



December, 2019

Newsletter

<https://sdincose.org>

From our Chapter President



Abbas Rostami

Season's Greetings my fellow Systems Engineers!

Historically, the fourth quarter of the year is the busiest and so it was again this year. We had our second tutorial of the year and our annual mini-conference on November 1st and 2nd at the Dassault Systems facility in Sorento Valley. In addition, we held our first SEP paper-exam on November 2nd where 16 students took the CSEP certification exam.

The tutorial was given by Mr. Rick Hefner and the topic was “Requirements Management”. This was a 6-hour presentation and Q/A session that was attended by about 40 students. You can view his PDF presentation [here](#), or, watch the recorded video [here](#).

The mini-conference was well attended and covered a dozen presentations,

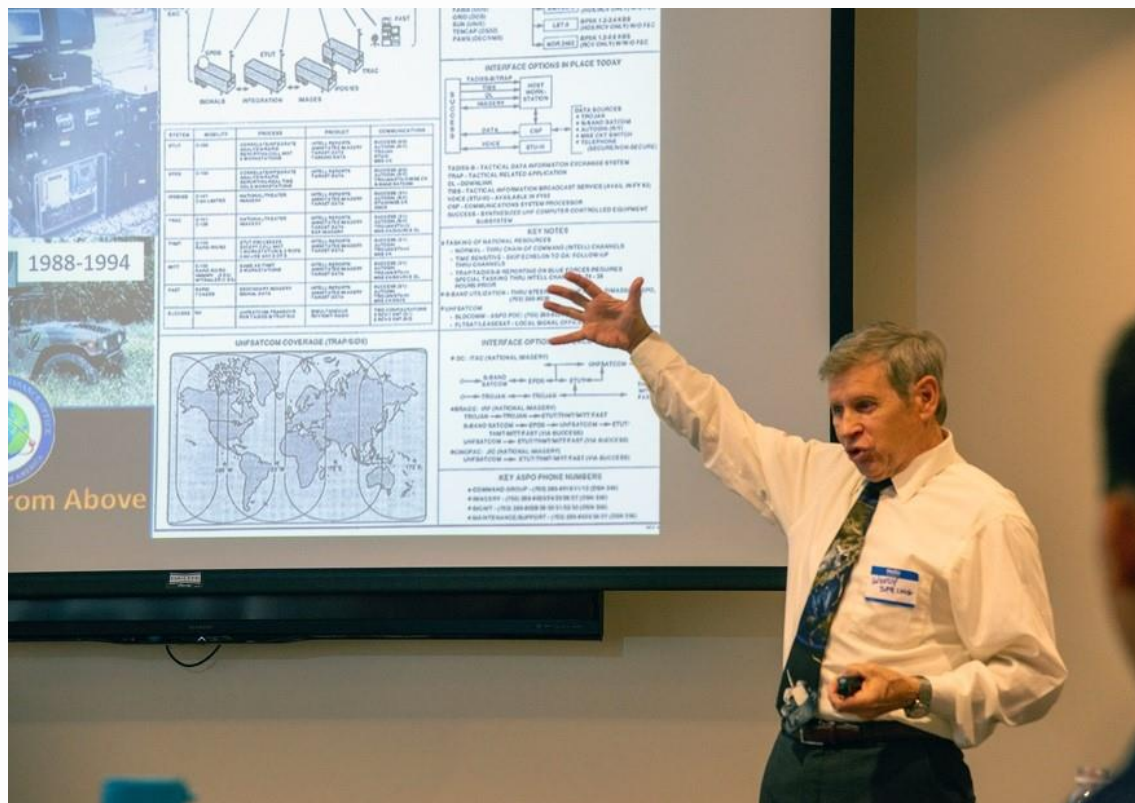
including a keynote by the former NASA Space Shuttle astronaut Woody Spring. His unique presentation was titled “systems engineering challenge of launching a space shuttle into orbit”. You can view Woody's presentation [here](#). Other topics covered included but not limited to the following subjects:

- Applications of Systems Engineering to Laws and Lawmaking
- Artificial Intelligence, Systems Engineering Education
- Model-Based Systems Engineering (MBSE) Applications
- Management Using Systems Thinking

You can view the presentations from the mini-conference [here](#). Here are a few pictures from our mini-conference event:







On Saturday December 7, 2019 – Jim Gottfried (Director of Ambassador Program) and I visited UCSD to give an overview of INCOSE and local chapter activities to the faculties and students of the Architecture-based Enterprise Systems Engineering (AESE) graduate program.

After the presentation we had a great conversation With Dr. Hal Sorenson (program chair) and Mr. Phillip McMullen (director of executive education) about how we can cooperate together to promote their AESE programs and expand our chapter outreach to their graduate students in the future. Attached are a couple pictures from our visit.





Our year-end meeting was held at the Amazon facility in Sorrento Valley. This meeting was attended by about 30 people. Mr. Rob Goodwin, Senior Solution Architect from Amazon Web Services presented major features of AWS and its applications in DoD and commercial environments. This was a well-received and educational presentation followed by a Q/A session.

We are looking forward to work with Amazon local office to have other similar meetings throughout next year. Below are a couple pictures from our meeting.





Our 2020-election is finalized at the time of this writing. As the outgoing president I would like to welcome all of the new and returning board members and wish them a great success in their responsibilities they are about to assume for the next year.

The following is the list of board members as verified by the election committee at this time:

President – Greg Bulla (automatic)

Past President – Abbas Rostami (automatic)

President-Elect – Frank Lacson (new board member)

Treasurer – Richard Bryson (returning board member)

Secretary – Charley Patton (new board member)

VP Chapter Development – Art Villanueva (new board member)

VP Tech Development – Mashasa Zahirnia (new board member)

VP Communications & Webmaster – Keith Conway (returning board member)

1st-Year Director-at-Large – Sarah Ahmad (new board member)

2nd-Year Director-at-Large – Dr. Julia Taylor (automatic)

Director of Ambassador Program – Cyndi Reyes (new board member)

We are looking forward to work together to have another successful year on the record.

I would also like to thank the 2019 board members for their great support and commitments throughout the year. I will have the privilege to serve as the immediate past president during next year and looking forward to work with the new board members.

In closing, I would like to wish everyone a great and safe holiday season with a very successful year ahead.

Best Regards,

Abbas Rostami – SD-INCOSE President

Our Year-in-Review



To say that we had a busy (and very successful) 2019 would be a serious understatement!

Not only did we increase our chapter membership by over 30% (from 193 at the beginning of the year to our highest membership total of 254 at year-end!), we sponsored numerous, career-enhancing events.

These included:

- Our 2019 kickoff presentation by San Pasqual's District Teacher of the Year - Becky McKinney provided an enlightening view on how system engineering principles are being introduced and integrated into the K-12 educational system. Becky shared that engineering has been relatively absent from the K-12 classroom for years, but the Next Generation Science Standards has challenged this absence. These standards incorporate science and engineering practices into every grade level. Becky promoted that utilizing the Systems Engineering

Vee-Model engages young minds to innovate through collaboration, problem solving, negotiating requirements and critical thinking.

- Participation at the International Symposium for the Safe and Smart Cities held at the University of San Diego (USD)'s Center for Cybersecurity, Engineering and Technology. Abbas Rostami participated in a panel discussion on how the System Engineering approach to System of Systems can be applied to the Smart Cities ecosystem. In addition, Dr. Julia Taylor presented the results of a group exercise to manufacture and operate a driverless shuttle between airport and hotels in a smart urban environment.
- Dr.s Victoria Ramirez and John Wood presented an illuminating multi-industry, international study on system engineering leadership proficiencies. Their *Characteristics of Effective Systems Engineering Leaders* presentation spurred a lively discussion amongst the participants as we collectively explored how to cultivate stronger leadership capabilities within the system engineering community.
- Abbas shared his wealth of experience and system engineering knowledge through his presentation on *Applying Systems Engineering from Startup to Grownup*. Abbas addressed the shortfall between applying proven SE techniques while challenged with limited budget, resources, lack of knowledge and time-to-market constraints. His presentation addressed this gap and provided a solution based on the IOS/IEC 29110 standards as well as the guidelines developed by the Small Business System Engineering Working Group.
- Jorg Largent's presentation on the need for a project vision statement highlighted that a clarion vision of the project goals enables a much higher likelihood of scope and budget management while promoting project quality.

- Based upon requests from our SE community, our chapter provided an all-day tutorial in June on Model Based Systems Engineering and SysML using NoMagic. Dr. Rick Hefner and Jason Wilson shared the INCOSE SE Vision 2020 which defines model-based systems engineering (MBSE) as the formalized application of modeling to support system requirements, design, analysis, verification and validation activities. These models provide an efficient way to explore, update, verify, and communicate system aspects to stakeholders, while significantly reducing or eliminating dependence on traditional documents. Further, they shared that the Systems Modeling Language (SysML) provides a general-purpose graphical modeling language for specifying, analyzing, designing and verifying complex systems. The tutorial provided participants with hands-on application of SysML using Cameo Systems Modeler.
- Our San Diego INCOSE Chapter also sponsored a 3-month training cohort for those interested in acquiring their INCOSE SEP Certification (ASEP, CSEP, ESEP). During this 3 month period, a weekly conference telecon was conducted during the lunch hour. The sessions entailed a one-hour student led review of the SE Handbook chapters and application preparation. The main emphasis was to review the entire SE Handbook which provides the material necessary to take the SEP Exam. The end goal was to prepare the students to take and pass the certification exam for the first time! As an added bonus, the San Diego Chapter provided a paper-based SEP exam during the November mini-conference!
- Of course, all work and no play makes for a very boring chapter, so we enjoyed a social get-together at Oggi's in Mission Valley during the summer. Beyond the opportunity to network in a friendly and casual environment ... to say nothing about enjoying free pizza ... we took

advantage of our gathering to celebrate the tremendous recognition bestowed upon our San Diego Chapter – INCOSE's Platinum Award! This prestigious honor is awarded to the top performing INCOSE chapter – WORLDWIDE!

- Our Science-Technology-Engineering-Math (STEM) celebration was enjoyed by many of our community's educational staff and students as well as our INCOSE members at the San Diego's Children's Discovery Museum in Escondido. A live, 'Superhero' stage show was presented by the Fleet Science Center as well as a Robotics Demo. A great time was had by all!
- Abbas and our chapter's past President, Ted Mulder, provided a insightful presentation on mechanics and process of INCOSE working groups. Their presentation covered two especially popular WGs within our community - Agile Systems and Systems Engineering along with Model-Based Systems Engineering (MBSE).
- Dr. Rick Hefner guided another comprehensive tutorial on Requirements Management. As you are already aware, requirements are one of the most critical aspects of modern systems development and also one of the least understood. This tutorial presented a thorough view of industry best practices for requirements development, covering elicitation, analysis, validation, specification, allocation, and verification. An introduction to model-based techniques for developing requirements was also provided. Attendees gained a thorough understanding of techniques and tools for handling common requirements challenges.
- Wrapping up the year was our well-attended mini-conference with its thoroughly fascinating presentations. This year we were especially fortunate to have former Space Shuttle Astronaut, Woody Spring

provide our keynote address. Beyond Woody's engaging presentation, the mini-conference offered 4 other compelling tracks including:

- Applications of Systems Engineering to Laws and Lawmaking
 - Artificial Intelligence, Systems Engineering Education
 - Model-Based Systems Engineering (MBSE) Applications
 - Management Using Systems Thinking.
- The final event for 2019 was a very impressive presentation by our San Diego Amazon Web Services (AWS) team on Cyber-Security and DoD best practices. AWS Senior Solution Architect, Rob Goodwin provided insights regarding the Navy's network connectivity and application migration to the cloud. Rob's authoritative perspective was comprehensive as he is responsible for the architectural excellence of DoD systems with FOUO/CUI and Secret classifications in the AWS Cloud.

Our San Diego INCOSE Chapter was truly fortunate to have such remarkably talented and resourceful professionals share their extensive insights and experiences with our community this past year. We sincerely thank each of our presenters for volunteering their time and expertise as well as the hundreds of attendees supporting their presentations.

Upcoming Events

Event: Winter Social & Chapter Membership Drive at Oggi's in Mission Valley

Date: Wednesday, January 29th, 2020

Location: 2245 Fenton Pkwy #101, San Diego, CA 92108 ([Google Maps](#))

Time: 5:30pm - 8:30pm

Please click [HERE](#) for more information

Event: **Hardware-Inclusive DevOps: Applying DevOps Principles and Practices to Cyber-Physical System Engineering**

Date: Wednesday, February 19th, 2020

Location: TBD

Time: 5:30pm - 7:00pm

More information will be provided in the near future.

Interesting System Engineering Articles



Making a Road Map to Success:

<https://devops.com/how-systems-engineering-help-avoid-product-development-pitfalls/>

Preparing for the Transition to DevOps Engineering

<https://blog.insightdatascience.com/preparing-for-the-transition-to-devops-engineering-7b1589e1e034>

A Systems Engineering Approach to Industrial Cybersecurity

<https://www.arcweb.com/blog/systems-engineering-approach-industrial-cybersecurity>

Enjoy!

INCOSE San Diego Welcomes 22 New Members

INCOSE San Diego is pleased to welcome **22 new members** to our chapter! We now have over 250 active members, an all time high! San Diego continues to be a hub for systems engineering in the medical community, department of defense, telecommunications, start ups, and with a wide range of other industries.

New to our chapter since our September Newsletter:

Kimberly Coppenrath - Moebius Solutions Inc

Matthew Bohlin - XSITE LLC

Michael Meyer - Almanac Systems

Steven Musson - NWIC Pacific
Hugh Nguyen - Colorado State University
Layne Clemen - Simplexity P
Jasmin Shah - Thales Avionics
Kenneth Sakaguchi - Northrop
Julien Cameron - SAIC
Walter Wohlford - SAIC
Daniel Gutierrez - SAIC
Austen Winters - Booz Allen Hamilton
Larry Glick - Viasat
Bruce Grove - Viasat
Kristina Roskos - Dexcom
Art Villanueva - Cubic
Shahin Hessami - Karma Automotive LLC
Alex Pinchbeck - Becton Dickinson
Joseph Ramirez
Saleha Saidani - General Atomics Inc
Lauren Stone - EMBRAER
Keith Manning - US Navy

Please introduce yourself to a new member at one of our many events!

2019 INCOSE San Diego Board Contacts

Please feel free to contact a board member with suggestions or comments:

President - Abbas Rostami, abbas.rostami@gmail.com

Past-President - Ted Mulder, tedmulder@gmail.com

President-Elect - Greg Bulla, gbulla@yahoo.com

Secretary - Keith Conway, keith_conway@yahoo.com

Treasurer - Mike DiPaolo, michael.j.dipaolo@saic.com

VP Administration, Webmaster - Gary Saner, gsaner@primerosystems.com

VP Chapter Development - Howen Fernando, hqfernando@gmail.com

VP Technical Development - Ray Madachy, madachy@gmail.com

2nd-Year Director - Susanna Faruque, susanna.faruque@ngc.com

1st-Year Director - Dr. Julia Taylor, drjulia2taylorsuccesssystems@gmail.com

Ambassador Program Director - Jim Gottfried, gottjim50@gmail.com

You can also send general questions to: info@sdincose.org

Links:

info@sdincose.org

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