INCOSE Chesapeake Chapter
International Council on Systems Engineering

INCOSE Chesapeake Chapter
P.O. Box 535
Laurel, MD 20725-0535

E-Newsletter

January 2017

President's Point of View (POV)

**Mike Pafford
President**

Happy New Year to Everyone! I'm very much looking forward to working with the full Chapter membership to continue its excellent contributions to the Systems Engineering community. As I said in my original Candidate's Vision Statement, I envision continued success and increased global recognition for the INCOSE Chesapeake Chapter, picking up where it left off as the 2014 INCOSE President's Award as the most successful Chapter world-wide, and as one of the first five Chapters world-wide to receive the highest-level Platinum Chapter Award in 2015. I'm confident the Chapter will be recognized as having achieved at least that level of accomplishment for its efforts in 2016. I'd like to see a steady increase in Chapter membership in 2017, and I pledge to help the Chapter Board of Directors and General Membership in any way I can to make that happen. I would also like to help the Chapter actively enhance its professional relationships with the local Program Management Institute (PMI) Chapters, as well as with IEEE, the Software Engineering Institute (SEI), and other local STEM-related organizations. I'm ready to help act on any and all ideas and initiatives. Good Luck to us all during the coming year.

This is the monthly newsletter for INCOSE Chesapeake, a local chapter of INCOSE International. We are a not-for-profit organization dedicated to providing a forum for professionals practicing the art and science of Systems Engineering in the Northern & Central Maryland & Southern Pennsylvania area.

Chapter Programs Update

**Gundars Osvalds
ESEP,
Programs Director**

We're starting a new year with a dinner program titled "Transitioning OMG UPDM to ISO Unified Architecture Framework (UAF)" that describes the work by the Object Management Group in developing a new specification for describing and modeling an enterprise or system. The presentation outlines the development of the Unified Profile for DoDAF and MODAF (UPDM), its basis on SysML, and its evolution into the Unified Architecture Framework (UAF) at the Object Management Group. The OMG is a private standards development organization. UPDM 2.1 is a mandated standard registered in the DoD IT standards registry Use of compliant tools are required in development of enterprise and systems architectures in DoD acquisition program. The presenter is Mr. Leonard F. Levine, Defense Information System Agency who is not representing the views of DoD or DISA. The meeting will be held on January 18 with dinner beginning at 6PM and the program at 7PM. Please register at www.incose-cc.org/registration. *NOTE: Due to construction, the meeting will be held in JHU/APL Building 200 for this month.*

We welcome your ideas and recommendations for future 2017 monthly dinner Presentations, Tutorials, Training, or Workshops. Please send your ideas and proposals to: programs@incose-cc.org.

Communications Corner
A Tribute

Myra Parsons Gross ESEP, Communications Director

This kindred spirit is known to many and brings forth a wealth of knowledge along with the tenacity to make things happen. **George W. Anderson,** ESEP, our Immediate Past President, has tirelessly served the Chesapeake Chapter for over 15 years.

In the three years I have known George, I learned much about the value of systems engineering and certifications. When I met George, I was already a seasoned systems engineer with over 28 years of experience, but George taught me the value of my skill set, and encouraged me to embrace my achievements in a new way. I met George in early 2014 when the Women in Systems Engineering (WISE) organization was launched by the chapter. Prior to then, I had no idea INCOSE existed. When the opportunity presented itself to be a part of this new organization with interest in women, I embraced it and assumed a major role and committed to pursue the goals of its charter. George remains an avid supporter of WISE, clearly values diversity, and specifically has an interest in increasing the representation of women in systems engineering. His efforts are seen in his continued involvement with WISE and in his professional environment where he makes a point to encourage women to pursue systems engineering certifications.

A natural leader, George spearheaded many programs that inspire, promote knowledge sharing, and facilitate the advancement of systems engineering and certifications. Having received top International awards for the last 6 years, the Chesapeake Chapter is well known and respected for being top notch within the International construct of INCOSE, and serves as a model for other chapters world-wide. George has been instrumental in progressively establishing high standards for the chapter and ensuring those standards are met which consistently sets our Chapter apart.

George serves as a role model for all systems engineers who practice an interdisciplinary "process" approach to success, beginning with understanding the problem, defining the desired functionality and requirements before proceeding to design and implementation, and completing system validation. The systems engineering approach ensures that customers and stakeholders are satisfied with system performance, quality, cost, and schedule throughout a system's entire life cycle by reducing risk, minimizing problems, and optimizing integration. George understands the value of systems engineering and continually educates industry, government, and academia and has made head way in gaining greater acceptance of systems engineering.

I commend George for his continued efforts to promote systems engineering, through his involvement with INCOSE, in his professional work environment, and by collaborating with and engaging other professional organizations.

On behalf of the INCOSE Chesapeake Chapter, I thank **George W. Anderson** for his commitment, inspiration, and enthusiasm for the field of *Systems Engineering*.

Silent Auction Success
Ellie Gianni, ESEP, Past President

As we start out the New Year we need to thank all of our members and chapter supporters who continue to work with us to provide meeting space, and bring speakers and opportunities for training and workshops that are relevant to the growth of our trade. Without you, we could not do what we do. We especially would like to thank those sponsors who participated in the Holiday Party, Awards Ceremony, and Silent Auction on December 7, 2016. These sponsors donated auction items, advertised in our program, and purchased seats at the event.

Silent Auction Donors and INCOSE Chesapeake Chapter Sponsors

Mr. George Anderson, ESEP
Certification Training International (CTI)
The JHU: Whiting School of Engineering
Engineering for Professionals (EP) Systems Engineering (SE) Program
The JHU Applied Physics Laboratory (APL)
The Engineers Club of Baltimore
The Gianni Family
INCOSE Certification Program
Mr. Bob Levin
Mr. Michael Pafford
Ms. Monica Mathern, CSEP, Author
Osvalds Photography
Sawyer Wealth Management
Ms. Allene Mikrut
Ms. Joanne T. Serelis
Amandamations, Ms. Amanda Stolarski
Women in Systems Engineering (WISE)
Leadership Team

Tony Gigioli, Chapter Treasurer, presents the INCOSE Foundation donations to Dr. John Ross Snoderly, CSEP, Foundation Chair

Door Prize Photograph, "Bryce Canyon" Door Prize valued at $300 donated by Osvalds Photography, Mr. Gundars Osvalds, ESEP

Music Sponsored by INCOSE Chesapeake Chapter Board Members
Mr. George Anderson, ESEP
Dr. Grace Crowder
Ms. EleanoraAnn Gianni, ESEP
Mr. Gundars Osvalds, ESEP
Mr. Michael Pafford

The Chesapeake Chapter of INCOSE is proud to recognize the following organizations for sponsoring our endeavors to expanding the understanding and appreciation of Systems Engineering in the local area.

Silent Auction Chair: Mr. Michael Pafford

Chesapeake Chapter Holiday Party and Awards Chair: Mr. Gundars Osvalds, ESEP

The auction benefited the INCOSE Foundation Chesapeake Chapter Scholarship Fund. Friends of the Chapter and Members donated $350 directly to the Foundation. In addition to cash donations, the Silent Auction proceeds were provided for a total of $2,923. Top sellers included the Redskins Carolina Football Tickets for a Monday Night game including parking and on-field passes for $600 and Ravens Eagles Club Seat Tickets for $300. Over 50 items were on the auction block. The chapter also donated our annual gift of $1,000 to the Foundation, along with a $300 donation to support the Wine Soiree Fundraiser at IW 2017.

Items available at the Silent Auction included Ravens Tickets, an "As Seen on TV" Gift Basket, Bass Pro Shop Gift Cards, and a Super Bowl Game Day Program

The dinner was also a success, with 100 attendees. We recognized the efforts of our members as they contributed to chapter operations during the 2016 year. We recognized 45 volunteers for their service, along with 14 sponsors and 2 scholarship recipients. Our 2016 Sponsors who attended and were recognized at the event included:

2016 Sponsors receiving awards at the ceremony included (from left to right) Dr. Ron Luman, JHU; Heather Johnson, Jovian Concepts; Jim Thomas, CSEP, MetaTech; David Fadeley, ESEP, ITC; Paul Martin, ESEP, SE Scholar; and Pat Williams, CSEP, Vencore

This Newsletter is to serve our members and is open to all for contributions.

Do you have an interesting idea for an article?

A review of a new book related to engineering?

Let us know. We'd love to hear about it. It may end up in a future issue of our Newsletter.

- Integrity Technology Consultants (ITC) – Mr. David Fadeley, ESEP
- The Johns Hopkins University Whiting School of Engineering, Engineering for Professionals and The JHU Applied Physics Laboratory (APL) – Dr. Ronald Luman
- Jovian Concepts – Ms. Heather Johnson
- MetaTech Consulting – Mr. James Thomas
- Northrop Grumman – Mr. Bob Brouwers (for Mr. Emmet "Rusty" Eckman, ESEP)
- SE Scholar – Mr. Paul Martin, ESEP
- Vencore – Mr. Patrick Williams, CSEP
- 2HB – Mr. David M. Doggett

Finally, we recognized our Past President, George W. Anderson, ESEP, for his service to the chapter. I had the opportunity to present George with a Past President's pin, a crystal trophy, a watch inscribed with the chapter emblem and his name, and an award medallion. George has served as the President of the chapter two times -- that includes 6 years of leadership service. He has helped the chapter grow from receiving the Most Improved Chapter Award in 2010, to receiving the President's Award for Best Chapter in 2014 (that is Best Chapter in the World), and the Platinum Circle Award in 2015. He also received an INCOSE Outstanding Service Award in 2015. It has been both an honor and a privilege to serve with him. Best wishes to everyone in the New Year!

David Doggette, 2HB, receives 2016 Sponsor recognition

Bob and Candice Brouwers enjoying the holiday festivities at the Engineers Club in Baltimore

Mr. George W. Anderson, ESEP, receives the Past President's Award for his service to the INCOSE Chesapeake Chapter. Mrs. Doreen Anderson also is recognized with a presentation of flowers from chapter Communications Director, Pat Williams, CSEP, for her, "Years of Service", as the spouse of a Chesapeake Chapter President.

what people are saying about Chesapeake Chapter:

"… What a wonderful, innovative, and impactful year for the Chesapeake Chapter. I hope you, your board, and the entire chapter is proud of what you have accomplished…"
Past President,
INCOSE

CYBERTOPICA
George Anderson, ESEP
Past President

We are more interconnected today than ever before. Though we appreciate this technological advancement, we are more vulnerable to theft, fraud, and abuse. Our nation's security, economy, and basic livelihood is dependent on a stable, safe, and resilient cyberspace.

I read articles in the New Yorker magazine, the USAF Air University Review, and several Northrop Grumman Company pamphlets that are soberly defining the problem and recommending solutions to Cybersecurity issues. My first reaction to reading much of this is to wonder how we got ourselves in such a vulnerable position so quickly. Are we so vapid that we designed, developed, and now operate, networks that legions of script kiddies* around the world can exploit largely unopposed and unidentified?
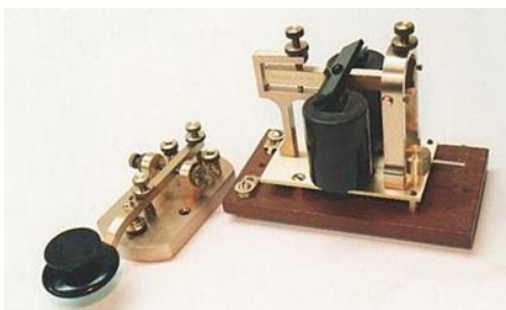
Roman Keys to Doors or Lockers

The sky is falling crowd always tells a good story but I have utmost confidence in the long-term stability of our infrastructure. My confidence is based on the history of technical progress and more specifically on the ubiquitous history of locks. We have a great deal more insight into the life cycle of locks than of information technology.

Mechanical locks are known to predate the ancient Egyptians and have been continually improved as new materials and manufacturing methods became available. The basic principles of operation are notably common and a person trained in lock picking today is right at home manipulating a lock dating from antiquity.

By comparison, the first modern network could be considered the telegraph. Even by today's standards this system had a number of admirable advantages: it was simple, standardized, and completely interoperable. Added to this, the user interface was easy to learn and required mastery of only simple repetitive skills.

To explain further, the telegraph key and sounder were the standard user interface that when connected to a single wire and a battery constituted the network. Any number of user interfaces could be connected and the control of traffic was based only on operator protocol. Any person attaching his key and sounder to "the wire" could read and send traffic. This dictated that some sort of message encryption was needed and indeed many commercial systems were developed over the lifecycle of the telegraph to satisfy this requirement.

The hacker problem really began when systems evolved to the point where the human interface was reduced and many actions were made autonomous. This got even worse when processing and control capabilities were able to transit the network in addition to message traffic without human participation or notification.

The internet protocol network is currently the ultimate example of system autonomy and provides an opportunity for any participant to maliciously control or operate components of systems owned and operated by others.

Human intervention could mitigate some risks but the speed of data flow on today's networks requires automation to successfully watch over the performance of existing systems.

What, then, do locks have to teach us about the future of the Internet?

At least six items come to mind.
1. Historically, we have learned that improving lock security requires expensive, complex and constantly changing designs.
2. Locks adopted an encryption system that had to be easy to implement, standardized for ease of logistics support, and maintainable by existing skill sets.
3. Locks were routinely compromised "picked" by experts shortly after being put in service.
4. The number of expert lock picks was always small in relation to those who imitated their methods and were able to duplicate their success.
5. The mature state of the lock industry today consists of multiple tiers of lock design based on the vulnerability to picking. Most household locks are medium security based on a tradeoff between cost and the estimated population of imitators who can successfully attack the lock. If a high value location needs protection, then the lock must exclude all imitators and delay, but not defeat, the expert.
6. The overall lesson learned from locks is: the determined expert can be delayed but almost never defeated. Contrast the few experts to the vastly more numerous imitators and the associated risk analysis points to a medium design as the most useful class of locks.

If this evolution comparison is valid, the solution to the Cyber threat will be a never-ending expansion of our knowledge of vulnerabilities and constant improvement of the corrective tools and processes just as we have seen in the extended development cycle of the lock.

Events and Announcements

2017 Chapter Meetings and Lectures
Scheduled Chapter Dinner Meetings are held at the Johns Hopkins University Applied Physics Lab (JHU/APL) in the Building 1 Cafeteria and Parsons Auditorium on the third

Wednesday of each month unless otherwise noted. The Meeting starts at 6 pm (Dinner $20 in advance / $25 at door), and the Free Lecture starts at 7 pm. Please complete your Registration at www.incose-cc.org/registration.

- Jan 18 (followed by Installation of Officers) Building 200 Cafeteria & Auditorium
- Feb 15
- Mar 15
- Apr 19
- May 17
- Jun 21
- Jul 19
- Sep20
- Oct 18
- Nov 15

Monthly Chapter BOD Meetings
Monthly Board of Directors Meetings are held at JHU/APL in the Building 1 Barton Conference Room the second Wednesday of every month beginning at 6:00 PM and ending at 8:00 PM. For January 2017 the meeting will be held in the JHU/APL Kossiakoff Center.

Monthly Chapter Communications Committee Meetings
Monthly Communications Meetings are held the first Wednesday of every month beginning at 6:30 PM and ending at 7:30 PM. Please contact the Communications Director for more details: communications@incose-cc.org.

Other Events (Workshops, Tutorials, Conferences, Community Outreach, Special Events)
- **Jan 28 – 31, INCOSE IW 2017** - INCOSE International Workshop (IW 2017): INCOSE kicks off each year with its annual gathering of the membership to discuss and advance the state of the art of systems engineering. Spend several days of intense activities centered around technical content with volunteers who meet electronically during most of the year. This is the time to collaborate and celebrate in person. The prestigious Working Group Award winners are named at IW, as is the recipient of the Johns Hopkins INCOSE scholarship; and, newly elected officers and directors are installed. The gathering is capped off with an annual INCOSE Foundation Wine Tasting to raise money for Foundation activities. Visit the IW 2017 Website for more details: www.incose.org/IW2017/home

- **February 6-10 CSEP Training Course,** 7:30-3:30 PM Daily, JHU/APL Kossiakoff Center. Register at http://www.certificationtraining-int.com/. Chesapeake Chapter Members receive a 10% discount.

- **Mar 23 – 25, CSER 2017 15th Annual Conference on System Engineering Research:** Disciplinary Convergence: Implications for Systems Engineering Research, Refer to the CSER website for details and Call for Papers!

- **Apr 24 – 27, 11th Annual IEEE International Systems Conference,** Montréal, Québec, INCOSE Track at IEEE Systems Conference Call for Papers!
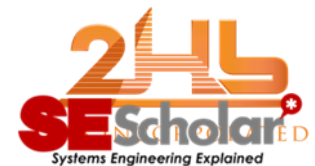
- **May 5 (Adverse Weather Date, May 12), Anne Arundel County Public Schools Science Fair** (please contact president@incose-cc.org if interested in volunteering)

- **May 16 – 18, INCOSE Healthcare Working Group:** "Agile Methods for the Development of Healthcare Systems 2017". Agile Software Development has been delivering value to software development teams for many years, but Agile is not just for software development - Agile Product Development principles apply to the creation of any system. This conference focuses on the application of Agile principles in practices in the development of medical systems – systems built by large teams and/or systems that include more than software. Visit the Conference Website for more details:
  http://www.incose.org/ChaptersGroups/WorkingGroups/Application/healthcare/agile-healthcare-conference-2017

- **Jul 17 – 20, INCOSE International Symposium (IS 2017):** Each year, INCOSE hosts the International Symposium as its flagship event for systems engineers worldwide. Keynote Speakers on topics reflecting not just systems engineering relevancy by issues with global currency are presented during this annual gathering. Panels, papers and presentations fill four days of opportunities. INCOSE's most prestigious awards are bestowed during IS. Industry, government, and academic exhibitors fill the Exhibit Hall to share information about new developments. Students display award-winning engineering projects. Mentors and mentees are introduced to each other. Social activities – formal and informal – bring people together in a highly energized and productive atmosphere. Visit the IS 2017 Website for more details: www.incose.org/symp2017/home/when-where

- **Aug 18**, **INCOSE Chesapeake Chapter 8th Annual SEP Gala**
- **Dec 6**, **INCOSE Chesapeake Chapter Holiday Party and Awards Ceremony**

Membership Arena

Mark Kaczmarek, Membership Director
The Chesapeake Chapter proudly welcomes our new members:

December 2016 Chesapeake Chapter New Members
- *Francesca Raub,* Capella University
- *Terra Bjorling*, ASRC Federal

Congratulations to Newly Certified SEPs since August 2016:
- *David Flanigan, CSEP -* JHU/APL
- *Ram Sathi, CSEP -* Northrop Grumman Corporation
- *Benjamin Gianni, ASEP -* Loyola University Maryland
- *Lance Harvey, ESEP -* Jacobs
- *Joseph Dougherty, ASEP*
- *James Starkey, CSEP*
- *Gary Lantz, CSEP -* The Boeing Company
- *Linnea Wright, CSEP –* Booz Allen Hamilton, Inc.

Interested in Jobs & Networking
Contact Mark Kaczmarek
membership@incose-cc.org

INCOSE Chesapeake Chapter
International Council on Systems Engineering
20 Years

Mark Kaczmarek
Membership Director, 2016

(301) 947-4072
www.incose-cc.org

mkaczmarekengr@comcast.net

INCOSE

Chapter Business Cards
Please contact

Mark Kaczmarek at
membership@incose-cc.org
to obtain your own Chesapeake Chapter business cards.

Free to Chesapeake Chapter members.

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WHITING SCHOOL of ENGINEERING

Keep up with the latest news and events. Find out about our new Board of Directors. Explore our extensive library of previous lectures from our Monthly Dinner Meetings. Learn of the Benefits of Joining INCOSE. Check out Systems Engineering education in the local area. All this and more awaits you at our INCOSE Chesapeake Chapter Website www.incose-cc.org
For any comments or suggestions about this newsletter please e-mail our communications team at communications@incose-cc.org. We value your feedback.

Board of Director Officers, 2017
- President: Michael Pafford
- Past President: EleanoraAnn "Ellie" Gianni, ESEP
- President-Elect: Dr. Grace Crowder
- Treasurer: Tony Gigioli, PMP
- Secretary: Craig Tyler, ESEP
- Programs: Gundars Osvalds, ESEP
- Communications: Myra Parsons Gross, ESEP
- Membership Committee: Mark Kaczmarek

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