

## Nordic Systems Engineering Tour

Empowering the North – From Hamburg via Copenhagen to Stockholm, Helsinki, and Warsaw



### Warsaw, May 27<sup>th</sup>, 2016

09:00 – 09:15 Welcome by INCOSE Poland!

09:15 – 10:00 Bohdan Oppenheim [Practical Aspects of Lean Management of Complex Programs](#)  
The presentation is intended as a highly practical talk about Lean in engineering programs. It begins with a brief refresher of the classical Lean approach, including the meaning of value and waste in engineering programs, the Lean Principles, and some practical “low hanging fruit” practices for elimination of major wastes. Next, the presentation cites several powerful remedies to eliminate waste based on the SpaceX and other leading programs. Three appendices (covered to the degree time permitting) summarize the development process of the Lean Enablers, list all enablers with selected ones marked for discussion, and briefly summarize the super-efficient Lean Project Development Flow (LPDF) method for executing well-understood projects.

10:00 – 10:30 Coffee Break and Networking

10:30 – 11:15 Mike Nicolai [Can systems engineering help in the sustainability challenge for engineering designs?](#)  
In the presentation two examples of design processes will be shown, where physical behavior simulations are essential and where the system complexity is already an issue. The first example is a kinetic energy recovery system (KERS) which will be placed in an existing design. In addition to the needed trade-off studies, the overall configuration and the model management including simulation models and data are important and will be shown. The second example is a design process of an automated guided vehicle (AGV): here the design process has dependency loops, which can be detected, e.g. by the usage of design structure matrix (DSM), but cannot be easily resolved.

11:15 – 11:45 Coffee Break and Networking

11:45 – 12:30 Paul Davies [Building the Business Case for Systems Engineering](#)  
The presentation content is based on that delivered by Paul at the INCOSE UK ASEC2013 conference, which won the Best Presentation award. The underlying theory is based on two extensive and academically refereed studies, plus several extra corroborative later studies. The two principal studies are:

- “Systems Engineering Effectiveness”, NDIA /SEI / Carnegie Mellon University, 2012-13 – lead editor Joe Elm;
- “Systems Engineering Return on Investment” (SEROI), University of South Australia PhD thesis 2013, Eric Honour [INCOSE Fellow and Past President].

12:30 – 14:00 Lunch and Networking

14:00 – 14:45 Tim Weilkiens [Model-Based System Architectures](#)  
The talk covers the role of the system architect in a model-based environment and gives an overview about different architecture tasks. Additionally, we present some concrete tools for the system architect. Starting with a brief motivation and definition of model-based system architectures we will present the following topics:

- Architecture kinds and their relationships: Base Architecture, Functional Architecture, Logical Architecture, Product Architecture, Physical Architecture;
- Product Line Engineering – How to manage variants;
- Architecture assessments;
- Soft skills: It’s all about communication – the soft side of a system architect.

14:45 – 15:15 Coffee Break and Networking

15:15 – 16:00 Peter Gorm Larsen [Well-founded Engineering of CyberPhysical Systems and Systems of Systems](#)  
This presentation illustrates how well-founded engineering of Cyber-Physical Systems (CPSs) and Systems of Systems (SoS) can be supported from a modelling perspective. The starting point of this presentation is the DESTECs, COMPASS and INTO-CPS European Research projects.

16:00 – 16:30 Famous Last Words

In Warsaw the NoSE conference is arranged by INCOSE Poland and Warsaw University of Technology. The event is held at The Center of Innovation and Technology Transfer Management (Centrum Zarządzania Innowacjami i Transferem Technologii), 4 Rektorska St., 00-614 Warsaw.

The registration fee is:

- 150 PLN for members of INCOSE or Faculty of Warsaw University of Technology
- 50 PLN for students (also full-time PhD students)
- 200 PLN for others

The fee includes also lunch and refreshments.

**For registration send e-mail to Aleksander Buczacki ([aleksander.buczacki@incose.org](mailto:aleksander.buczacki@incose.org)) and indicate the registration category that applies. Include your invoicing address in the e-mail.**

**May 20<sup>th</sup> is the final date for registration.**