



North Star Chapter INCOSE

The Integrator

North Star Chapter of INCOSE Newsletter

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Chapter News

September: Your Travel Behavior is Being Studied

Jonathan Ehrlich spoke about the Metropolitan Council's long range forecasting and planning process. What do we know about travel behavior and how do we measure it? What has changed recently? Jonathan went over traditional tools that have been used to forecast transportation needs, and how they are evolving in response to contemporary questions and opportunities. He will discuss how this fits into the long-range planning and investment decision process for regional transportation. Much discussion centered around modeling behaviors and how they are closely tied to Model Based Systems Engineering (MBSE)



Our presenter, Jonathan Ehrlich, is a Professional Engineer and is a Planning Analyst for the Metropolitan Transportation Services.

August Joint SAE Meeting: Towing Vessels and the Barge Industry at Upper River Services in St. Paul Presentation and Tour

Dick Lambert, barge industry veteran, gave a presentation on the vital historic industry, how it shaped industry in Minnesota and along the Mississippi as well as its relevance to today's goods delivery services. The presentation was followed by a tour of the facilities of Upper River Services in St. Paul, operator of towing vessels and service provider for the barge industry.



Dick Lambert is a veteran of the local barge industry with a career spanning 32 years. He has been an employee of the Minnesota Department of Transportation and other organizations associated with the Mississippi River and Great Lakes barge industry. Mr. Lambert's presentation will provided an overview of the barge industry in Minnesota.

The talk was followed by a tour of Upper River Services "State Street" facility that offers barge and towing services. Upper River Services, LLC (URS), is a full service, river operation located on the banks of the Mississippi River in St.

Paul, Minnesota. URS has been providing quality services to the inland marine transportation industry since 1984.



North Star Chapter Summer Social along the St Croix River



We always have a great time at the North Star Annual Summer Social but 2016 has a special twist. The social will be a special cruise (including a full buffet meal) down the St Croix River on our own private chartered paddle boat.

We were accompanied by Kevin Western, the MnDOT engineer in charge of designing the new and most impressive St Croix River Bridge. We not only went by the old lift bridge while he gave us a history lesson on it but we got to go under the new one as he told us how it was designed and how it is being built.

For Upcoming Chapter Events Please Go to [North Star Chapter Website ...](#)

On the International Front...

At the International Symposium 2016 in Edinburgh the NSC was well represented by Dave Walden and his presentation of an award winning paper, **Defensibility: Legal Liabilities of Acts and Omissions in the Practice of Systems Engineering**, with David Long of Vitech Corp. This was part of the Leadership in Systems Engineering track.

Abstract: Systems Engineers assigned to projects spend a majority of their time on technical and technical management processes. In order to produce balanced system solutions, systems engineers rely on specialty engineering activities (informally known as the “ilities” because many of them end in “ilty”) to trade performance requirements with non-functional requirements (also known as quality attributes). The INCOSE Systems Engineering Handbook Fourth Edition (INCOSE, 2015) lists 14 “ilities” including affordability, reliability, and usability. This paper introduces defensibility, an additional “ility” that attempts to balance the legal aspects of the system and its development effort. Professional legal liabilities stem from two primary sources: acts and omissions. Breaches of acts arise when an activity has been done, but it was done poorly or an improper action was taken based on the situation. Breaches of omissions arise when an activity was not done that should have reasonably been done under the circumstances. This paper explores both of these liabilities in the context of systems engineering and provides practical advice on how individuals and companies can better protect themselves. This paper is an attempt to show practitioners how defensibility may play a role in their designs and how they may be drawn into the adjudicatory process around disputes over their work or the work of others.

Great Lakes Regional Conference 10 (GLRC 10)

Mackinac Island, Michigan
September 18-20, 2016

Call for Presentations, Sponsors, and Exhibitors: www.incosegreatlakes.org

The conference was well attended and there were several NSC members, Dave Walden, Venkat Parameshwaran, and Angela Robinson, who provided presentations and tutorials. **The NSC is the GLRC11 Host and Dave Walden is the Chair!** Please contact Dave at, Dave@sysnovation.com. We look forward to your support, no matter how small, for what promises to be a “**Superior Conference**”.

Excerpt from the Q3 INCOSE Members Newsletter
“President’s Corner”, Alan D. Harding, alan.harding@incose.org

In my third INCOSE newsletter I want to reflect on a truly world class International Symposium (IS) 2016, at the Edinburgh International Conference Centre. I extend a huge thank-you to the Events Committee, Technical Operations, KMD Partners Events Management, and all the other volunteers and staff, who together delivered – an extraordinarily professional and successful symposium.

Registered attendance for the event was 849 people from 31 countries, the 3rd highest ever, and a new record for a symposium held outside of the USA. During the event we had five wonderful keynotes, a plethora of papers, panels, workshops, and other formats – including invited content, and because it was Edinburgh, the unique “fringe” events. I won’t bombard you with statistics, but we served 3562 lunches, entertained 1748 people in receptions, and 500 of us enjoyed a fantastic Scottish-themed banquet at Prestonfield House as part of the IS 2016.

While on the Scottish theme, I have to mention the kilt that I proudly wore for much of the event. From my family history research I established that one of my 20th Great Grandfathers was John “The Red” Comyn, Lord of Badenoch and Lord of Lochaber (born 1269, died 1306), a Scottish nobleman and one of the co-Guardians of Scotland. He was very powerful in Scotland until he was murdered by the future King Robert I of Scotland, more well-known as Robert the Bruce. Having found this out, I had the kilt made, and I hope by wearing it I added a little to the local colour of the event.



Figure 1. President Alan Harding, proud of his Scottish heritage

The symposium theme was “Achieving excellence through Systems Engineering.” Our keynotes informed and inspired us on topics as diverse as: Design thinking; the energy “trilemma;” systems thinking for cities; improving conceptual design; and systems thinking for personal growth and transformation. If you want to listen to these again, or you were not able to be in Edinburgh with us, all our keynotes plus my opening remarks and Jon Holt’s rendition of “Think Engineer” are available on the INCOSE YouTube channel: [https://www.youtube.com/c/ INCOSEYouTube](https://www.youtube.com/c/INCOSEYouTube).

In my introductory remarks to INCOSE leadership and the symposium as a whole, I talked about INCOSE’s role as the world’s authority on Systems Engineering, and our purpose to benefit humanity and the planet through continuing to evolve and promote systems engineering. Our Systems Engineering Vision 2025 provides us with global context, the current and predicted future state of systems engineering, and the grand challenges for systems engineering 2025. This Vision shapes much of the INCOSE Board of Directors’ thinking and I encouraged everyone to make use of it in their thinking and discussions during the event. As you read this newsletter I renew my encouragement to all of you to make yourself familiar with the SE Vision, and to apply it in your INCOSE activities, and in your organizations.

***INCOSE’s role [is] as the world’s authority on Systems Engineering...
to benefit humanity and the planet...***

The other key I discussed in my remarks was INCOSE’s status as a global organization, and the challenges we face to be effective as one. We are the world’s authority on Systems Engineering, and we do have a footprint across the globe. However operating globally is a challenge, and we must ensure that all the INCOSE “working parts” fit together properly, underpinned by: quality information, clear procedures, defined roles and responsibilities, and practical methods to cope with diversity and differences across INCOSE. I will be working with INCOSE leadership and our professional support teams to ensure we have effective global mechanisms across the organization. The one thing I asked all attendees at the symposium, and ask all readers of this newsletter to do is to “Think Global, Act Local” – to take into account our global context and ambitions in everything you do.

Learn more about what we can do. Click [here](#) for the Newsletter

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Please visit us at [North Star Chapter](#) to find out what is going on in the Twin Cities and surrounding area as the NSC Presents the Year of Systems Engineering Impact on the Twin Cities.