



The Value of INCOSE Membership

September 12, 2023

Types of INCOSE Membership

<https://www.incose.org/about-incose/incose-membership/membership-types>

Individual (US\$160 annually)

Senior (US\$90 annually) - 65 years of age at the time they join or renew their membership

Student (US\$50 annually) - Enrolled in a university or college as a student seeking a degree

Corporate Advisory Board (CAB) Associate (free) - Employees or students of a CAB Organization who are not INCOSE individual members



INCOSE Certification Update

Courtney Wright, CSEP, Certification Program Manager at INCOSE

Courtney Wright, CSEP

- Courtney Wright leads the strategic and tactical operations of the SE Certification Program. She handles INCOSE Certification program's external interfaces and marketing, as well as ensuring internal policies are being followed. Courtney works with individuals and large organizations to support their professional development activities.
- Courtney has also performed modeling and simulation for the USAF; specialty engineering for the National Reconnaissance Office (NRO); requirements for the National Geospatial-Intelligence Agency (NGA); architecture and design for the National Aeronautics and Space Administration (NASA); and SE training development for the FAA.
- Courtney holds a BS Degree in Mechanical Engineering from the University of Virginia and an MS in Operations from Georgia Institute of Technology.



INCOSE Systems Engineering Professional (SEP) Certification Program



International Council on Systems Engineering

A better world through a systems approach

Program Summary

INCOSE SEP Architecture

For wherever you are in your career

Multi-Level Base Credentials

The base ASEP, CSEP, and ESEP credentials cover the breadth of systems engineering at increasing levels of leadership, accomplishments, and experience.



If you have just started (or plan to start) practicing systems engineering or have recently graduated and are interested in system engineering



If you are a practicing Systems Engineer with more than five years of systems engineering professional work experience



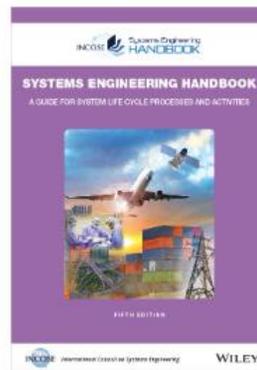
If you are a systems engineering leader with recognized systems accomplishments and have many years of systems engineering professional work experience

Questions I'm getting a lot this year

ASEPs and CSEPS are curious about the impact of the INCOSE Systems Engineering Handbook Fifth Edition (SEH5E).

When will we start testing on SEH5E?

- 1 August 2023 – it's already started!



When will we stop testing on SEH4E?

- No earlier than 1 August 2024
- We will allow time for SEH5E to be translated into the same languages that already have an SEH4E.

Where can I get SEH5E?

- INCOSE members can download the PDF for free from the INCOSE Store.
- You can buy a printed copy or an ebook from Wiley.com or Amazon.

The INCOSE website looks different.

- Pages are more customized to a specific audience, like ASEP applicants or reference providers.
- You can now search the Certification Directory within your member profile.
- You must log in to register for an exam. If you're not a member, you can create a free account for this purpose.

Other Changes in 2023



Minimum References Requirements

- References must confirm at least five years of candidate's SE experience
- References must confirm at least 12 months deep in at least 3 SE experience areas
- References must be qualified to confirm SE experience
- No longer required to have at least 3 references



Technical Leadership Interview

- For the rest of 2023, we are allowing ESEPs to receive and respond to their technical leadership questions in written format.

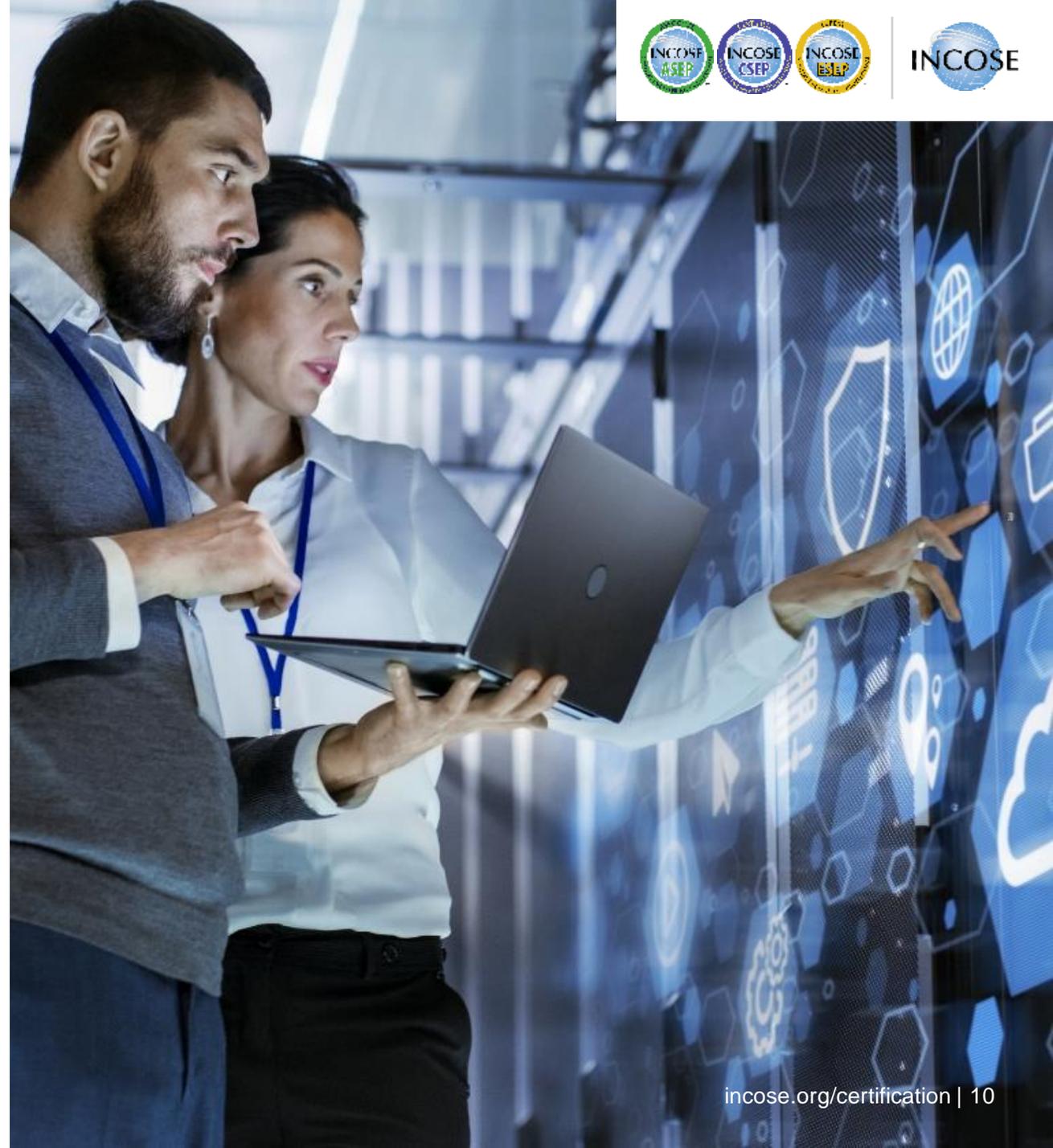


Certification Agreements

- INCOSE and the following organizations have signed agreements for existing certifications to meet some of the SEP requirements or offering a discount on application fee



- Discontinuing corporate agreements
- Increasing Academic Equivalencies



Universities have Certification Agreements

- INCOSE and the following Universities have signed agreements to recognize college courses

ACADEMIC EQUIVALENCY





Any Questions?

Certification Office
certification@incose.net

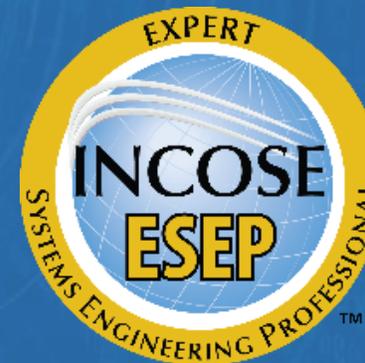
For more information visit
www.incose.org/certification



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Learn more at [INCOSE.org/certification](https://www.incose.org/certification)



Highlights from the 2023 INCOSE International Symposium (INCOSE-IS)

Marilee Wheaton, The Aerospace Corporation



33rd Annual **INCOSE**
international symposium

hybrid event

Honolulu, HI, USA
July 15 - 20, 2023

www.incose.org/symp2023
#INCOSEIS

Top 20 Board of Directors (BOD) Priorities for 2023

- Evolve FUSE initiative to enable SE Vision 2035
- Delivery of SE Handbook Version 5
- Enhancements to Professional Development Portal (PDP) FOC
- INCOSE online SE Lab
- Global expansion of Academic Equivalency for Certification
- Strategic marketing campaigns and branding
- Infusion of storytelling
- New Sponsorship opportunities with INCOSE

- CAB Needs and Value-Added Integrated Campaign
- Bridging the gap between practitioners & academics



- Chapter realignment process
- Student divisions re-energised
- Foster new and emerging chapters
- Integrated EMEA WG Portfolio

- New membership engagement focus
- Mentoring Program
- DEI Advisory Committee
- INCOSE Foundation's Global Member Project

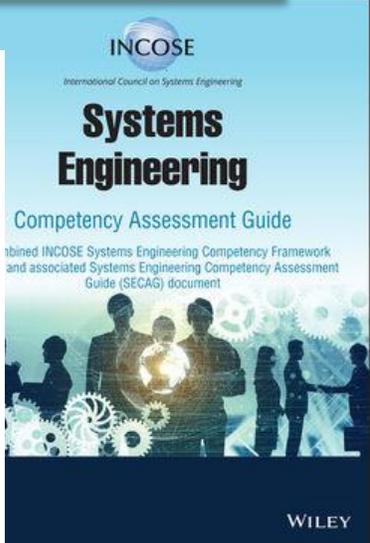
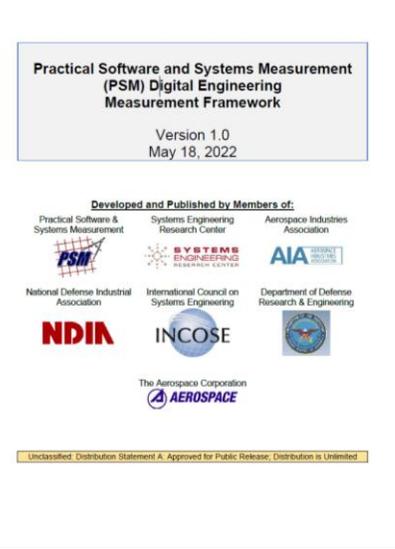
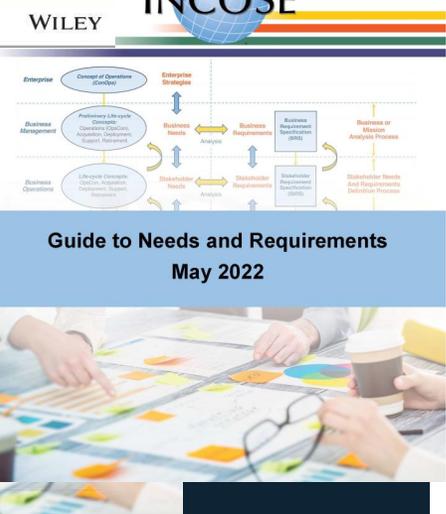
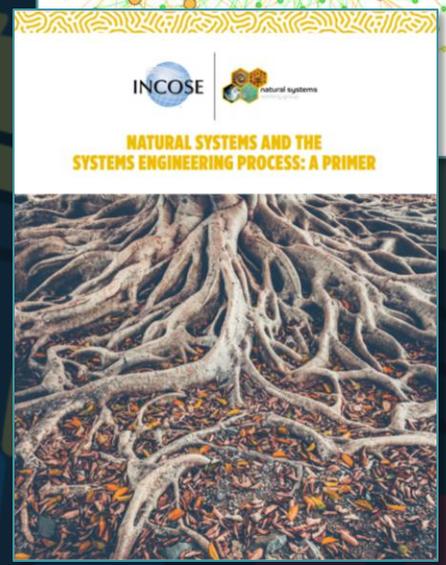
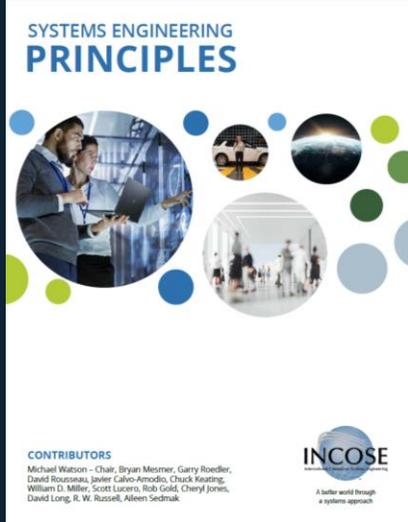
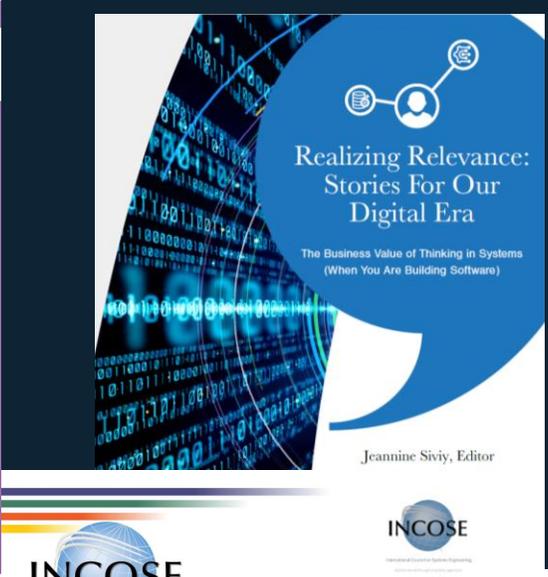
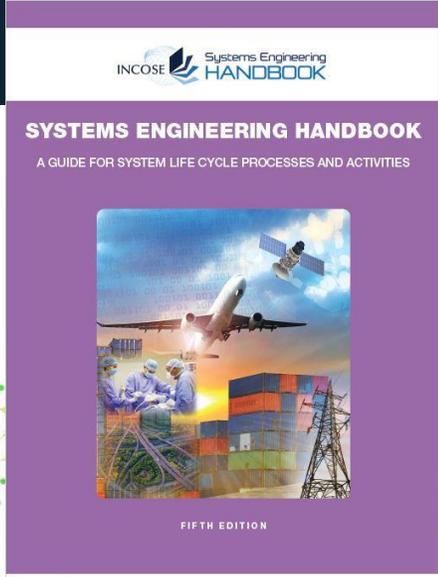
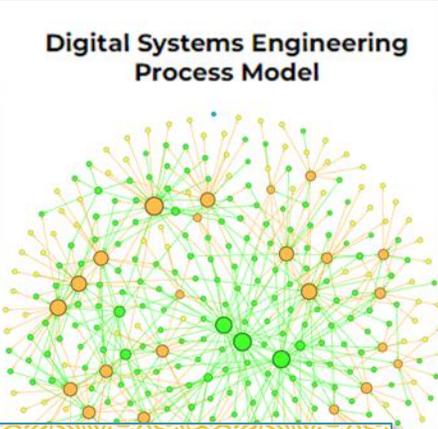
- New collaborations with existing alliances
- Re-invigorate industry & domain outreach
- New Executive Director
- Execute a strategic planning process
- WG data integration & websites revamped
- Community Transformation Completion

Technical Products at a Glance

SYSTEM ENGINEERING HEURISTICS

Viewable_Heuristics (View Only) | smartshoot

Seq #	Reworded Heuristic	Elaboration Short	Elaboration More Info	Rationale
1	Developing the system design in stages can reduce risk if the critical system behaviors are designed first.	Design critical system behaviors first.	Developing critical system behaviors first increases the likelihood that critical system behaviors will work well in the design.	Implied action: Verify and validate c...
2	Seek external subject matter experts when in-house knowledge is lacking.	Expertise can be critical to project success.	There can be a huge difference in effectiveness of a system development effort if appropriate expertise is applied. When in-house knowledge is limited, using outside experts can make the difference between success and failure, or at least between an effective project and one which is much less effective. Use case scenarios...	Errors made in design as a result of executive status stand in the way of...



IS 2023 Representation

Registrations

In-Person 759

Virtual 271

(Guests 157)

Total 1030

#1
USA

#5
UK

#3
Germany

#6
France

#4
Japan

#2
Australia

Submissions – Presentations (115/49/332R)

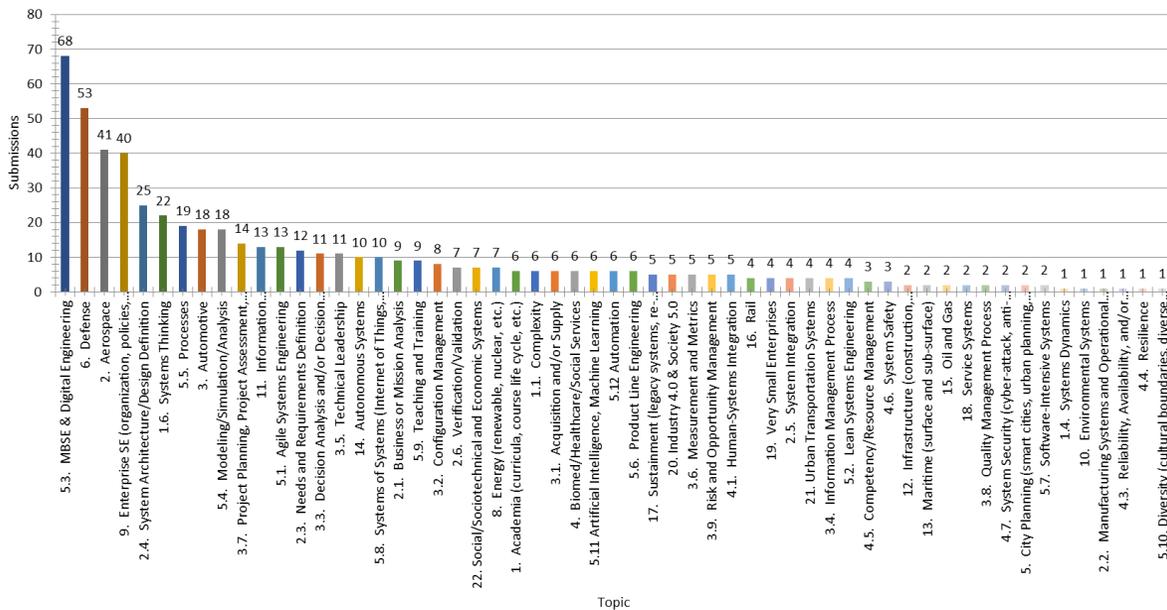
MBSE 68

Sys-Dynamics 1

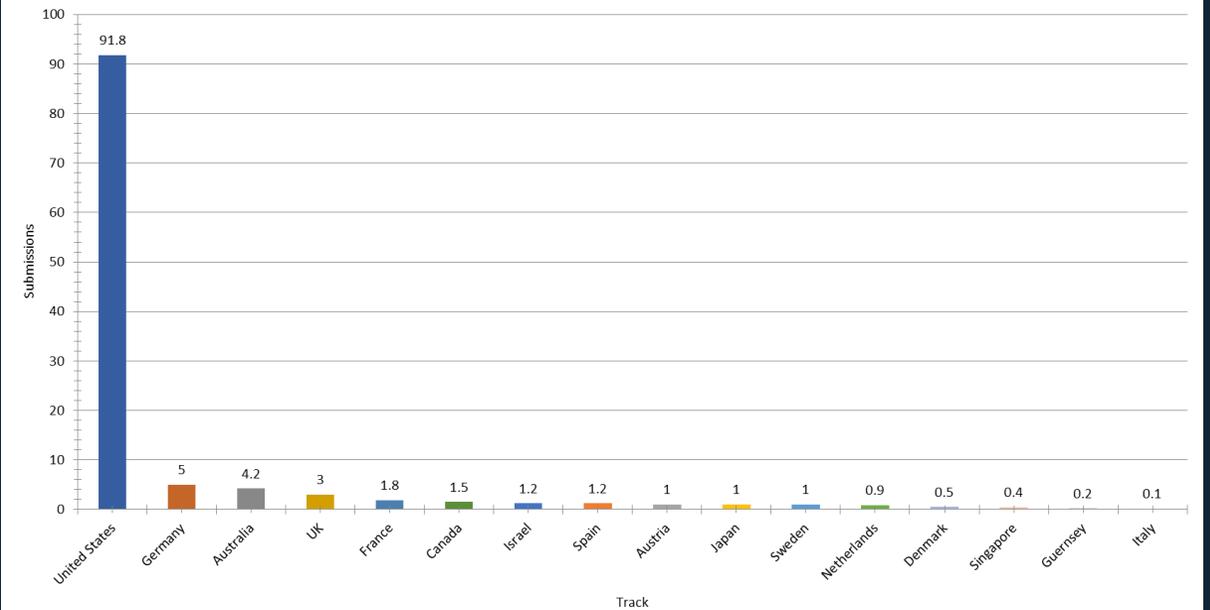
Germany #2

Australia #3

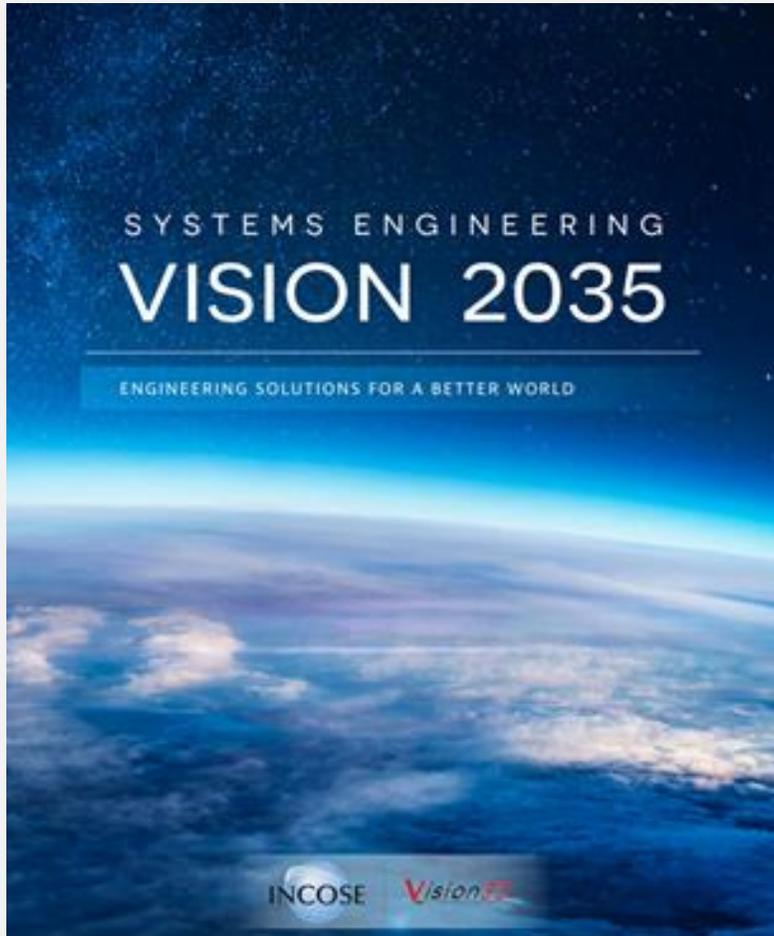
Number of Submissions by Topic



Number of Submissions by Country



Systems Engineering Vision 2035



This Systems Engineering Vision was sponsored by INCOSE and produced by a team of leaders from the systems community, with inputs from across industry, academia, and government. The Systems Engineering Vision 2035 addresses:

- The **Global Context for Systems Engineering**
- The **Current State of Systems Engineering**
- The **Future State of Systems Engineering**
- **Realizing the Vision**

We encourage you to work with INCOSE to help realize this vision.

The complete **Systems Engineering Vision 2035** is available as a website and PDF

LEARN MORE: incose.org/seivision

FuSE Program Vision / Mission Statement



Future of Systems Engineering Program
FuSE, our vision is:
www.incose.org/fuse

**Inspire the global
community to realize
the Vision of SE**



**Engage and inspire the
systems engineering community
by Realizing the SE Vision 2035
to sustain the future of
systems engineering.**



FuSE refines and evolves the SE Vision 2035 across competencies, research, tools & environment, practices, and applications.



FuSE identifies critical gaps towards the vision realization and initiates & supports relevant actions



FuSE fosters involvement and collaboration within and outside of INCOSE.



FuSE educates, shares success, and expands.



INCOSE International Symposium

2-6 July 2024
Dublin, Ireland





Useful Books and References Free to INCOSE Members

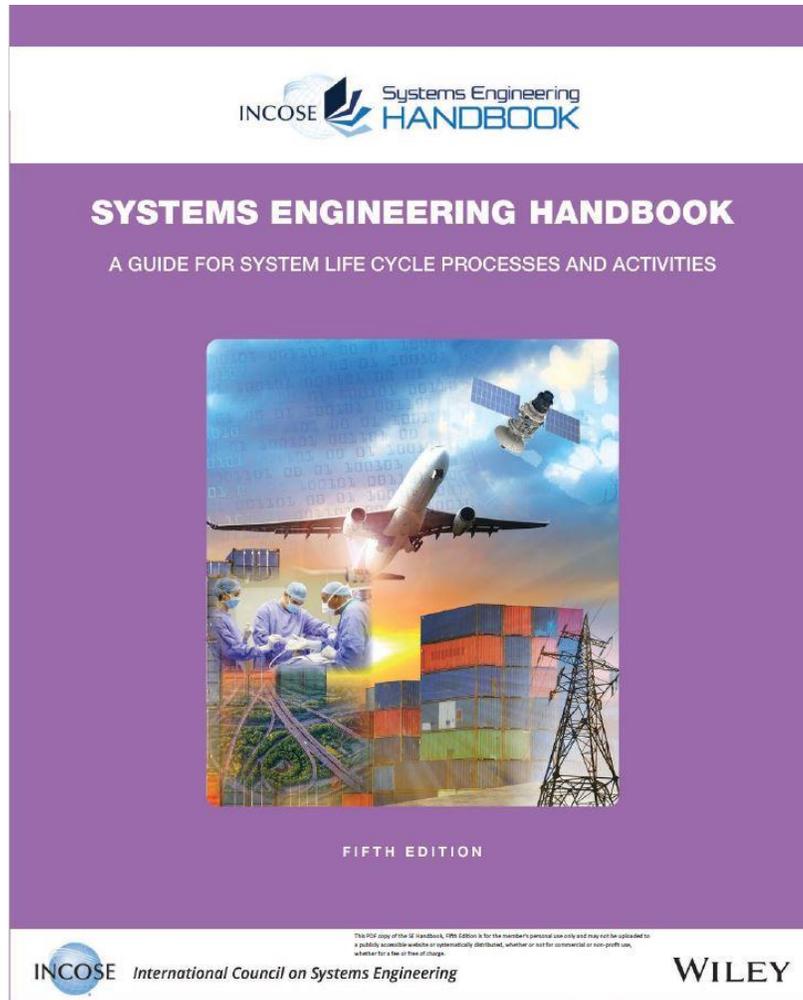
Fred Lawler, The Aerospace Corporation
Multi-Society STEM & YP Outreach

Free INCOSE Books and References

- The INCOSE Store provides 35+ useful books and references free to INCOSE members and CAB Associate members
- In addition, 4 hardcopy books are available at reduced prices
 - Integrating Program Management and Systems Engineering
 - Systems Engineering Measurement Primer
 - Systems Engineering Practices for Small and Medium Enterprises
 - Home improvements! Systems Engineering in a familiar setting

SE Handbook

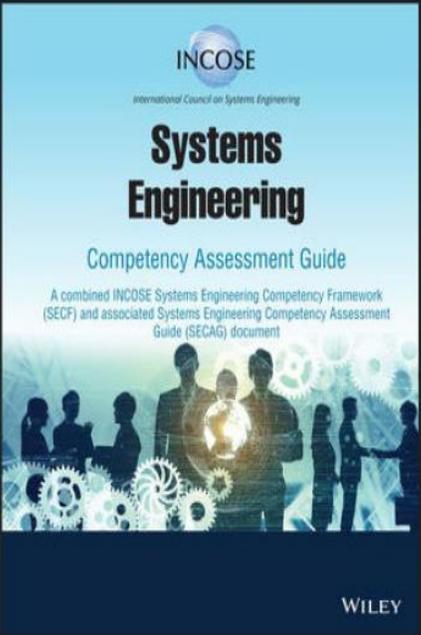
- Just updated in June 2023 (Version 5)
- 344 Pages (Paperback)
- New Basis for ASEP/CSEP/ESEP Certs
- Great overview of the SE state-of practice
- Table of Contents
 1. SE Introduction
 2. System Life Cycle Concepts, Models, and Processes
 3. Life Cycle Analyses and Models
 4. Tailoring and Application Considerations
 5. Systems Engineering in Practice
 6. Case StudiesAppendices



SE Competency Framework (SECF)

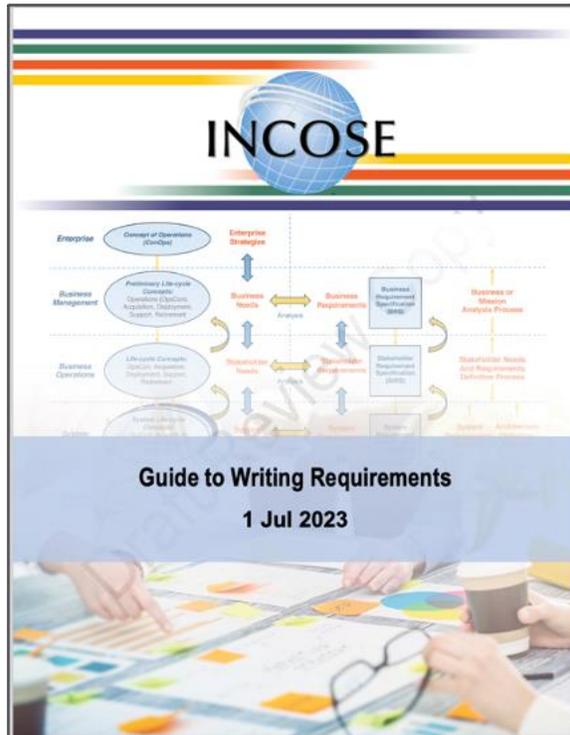
- Updated in 2023
- 688 pages (Hardback)
- Details 37 competencies across 5 areas
 1. Core
 2. Professional
 3. Technical
 4. Syst Engr Management
 5. Integration
- Details 37 SECF Tables
 - Across same 5 areas

Systems Engineering Competency Assessment Guide



*Individual Member Discount code for Wiley Store Purchase
Code provides INCOSE individual member a 25% discount for
purchase of hardcopy only. Does not apply to eBook.*

Guide to Writing Requirements



- Updated in July 2023
- 126 pages (e-book)
- Defines 8 types of requirements
- Describes 15 requirement characteristics
 - Individual and sets
- Identifies 42 requirement-related rules
- Includes 21 figures
- Features 6 appendices

Requirements



Enterprise Concept of Operations (ConOps) Enterprise Strategies

Business Management Preliminary Life-cycle Concepts: Operations (OpCon), Acquisition, Deployment, Support, Retirement Business Needs Business Requirements Business Requirement Specification (BRS) Business or Mission Analysis Process

Business Operations Life-cycle Concepts: OpCon, Acquisition, Deployment, Support, Retirement Stakeholder Needs Stakeholder Requirements Stakeholder Requirement Specification (SRS) Stakeholder Needs And Requirements Definition Process

Guide to Needs and Requirements
May 2022



Enterprise Concept of Operations (ConOps) Enterprise Strategies

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Guide to Writing Requirements
1 Jul 2023



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Needs and Requirements Manual
Needs, Requirements, Verification, Validation Across the Lifecycle
May 2022



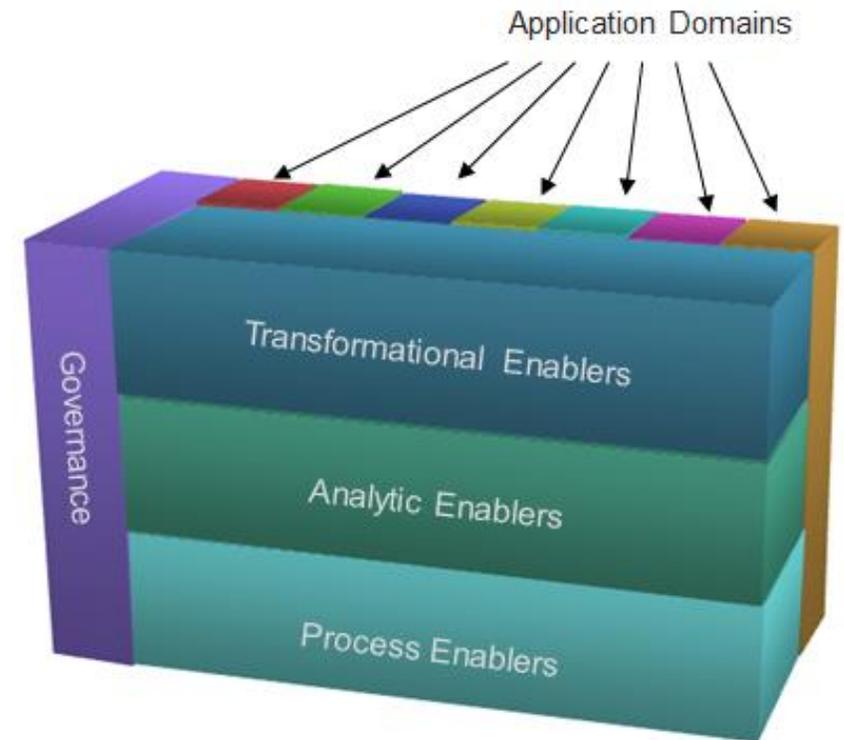


INCOSE Working Groups: How to Interact with the World's Experts for Free

Rick Hefner, Caltech CTME
INCOSE-LA Programs Chair

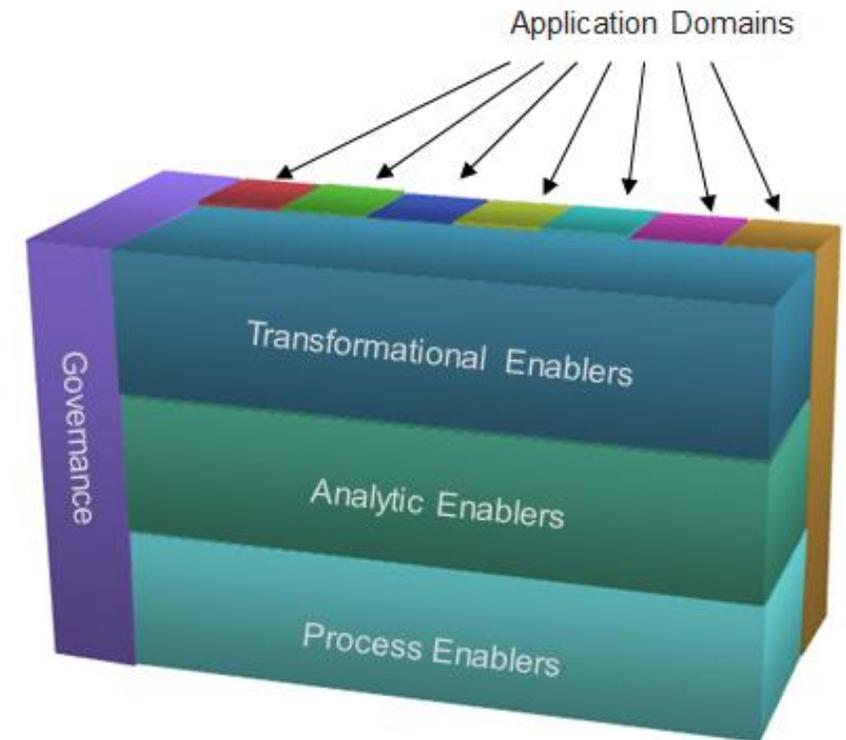
INCOSE Working Groups

- Create products to advance the state, art and practice of systems engineering
 - Some products/contacts posted to incose.org;
some in CONNECT for WG members only
- Develop and review proposed international standards
- Any INCOSE member may participate – join on-line under your profile
- Significant work is done at the INCOSE International Workshop (IW), held in January in Torrance, CA



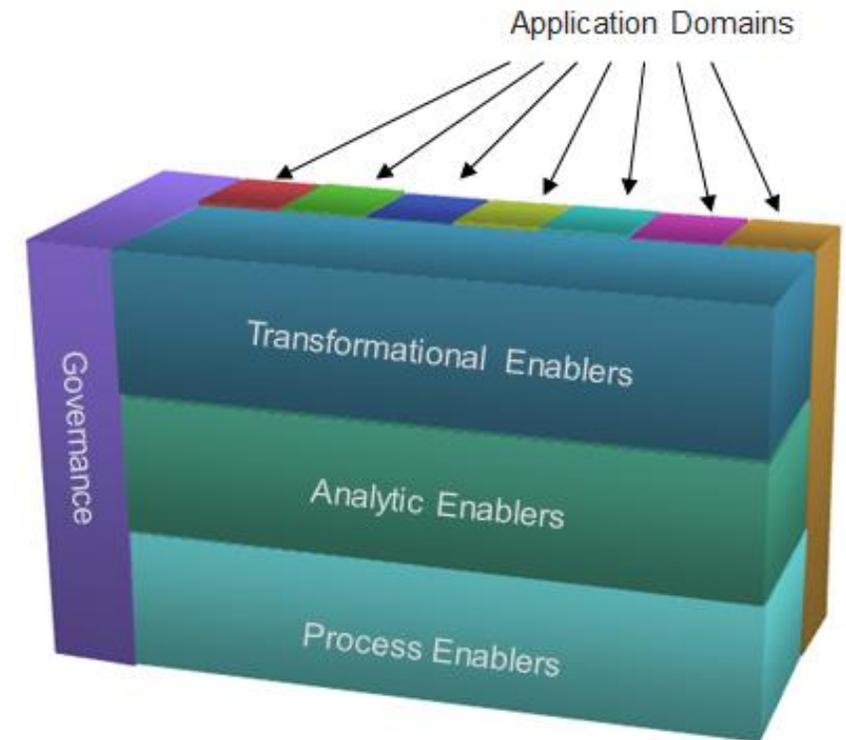
Transformational Enablers

- [Agile Systems & SE](#)
- INCOSE-NAFEMS Collaboration
- [Lean Systems Engineering](#)
- [MBSE Initiative](#)
- [MBSE Patterns](#)
- Model Based Conceptual Design
- [Object-Oriented SE Method](#)
- Ontology
- [Very Small Entities \(VSE\)](#)
- System and Software Integration
- [Systems Science](#)
- [Tool Integration and Model Lifecycle Management](#)



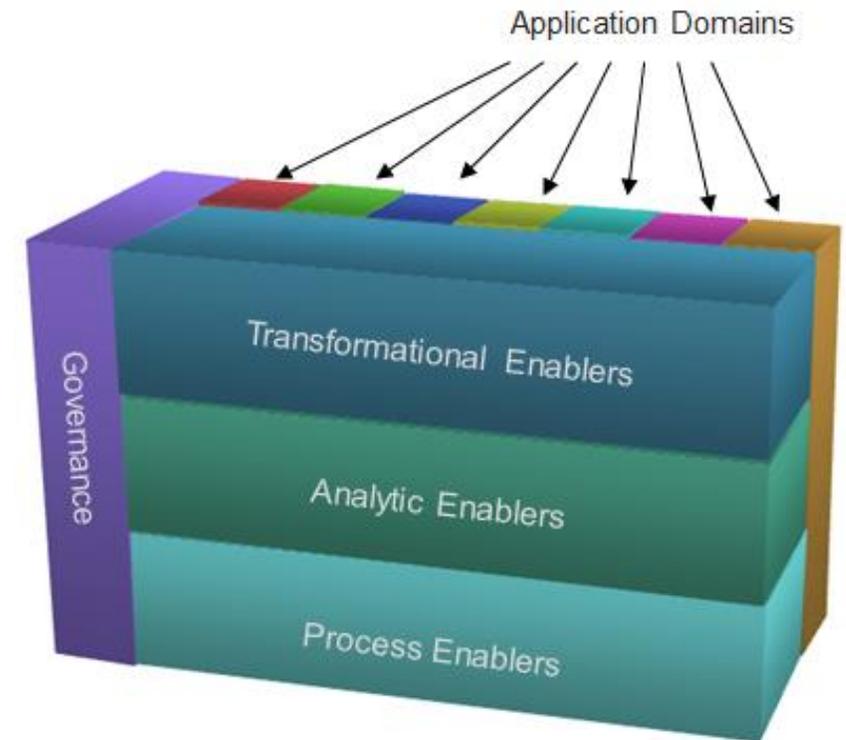
Analytic Enablers

- Affordability
- Autonomous Systems Test and Evaluation
- Competency
- [Complex Systems](#)
- Cost Engineering
- [Decision Analysis](#)
- [Human Systems Integration](#)
- [Natural Systems](#)
- [Product Lines](#)
- [Resilient Systems](#)
- [System of Systems](#)
- [Systems Security Engineering](#)
- [Training](#)



Process Enablers

- [Architecture](#)
- Enterprise Systems
- Knowledge Management
- Life Cycle Management
- [Measurement](#)
- [Requirements](#)
- [Risk Management](#)
- [PM-SE Integration](#)



Application Domains

- Anti-Terrorism International
- [Automotive](#)
- [Critical Infrastructure](#)
- Defense Systems
- Global Earth Observation System of Systems (GEOSS)
- [Healthcare](#)
- [Infrastructure](#)
- [Oil and Gas](#)
- [Power & Energy Systems](#)
- [Space Systems](#)
- [Transportation](#)

