-long flights in the stratosphere for environmental studies, surveillance, and telecommunications. His groups have developed many commercial products for ground use as well as air, such as devices for using electricity to propel ground equipment at airports and factories, and to provide backup power for operational systems.

The Gossamer Condor now hangs in the Smithsonian Institution's National Air and Space Museum in Washington, D.C., beside the Wright Brothers' 1903 Flyer and Lindbergh's Spirit of St. Louis. It is one of five vehicles developed by MacCready's teams that have been acquired by the Smithsonian. His activities have been featured internationally in museum exhibits, TV documentaries, books and magazines. He lectures widely for industry and educational institutions, emphasizing creativity.

**This one day Mini-conference will include 4 tracks and a panel discussion
Look for the Call for Presentation**

**Location:
Boeing Facility
Long Beach**

INCOSE News

SUMMARY OF 2001 BOARD ACTIONS

New Board took Office in August 2001, and First Board meeting August 16, 2001

- September 6th -New Membership Chair– Susan Ruth
- September 6th -New SE Education Chair – Saul Miller
- September 20th -New Secretary of the board of directors – Scott Jackson
- September 20th -Term of the Board – Extended to December 2002
- September 20th -Constitution and Bylaws –Changes accepted and ready to distribute to membership
- October 18th -The board approved the \$100.00 contribution to INCOSE international for the National Engineers week
- October 20th -The board has passed the following action for this LA Chapter year:
Volunteers (up to 3) who work each of the tutorials will not have to pay for the tutorial, food or material provided at the event.
- December 20th - New Communications chair for 2002 – Ron Williamson

New and Renewing Los Angeles Chapter Members December-January:

Saul Miller	Aerospace Corporation
Sheryl Sizelove	Boeing Company
Karen Petersen	Boeing Rocketdyne
Rachell Radpour	University of Southern California
Robert Reeder	Northrop Grumman

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INCOSE News

Return Address:
899 E. Mango St.
Brea, CA 92821

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INCOSE International News:

For Updated News please access www.INCOSE.org.

The INCOSE International workshop - February 3-7, 2002 in Mesa, Arizona.

Annual INCOSE Symposium July 28- Aug 1, 2002 in Las Vegas, Nevada.

The International Council of Systems Engineering (INCOSE) is an organization formed for the purpose of advancing the art and science of systems engineering in various areas of the public and private sectors. The Los Angeles Chapter meets several times per year for dinner meetings, and additionally sponsors tutorials and other activities of interest to those in the systems engineering field or related fields. L. A. Chapter Officers are as follows:

President:	Michael E. Krueger – michael.krueger@transcore.com
Vice-President:	Katy Kuey – katy.kuey@lmco.com
Past President:	Dave Beshore – David_G_Beshore@raytheon.com
Treasurer:	Marsha Weiskopf – marsha.weiskopf@aero.org
Secretary:	Scott Jackson – scott.jackson@boeing.com
Membership:	Susan Ruth – susan.c.ruth@aero.org
Programs/Speakers:	Michael L Dickerson – michael.dickerson@jpl.nasa.gov
Ways and Means:	Thomas Kudlick – synchrocubed@aol.com
Tutorials/Education:	Saul D. Miller – saul.miller@aero.org
Communications:	Ronald Williamson - ronald.w.williamson@aero.org

Those interested in INCOSE membership please contact contact Susan Ruth.

Those interested in working on a committee please contact the appropriate Director.