



Identifying Top Challenges for International Research on Requirements Engineering for Systems of Systems Engineering

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Panel Agenda

- Poll the audience: where are they from, industry or academia, their job function, what level of experience do they have with SoS
- Introduce topic (SoS, purpose of panel, and RQs)
- Introduce panel.
- Each panel member to give a 5-10 min opening position statement about:
 - What they think SoS(E), their experiences in SoS(E) and
 - Why is SoS(E) important for RE community to start focussing on.

Panel Agenda

Then each panellist provide answers and justification to the 2 questions:

RQ1: What are your top 3 Requirements Engineering challenges in SoSE in which the requirements engineering community should focus its efforts on?

RQ2: What methods, tools, techniques are likely to meet these challenges most effectively?

Any differences between the panelists?

Followed by an Open Debate, Q&A

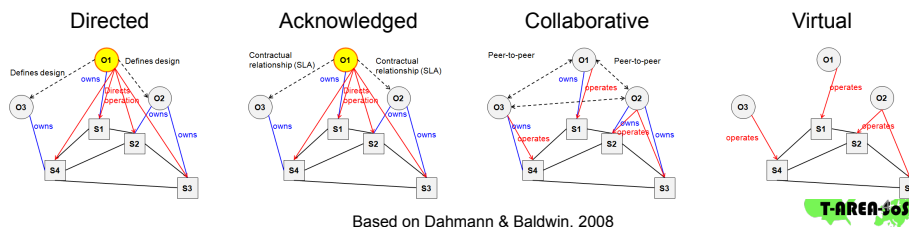
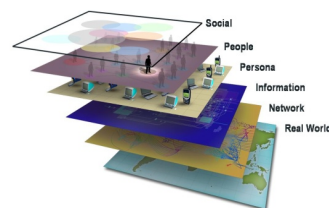
Rank the Top 5 Challenges

Then each panellist to suggest way forward and give one main takeaway message

SoS(E)

A SoS is an integration of a finite number of constituent systems which are independent and operatable, and which are networked together for a period of time to achieve a certain higher goal. (Jamshidi, 2009)

- Operational independence of component systems
- Managerial independence of component systems
- Geographical distribution
- Emergent behaviour
- Evolutionary development processes (Maier, 1998)



Main Goal of the Panel

- To identify key Requirements Engineering challenges in Systems of Systems Engineering in which the international RE community should focus its research.
- We aim to use these key challenges to define a shared international RE vision and to establish a research roadmap that will address the development of techniques, processes, methods and technologies for Requirements Engineering for Systems of Systems

Key Guiding Questions

- Two Questions to guide the panel discussion:
 - RQ1: *“What are the top five Requirements Engineering challenges in SoSE in which the requirements engineering community should focus its efforts on?”*
 - RQ2: *“What methods, tools, techniques are likely to meet these challenges most effectively”*

The Panelists:

- **Dr Judith Dahmann** is a Principal Senior Scientist at the MITRE Corporation and is currently a Technical Advisor to the Director of Defense Systems and Systems Engineering in the U.S. DoD Under Secretary of Defense for Acquisition, Technology and Logistics;
- **Professor Anthony Finkelstein** is a Professor of Software Systems Engineering and Dean of the Faculty of Engineering Science at University College London (UCL), UK;
- **Mr Alan Harding** is the President of INCOSE UK, and Chair of the BAE Systems global community of practice in Systems Engineering with the responsibility of shaping BAE Systems' global engineering processes
- **Professor Nancy R. Mead** who is a Principal Researcher in the CERT Program at the Software Engineering Institute (SEI) with expertise in security requirements engineering
- Alan and Judith are Co-Chairs for the INCOSE SOS Working Group

Main session

- Open questions to panelist:
 - What do you think SoS is?
 - What are your experiences in SoS?
 - Why is it important for RE people to start focussing on SoS?

Then each panellist provide answers and justification to the 2 questions:

RQ1: What are your top 3 Requirements Engineering challenges in SoSE in which the requirements engineering community should focus its efforts on?

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