



2019

Annual **INCOSE**
international workshop

Torrance, CA, USA

January 26 - 29, 2019

Systems of Systems Engineering

www.incose.org/iw2019

Systems of Systems Engineering



2019
Annual **INCOSE**
international workshop
Torrance, CA, USA
January 26 - 29, 2019

MEMBERS

12 Core, 30 Regular

CO-CHAIRS

Judith Dahmann (jdahmann@mitre.org)

Alan Harding (alan.d.harding@baesystems.com)

INCOSE CONNECT ADDRESS



<https://connect.incose.org/WorkingGroups/SystemofSystems/Pages/Home.aspx>

INCOSE WEB PAGE



<https://www.incose.org/incose-member-resources/working-groups/analytic/system-of-systems>

Charter Summary



2019
Annual **INCOSE**
international workshop
Torrance, CA, USA
January 26 - 29, 2019

WG PURPOSE/MISSION

The purpose of the working group is to advance and promote the application of Systems Engineering to Systems of Systems (SoS), often referred to as SoS Engineering (SoSE).

BKCASE describes SoS Engineering as *“an opportunity for the systems engineering community to define the complex systems of the 21st Century. While systems engineering is a fairly established field, SoSE represents a challenge for the present systems engineers at the global level. In general, SoSE requires considerations beyond those usually associated with engineering to include socio-technical and sometimes socio-economic phenomena.”*

SoS and SoSE are topics that interest a significant number of INCOSE members globally, both individuals and organizations. Therefore we believe that a WG forum to share understanding of SoS and SoSE issues, good practice and background, and contribute to maturing BKCASE will provide a service to the wider INCOSE community.

WG GOAL(S)

The goal of the working group is to expand and promote the body of knowledge of SoS and SoSE its benefits within the Systems Engineering community.

WG SCOPE

This WG addresses the application of Systems Engineering to all types of Systems of Systems (SOS) in all domains. We see diversity as particularly important in this knowledge area, as do the WG members.

Activities will generally cover the following:

- Understand and share what we mean by SoS in our various contexts
- Develop guidance and advice
- Inform and up-skill practitioners

Charter Summary



2019
Annual **INCOSE**
international workshop
Torrance, CA, USA
January 26 - 29, 2019

- Exert influence on BKCASE, Standards, SE Vision 2025, FUSE, etc.
 - Develop the practice of SE for SoS.
 - Work in partnership with other groups addressing aspects of SoS (e.g. INCOSE WGs, IEEE, NDIA).
 - Understanding and applying insights from relevant research

IW Outcomes



2019
Annual **INCOSE**
international workshop
Torrance, CA, USA
January 26 - 29, 2019

IW Outcomes

Held working sessions and discussion on

- SEBOK Update
- SoS WG Value to INCOSE
- Collaboration - Cooperation with Automotive Working Group
- Standards
- Case Studies
- SE Handbook Update
- Follow-up on SoS Primer
- SoS Competencies
- Integrated Assurance
- SoS Ontologies

Planned Work past IW



2019
Annual **INCOSE**
international workshop
Torrance, CA, USA
January 26 - 29, 2019

PLANNED ACTIVITIES

Plans for followup sessions/discussions at IS 2019 on

- SEBOK Update - Proposed new sections (jdahmann@mitre.org)
- Collaboration - Continued cooperation with Automotive, Safety, Security and Case Studies WGs, Engage Space WG
- Standards -Update on ISO Standards and Mock- up of SoSE Standards Product (mike.r.yokell@lmco.com)
- Case Studies - Update on call for recommendations for existing SoS Case Studies (wilsondrbeth@aol.com)
- SoS WG Value to INCOSE - Review of WG inputs to draft (alandharding@gmail.com)
- Follow-up on SoS Primer - Conduct survey for feedback on Primer and need for added SoS material (jdahmann@mitre.org)
- SoS Competencies - Review framework wrt SoSE roles, Pain Points and ISO 21840 (alandharding@gmail.com)
- SoS Ontologies - Continue development (robert.nilsson.2@volvocars.com)
- Integrated Assurance (IA) - Share references and include IA research in IS SoSE Research Roundtable (duncan@17media.co.uk)
- Conduct SoSE Research Roundtable at IS 2019 (jdahmann@mitre.org)

PLANNED WORK PRODUCTS

Introduction to ISO SoS Standards