INCOSE C-NOh March Meeting

Tuesday, March 21, 2017 from 5:30 PM to 8:30 PM (EDT)

Moosehead Hoof & Ladder
7989 Columbia Road
Cleveland, OH 44138

The Evolution of MBSE from its Contribution to Aerospace through Today's SoS Design and Process Optimization and Predictive Analytics

Speaker: Dr. Horst Salzwedel, CTO of ML Design Technologies, Inc.

Abstract: Model-Based Systems Engineering is the only way to solve complex, dynamically-coupled systems of systems problems at minimum risk and cost. This talk will assess its history, recent applications, and projected impacts. Dr. Salzwedel will discuss the application of modeling principles and their contributions to aviation, from Lilienthal to the Wright Brothers to Supersonic Aircraft to the A380 and NAVAIR P8-A Poseidon. The benefits of validated executable specifications and virtual prototypes to verification and validation will be presented. Dr. Salzwedel will also describe the growing role of MBSE to predictive and prescriptive analytics, lifecycle management, and operations.

Dr. Salzwedel will cover several large scale, complex, "real world" case studies from his career, including the following:

- SoS Aircraft level unified architectural optimization – Airbus A380 vs. A350
- Service level optimization of aerospace systems (Airbus/Lufthansa/Delta Air Lines/American Airlines)
- Analysis and optimization of multi-satellite systems
- Autonomous Underwater vehicle
- A400M : Digital avionics stability control system for military automated cargo drop
- Boeing's 777 – first commercial aircraft to used augmented digital networked cabin and flight deck
- Robert Bosch Automotive– optimization of design processes for electronic control systems
- Process optimization of a multidepartment University Hospital

About the Presenter: Dr. Horst Salzwedel has published over 120 papers on systems engineering over his 30+ year career. His experience includes research and development of automotive and aerospace technologies and systems and minimum risk development of complex systems. At SAIC, his MBSE research and development was used in navigation, control, and system identification for many DoD programs and contributed to the development of computer aided engineering tools. His work has directly influenced NASA, WPAFB, Airbus, Boeing, Honeywell, Volkswagen/Audi, GM, Siemens, Robert Bosch, Motorola, AT&T, Loral, Lockheed Martin, General Dynamics, etc. as well as over 100 universities worldwide. At Cadence Design Systems he developed methods and software for rapid development of networked Systems of Systems (SoS) with complex digital technologies (from chips to global systems). He holds a Ph.D. in Aeronautical and Astronautical Sciences from Stanford University, a M.S. in Aero- and Astronautics from Technical University Munich, and a B.S. in Aircraft and Motor Vehicle Engineering from the School of Engineering in Hamburg.

Food and drink will be available for purchase at the venue.

We hope you can make it!
INCOSE Cleveland-Northeast Ohio Chapter