

Editor's Corner

Editor's Corner

The printable version is no longer supported and may have rendering errors. Please update your browser bookmarks and please use the default browser print function instead.

Error creating thumbnail:
File missing

The Editor's Corner provides perspective from the Editor in Chief on critical topics for systems engineering, either through their own words or by inviting a guest writer.

20 November 2023

The formal discipline of systems engineering emerged in the first half of the 20th century. Over the last 80+ years, it has evolved from first principles to a process-focused field that generally operates in the defense and aerospace domains to a transdisciplinary one focusing on the integration and interaction between technology and people across a variety of domains. In its *Vision 2035*, the International Council on Systems Engineering (INCOSE), states that “the practice of systems engineering will further evolve to support the demands of ever-increasing system complexity and enterprise competitiveness. By 2035, systems engineering will leverage the digital transformation in its tools and methods and will be largely model-based using integrated descriptive and analytical digital representations of the systems. Systems design, analysis, and simulation models, immersive technologies, and an analytic framework will enable broad trade-space exploration, rapid design evolution, and provide a shared understanding of the system throughout its life cycle.”

The Systems Engineering Research Center (SERC) led

the initial creation of the *Guide to the Systems Engineering Body of Knowledge* (SEBoK, pronounced “see-bach”). In 2009, the SERC began the three-year process of developing the SEBoK with a team of over 70 authors from around the world. Version 1.0 was published in 2012 and in past 11 years the SEBoK has evolved in many ways: new topics, the inclusion of videos, a major rearrangement of the discussion, and perhaps most importantly, the addition of an area dedicated to the emerging topics of systems engineering.

Over the years, the SEBoK has been led by several Editors in Chief:

- Art Pyster and Dave Olwell led the development of SEBoK through version 1.0, including the decision to implement the SEBoK as a wiki.
- Rick Adcock, appointed the first Editor in Chief after the transition of SEBoK from a research task to a community-led effort, helped identify new members of the editorial board and oversaw the addition of the first domain-focused knowledge area, Healthcare Systems Engineering.
- Rob Cloutier added the first new part to the SEBoK since its initial release: Emerging Knowledge, which captures topics that are critical for systems engineers but for which the knowledge is not yet settled (e.g. artificial intelligence applications to systems engineering). Rob also fostered the addition of multi-media to the SEBoK and created and built upon articles about the discipline, including A Brief History of Systems Engineering.

I am honored to have been asked to be the newest Editor in Chief of the SEBoK. And like every Editor in Chief before me, I am extremely lucky to work with a group of editors and authors from around the world that have consistently supported the SEBoK. These people are critical representatives of the global systems engineering community, and the SEBoK would not be possible without their tireless efforts.

Looking forward as the discipline of systems engineering evolves, the SEBoK will need to evolve with it. At my first INCOSE International Symposium in 2008, I heard about something called “model-based systems engineering”. The last 5 years have seen a tremendous push toward “digital engineering”. Both of these are currently reflected in the SEBoK, but we need to do more. Digital transformation is a critical topic for systems engineers

and will continue to be for at least the next decade. But the true end state is not that we as a discipline create new pockets of practice but that instead we move as a community toward a data- and model-enabled way of working. My sincere hope is that in 2033, we will talk not about MBSE or DE but about systems engineering with models and data a standard part of practice. To that end, I'm pleased to share that we have assembled a team whose mission is to integrate the discussion of using models and data throughout the SEBoK and that Rob Cloutier has agreed to spearhead this effort.

Finally, I encourage anyone with an interest to reach out to the SEBoK team sebok@incose.net. We welcome your feedback and insights and look forward to partnering with you as we move toward the SEBoK of the future.

Sincerely,

Error creating thumbnail:
File missing

Retrieved from
"https://sandbox.sebokwiki.org/index.php?title=Editor%27s_Corner&oldid=70348"

This page was last edited on 19 November 2023, at 20:12.