

The NorthCoast Interfacer



2008 2009 – 2013, 2015 2014

President's Corner

I recently watched The Lego Movie for the first time and was pleasantly surprised by how clever it was! I happened to watch it when thinking about this newsletter, so perhaps I was particularly inclined to pick up on some systems engineering principles that would have otherwise gone unnoticed. Maybe I need a side job as a systems engineering movie consultant!

To summarize the plot, an ordinary construction worker, Emmet, finds he has become a central figure of a prophecy in which he's the only one who can help stop an evil businessman from taking over everything in the Lego world, and permanently gluing pieces into uniformly built structures. Emmet inadvertently teams up with an eclectic group of characters, including Batman, a wizard, and a Unicorn-Kitty, in an attempt to disable the evil businessman, Lord Business', weapon, the "Kragle" (aka crazy glue).

In one particular scene, Emmet and his cohorts must devise a means of escape from certain destruction by Lord Business' henchmen. Emmet, who has never built anything other than what is prescribed by the instructions, finds himself at a loss for what to build. However, Emmet's team includes several "master builders" (or subject matter experts?) who can build just about anything from just about any Lego pieces. The group collectively realizes they must build a submarine, but their planning discussions stop at this realization. In the absence of a central leader, and a clear vision for the system, these independent thinkers start adding their subsystems according to their individual whims and preferences. At one point, the wizard says to Emmet: "don't worry about what the others are doing; you must embrace what is special about you." While the haphazardly-developed, poorly-integrated submarine appears to hold water initially, it isn't long before it starts springing leaks, and eventually implodes. If only they had held a few design reviews and conducted some qualification and acceptance testing...

After Emmet's group is rescued, he leads the team in developing a plan to sneak into Lord Business' lair. Emmet realizes the team's individuality prevents them from working effectively together, and they need to come up with a way to leverage their individual skills in a way that

results in overall success. The team takes a more system-level approach to developing this plan, after realizing that simply building a cool submarine won't result in the desired outcome. They consider their environment, and build vehicles and disguises to seamlessly integrate and interface with it, fooling several robots and a security system while infiltrating the lair. The team's second build attempt, with an upfront design, assembly and integration procedures (instructions), and defined environmental interfaces, was much more successful than their submarine!

I encourage you to watch the movie and discuss it with me at a future chapter meeting!

Katie Trase
C-NO President 2017

A Look Back

One of the primary ways in which the Chapter has tried to provide value to its members is through Chapter meetings. These meetings provide a means to network with other individuals in the systems engineering field, to gain knowledge through presentations and discussions, and to learn about what is going on within INCOSE. Since the beginning of 2008, a little less than 10 years ago, I counted 89 Chapter Meetings, or related events, run by the Chapter. And the vast majority of these have been free to participate in. They have included presentations, tours, social activities, discussion topics, strategic discussions, business discussions, shared webinars, and even a one-day seminar. Some events even served specifically as outreach to university students, organizations, and/or businesses. Speakers have been Chapter members, past INCOSE Presidents, individuals from academia, tool vendors, individuals from other INCOSE Chapters, from host organizations, and invited guests. Topics have ranged the gamut from classical systems engineering, to related disciplines, to system overviews, to history, and to social responsibility. A full list of events and topics can be found in the Chapter's repository in [INCOSE Connect \(https://connect.incose.org/Chapters/Cleveland-NorthernOhio/Shared Documents/Chapter Meeting Minutes/Past Topics.xlsx\)](https://connect.incose.org/Chapters/Cleveland-NorthernOhio/Shared/Documents/Chapter%20Meeting%20Minutes/Past%20Topics.xlsx).

Unfortunately, there has been a noticeable drop in the number of Chapter members who have been attending Chapter meetings. A few years ago we averaged 12 members and several guests in attendance. Recently numbers have averaged around six members and only a couple guests. Our Chapter membership has pretty much remained steady at 50 plus or minus a few, so the attendance is not due to fewer members. Obviously for those who are an hour or more away from a meeting venue, it is understandable, but if you are near our meeting venues, I would like to encourage you to consider attending Chapter meetings. Your elected leaders work hard every year to try to identify meaningful Chapter meeting topics and provide those opportunities for networking and discussion with fellow systems engineers. Even if you think you would gain nothing by attending, think about what you might have to offer to some other attendee, who could benefit from hearing about your experiences.

Looking forward, what types of events would you like to see the Chapter hold and what topics would you like to see addressed? What would make your Chapter membership value-added? Let us know!

As I have asked in past articles, how should we celebrate our first ten years? And maybe more importantly, what should the vision be for the next ten? Let Chapter Board members know your thoughts.

Dennis Rohn

New Chapter Members

In June and July we had three new members join the Chapter: Katrina King (Battelle), Sridevi Lakshminarayanan (Bombardier Transportation), and Benjamin Shrager (Case Western Reserve University).

Katrina King graduated from The Ohio State University in 2011 with a bachelor's degree in Aeronautical and Astronautical Engineering. She has a little over 6 years of diversified technical experience working closely with engineers, designers, technicians, manufacturing, suppliers, and customers. Upon graduation in 2011, she worked for UTC Aerospace Systems in Troy, Ohio designing wheels and brakes for commercial and military aircraft. In 2015, she joined Battelle in the CBRNE Defense business unit and is currently working as a Design/Systems Engineer on government contracted projects.



Benjamin Shrager is a Junior at Case Western Reserve University studying Systems and Control Engineering. Though he is still a student, he is very excited to get involved with INCOSE and see how he can bring it to Case Western campus. At Case, Benjamin is involved with the Spartan Marching Band and is the Scholarship Chair of his fraternity. Benjamin's experience includes working as a Programming Intern at Keepers Child Safety, a tech startup located in Israel, and interning in the Lean Six Sigma Office at NASA GRC to get his LSS Green Belt certification. He is very excited to learn as much as possible in INCOSE.

Welcome to all of you. The Board of Directors hopes the Chapter can aid you in your professional development, and looks forward to getting to know all of you.

Dennis Rohn

Cleveland-Northern Ohio Chapter Membership Chair

July Chapter Social

Chapter members, family members, friends, and co-workers attended a Cleveland Indians baseball game on Friday, July 21. The twenty attendees enjoyed seeing the Indians beat the Toronto Blue Jays 13-3, and begin a nine-game winning streak, one of the longest this season. The evening was capped off by a nice fireworks display.



NASA Interns enjoying the game with the Chapter



Dennis Rohn, a NASA co-worker, Tim Schuler, and his wife

You are invited to the following event:

INCOSE N-NOh September Chapter Meeting:
[Behind the Scenes Cedar Point Tour](#)



Friday, September 22, 2017, 3:30 - 5:00 PM (EDT)
Cedar Point
1 Cedar Point Drive
Sandusky, OH 44870

This paid event is open to INCOSE Members, Friends, and Family (12+ years old), first come, first served. Maximum Attendees: 30

Join your fellow Chapter Members for an exciting behind-the-scenes tour of several Cedar Point roller coasters! We'll hear from two Cedar Point engineers, Eric Lapp and Larry Shivak, as they give us the operational details of popular park rides. They will discuss some of the systems design challenges associated with increasing the operational reliability (i.e., 'up-time') of the Top Thrill Dragster, which faced high downtime during its first few seasons.

After the behind-the-scenes tour, you may choose to enjoy the park during their evening hours, from 6 PM to midnight! (Note the hour between the end of the tour and the park opening)

If you wish to **both** attend the tour and enjoy the park, please purchase both a tour ticket and a park ticket, below. You'll also need a parking ticket if you plan to enjoy the park.

Our park and parking tickets are at the Group Rate, and include taxes and fees. Revenue from Tour tickets goes to the Cleveland-Northern Ohio chapter, to support regional conference sponsorship and future chapter tutorial(s).

Neither Cedar Point admission tickets nor parking tickets (other than your Eventbrite registration here <https://www.eventbrite.com/e/incose-c-noh-september-chapter-meeting-behind-the-scenes-cedar-point-tour-tickets-36102156522>) are needed for the tour. You will not be charged for parking when arriving for the tour. After the tour concludes, everyone will exit the park, and those in the group that wish to stay and attend the park may do so with their park admission and parking tickets.

We hope you can make it!

Cheers,
INCOSE Cleveland-Northern Ohio Chapter
<http://www.incose.org/cleveland>

Future Events

The list below provides a sampling of upcoming events that may be of interest to INCOSE members.

- September 12, 2017, 3:00-5:00 PM ET – Stevens Institute of Technology Systems Leadership Series: *Modeling Systemic Risk*, by Dr. Garud Iyengar
<https://www.stevens.edu/events/modeling-systemic-risk>
- October 4, 2017– Systems Engineering Research Center “SERC Talks”: *What are the Top Ten Software Security Flaws?*
 - <http://www.sercuarc.org/events/serc-talks-what-are-the-top-ten-software-security-flaws/>
- October 11-13, 2017 – 2017 IEEE International Symposium on Systems Engineering (Vienna, Austria) <http://2017.ieeeisse.org/>
 - Paper submittal deadline has passed
- October 11-14, 2017 – 11th Great Lakes Regional Conference: (Minneapolis/St. Paul, MN) <http://www.incose.org/glrc11>
 - Paper submittal deadline has passed
- October 13, 2017 – 11th Great Lakes Regional Conference – Professional Development Day (Cleveland, OH) - TENTATIVE
- October 23–26, 2017 – 20th Annual NDIA Systems Engineering Conference (Springfield, VA) <http://www.ndia.org/events/2017/10/23/20th-systems-engineering-conference>
 - Paper submittal deadline has passed

- October 31-November 2, 2017 – EnergyTech 2017 (I-X Center, Cleveland, OH)
<https://www.energytech.org/conference/call-for-presenters/>
 - Paper submittal deadline – July 31, 2017
- January 20-23, 2018 – INCOSE International Workshop 2018 (Jacksonville, FL)
<http://www.incose.org/IW2018>
 - No papers/presentations
- March 4-11, 2018 – IEEE Aerospace Conference (Big Sky, Montana) <http://aeroconf.org/>
 - Abstracts submittal deadline has passed
- April 23-26, 2018 – 2018 IEEE International Systems Conference (Vancouver, Canada)
<http://ieeesystemscouncil.org/>
 - Initial Manuscript deadline – November 1, 2017
- July 7-12, 2018 – INCOSE International Symposium 2018 (Washington DC)
<http://www.incose.org/symp2018>
 - Paper submittal deadline TBD

Dennis Rohn

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