



**Please join us on the next INCOSE Webinar**

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**When**

Wednesday 16 June 2021 from 11:00am-12:00pm EDT  
(3:00pm-4:00pm UTC)

**Topic**

Challenges of Needs and Requirements Definition and  
Management for Complex Systems.

***Speaker***

Lou Wheatcraft



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## Abstract

Defining and managing needs and requirements across the system lifecycle is increasingly challenging when developing today's complex, software-centric systems - especially for systems that are being contracted out to suppliers. These challenges are a result of increases in:

- Complexity
- The role software has in the system architecture (software centric systems are the norm)
- Dependencies and number of interactions between parts of the system
- The interactions between a system and the macro system it is a part
- The number of threats across interface boundaries and vulnerabilities to those threats
- Dependencies between project management and systems engineering
- Dependencies between systems engineering lifecycle process activities and artifacts
- Oversight
- Competition
- The pressure (and need) to reduce development time and time to market
- Risks (program/project, development, manufacturing, IV&V, and operational)
- The number of projects that are over budget and experiencing schedule slippage

During this session, Lou Wheatcraft will address these challenges and propose a methodology that will enable organizations to move from the outdated 20th century practice of systems engineering to a practice of systems engineering better suited to the development of the increasingly complex, software-centric systems typical of the 21st century. Lou will also introduce the audience to three new products being developed by the Requirements Working Group, that address the concepts proposed in this presentation.

## Biography

**Lou Wheatcraft** is a senior consultant and managing member of Wheatland Consulting, LLC. Lou is an internationally recognized expert in systems engineering with a focus on needs, requirements definition and management and verification and validation. Lou provides consulting and mentoring services to clients on the importance of well-formed needs and requirements helping them implement needs, requirements definition and management processes, reviewing and providing comments on their needs, requirements, helping clients write well-formed requirements, and plan for and execute verification and validation activities.

Lou has over 50 years' experience in systems engineering, including 22 years in the United States Air Force. Lou has taught over 200 requirement seminars over the last 21 years. Lou supports clients from government and industries involved in developing and managing systems and products including aerospace, defense, medical devices, consumer goods, transportation, and energy.

Lou has spoken at Project Management Institute (PMI) chapter meetings and INCOSE conferences and chapter meetings. Lou has published and presented many papers concerning needs and requirements development and management for NASA's PM Challenge, INCOSE, INCOSE INSIGHT Magazine, and Crosstalk

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Magazine. Lou is a member of INCOSE, former Chair and current Co-Chair of the INCOSE Requirements Working Group.

Lou has a BS degree in Electrical Engineering from Oklahoma State University; an MA degree in Computer Information Systems from the University of Houston – Clear Lake; an MS degree in Environmental Management from the University of Houston – Clear Lake; and has completed the course work for an MS degree in Studies of the Future from the University of Houston – Clear Lake.

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<https://www.incose.org/systems-engineering-certification/certification-faqs>

Regards,  
Andy Pickard  
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