BKCASE

BKCASE Newsletter
April 2015
Special Edition

What is BKCASE, BKCASE release, the BKCASE Newsletter and Featured Editor.

Special Edition

Welcome to this special edition of the BKCASE monthly newsletter. If you are a regular subscriber welcome back and thank you for your continuing support. If you do not currently subscribe please read on and consider joining our growing community.

This edition of the newsletter is being sent to a wider audience of potential subscribers, including INCOSE members and SERC affiliates. My apologies if you have received more than one copy. If you are interested in the BKCASE project, as described below, please subscribe now to receive future regular newsletters and information or join us at any time via the www.BKCASE.org.

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This special edition contains both regular features and a recap of BKCASE activity over the last 12 months:

- Brief recap of who we are and our aims
- Monthly news round-up
- Opportunities for sponsorship
- BKCASE Newsletter greatest hits

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What is BKCASE

BKCASE stands for **B**ody of **K**nowledge and **C**urriculum to **A**dvance **S**ystems **E**ngineering. It is the overarching initiative that initially created and currently maintains two products:

- The guide to the Systems Engineering Body of Knowledge (**SEBoK**): a living, authoritative guide to the knowledge important to System Engineering. SEBoK is intended to support the systems engineering community in advancing the practice, providing education, conducting research, and addressing workforce development, professional certification, standards, etc.
- The Graduate Reference Curriculum (**GRCSE**) a set of recommendation, considerations, and implementation guidance that ties best practices in graduate Systems Engineering education with the topics discussed in the SEBoK; these recommendations are intended to be tailored by universities and other organizations using GRCSE. It does not provide specific course titles or ways to package course materials.

Originally a three year project funded through the Systems Engineering Research Center (SERC), BKCASE is now a community lead effort supported by SERC, the International Council on Systems Engineering (INCOSE), and the IEEE Computer Society (IEEE-CS).

To find out more about the history of the BKCASE project, its current organisation and activities and our activities to sustain and grow both SEBoK and GRCSE please look at www.BKCASE.org

Monthly News

We are pleased to announce the release of SEBoK **v.1.3.2** on 14th April 2015. This is a second micro update to v.1.3. It fixes a number of broken links caused by the re-launching of the INCOSE website. There are no changes to SEBoK content.

Where possible the link has been updated to point at the same material in its new home on the INCOSE.org website. If that was not possible the direct link has been removed and replaced with a reference giving title, author and date. We will review all of these links for SEBoK v. 1.4 to ensure the linked material is still available and relevant. If you have any problems finding particular linked material in the meantime please contact the Editorial Board for assistance.

A SEBoK panel was run at the 9th Annual IEEE Systems Conference in Vancouver Canada. The panel included representatives from both the BKCASE governors and editorial boards. You can find more details in the news section of the BKCASE website.

At the end of last month, we ran two successful online SEBoK training sessions, that had potential authors joining from two continents. They received an insight into the BKCASE project's authoring processes and were shown how to edit the contents of the SEBoK. Following the sessions we had the pleasure of welcoming five new authors to the SEBoK team.

Show Your Support for Advancing the State of Systems Engineering

The BKCASE project invites both individuals and organizations to become BKCASE sponsors. We are seeking sponsors from across the community to expand BKCASE's value and impact globally.

We currently get over 18,000 unique visitors to the SEBoK each month, with over 34,000 page views. This number has been growing steadily month by month since September 2012.

As a BKCASE individual or organizational sponsor, you will receive the following benefits:

- Acknowledgement on the BKCASE website (www.bkcase.org) in a news article when you sign up for sponsorship
- Acknowledgement in the next release of the SEBoK wiki and the SEBoK Sandbox
- Acknowledgement in the next release of GRCSE®

In addition organizational sponsors also get:

- Your company logo in a rolling window in the side bar of the BKCASE website (visible on every page)

- Your company logo on the sponsor page of the BKCASE website with a link to the organization's website
- Your logo on the sponsor page of the monthly BKCASE newsletter
- Your logo displayed during BKCASE sessions at conferences, workshops, etc.

The 2015 cost of organizational sponsorship is $1000.
The 2015 cost of individual sponsorship is $50.

All of these benefits will be for a 12 months period. We are currently looking at other ways to offer sponsorship opportunities to organizations interested in a closer association with us. We would be delighted to discuss these with you.

The BKCASE website has been active in its current form since September 2014 and is now getting around 1000 visitors per month. We have around 400 current subscribers for our newsletter. There is a visible BKCASE presence at a number of events, including INCOSE and IEEE international meetings. This special edition of the newsletter and other promotional activities are aimed at increasing the visibility of the website and newsletter to reach a greater number of our SEBoK users and others in the SE community.

Please contact us via the BKCASE website to apply to become a sponsor or to discuss other sponsorship opportunities.

BKCASE Website and Newsletter

This special edition is the 5th in the series, which was launched along with the updated BKCASE website www.BKCASE.org in September 2014.

The website is the best place to go to find both background information on SEBoK and GRCSE and to keep up to date with our current activities. It is also the starting point for anyone who would like to become more involved in BKCASE. The website includes news items, articles, contact and other information. On the website you will find a number of of audio slide casts. These run from 3 to 10 minutes and provide more detailed information on aspects of the project. They are perfect for anyone wishing to find out more about the project. There is a from to subscribe to this newsletter and copies of all back issues. Here is just a taste of what you have been missing if you do not currently subscribe:

- Issue 1 (September 2014): A summary of the BKCASE project and an overview of the SEBoK.
- Issue 2 (October 2014): Information on how to get involved and a discussion of our future plans for SEBoK
- Issue 3: (January 2015): Details of the BKCASE related activities at the INCOSE International workshop and the first of our new "Meet the Editor" features

- Issue 4 (March 2015): A report on the INCOSE IW and an overview of GRCSE

All the past issues are available at: http://www.bkcase.org/about-bkcase/bkcase-newsletters/

Featured Editor : Alice Squires

Why is the BKCASE project important?
The BKCASE project reflects the coming together of many disparate efforts to define and document the systems engineering body of knowledge and to establish a graduate reference curriculum in systems engineering. Because of a substantial level of funding and sponsorships from academic institutions, industry, and government around the world, systems engineering experts/authors, many of whom had been working separately towards similar goals of the project, were able to join together and produce a foundational set of products for the systems engineering community. The Guide to the Systems Engineering Body of Knowledge is widely used, we can only see 'hits' to the pages and can only know about certain uses when we hear or read about them, but empirical evidence demonstrates its wide use. For the graduate reference curriculum in systems engineering, again, conversations primarily, and some published works, indicate that the document is at a minimum being referenced in the development of new master's degrees in or related to systems engineering, and also at the undergraduate level, and by universities who already offer such degrees, but the 'hits' on that document are not so easily tracked and so it's difficult to fully assess the usage and impact at this point. However, the importance of these products has not yet been fully realized.

How would you like the BKCASE project to develop?
The BKCASE project needs to keep the momentum going by retaining and growing sponsorship and funding and by expanding the current vision beyond the systems engineering community to the application of systems engineering concepts and principles, primarily in the form of systems thinking, to the sustainment of our planet. This broader vision will enable those who are passionate about the importance of systems concepts and principles to our future, to join the team through a shared vision, embracing members from other systems communities and beyond, who are already striving to address systems education at all levels, applying systems thinking to global issues, and bridging many other gaps that exist in building a sustainable future. Attaining this shared vision requires a roadmap that includes, and goes beyond, current plans of incorporating domain specific philosophies into the guide to the Systems Engineering Body of Knowledge and graduate curriculum. This also requires a focus on collaborating

with leadership of other communities and movements to bring systems education to all, not just engineers, and to all levels of education, especially at the middle school level where habits of thinking are often established for one's lifetime.

Why did you chose to become an editor?

I chose to be part of the core BKCASE team from its very inception because I saw the possibilities of this project and believed that this project could serve as the first major stepping stone for the systems engineering community to achieve the next level of contribution to making a difference in the world. However, after the initial portion of the BKCASE project was completed (end of the three year period) and the designated professional societies took over the products and many of the members of the team disbanded; the BKCASE project had a 'call' for editors and I observed that not enough were answering the call, and so I did. I wanted to keep the momentum that we have achieved thus far. Specifically, given my background on the project and my involvement in every Part of the guide and in the development of the graduate curriculum, I had the desire to support the difficult piece of more seamless integration, and to develop a clearer roadmap for those who have a need or interest in using the products. However, before that could be done there were other pieces of the puzzle that needed to be addressed, in particular Part 6 of the guide. Due to the lack of subject matter experts on the original BKCASE author team in the specialty areas particularly, these articles changed very little on the last year of the project and so Part 6 remained in a state of needing more work. At the time I volunteered, Part 6 had no volunteers to be editor and I also had an interest in working on content in the related discipline of Project Management. I recognized that the gap in content in Part 6 needs to be addressed and a strong team of subject matter experts needs to be identified and recruited to fill the author and reviewer slots, as well the structure of the Part 6 needs to be matured. And finally, there is a gap in Part 6 with the interface between systems engineers and design engineers, which needs to be addressed to complete the relationships with key disciplines interfacing with systems engineering. These factors led to my choosing to step into the Part 6 editor role.

You are editor of Part 6, what is this part about
and why is it important to have in the BKCASE project?

Part 6 addresses related disciplines to systems engineering as well as the specialty areas of systems engineering. This is a key area for systems engineers to understand - interfaces - both within the system design itself and within the project teams. Interfaces are the purview of systems engineering. This is the most critical area for 'connecting the dots', for bringing the multiple engineering disciplines together, for recognizing the importance of the 'ilities . All of the many different ways we view this role of managing the interfaces is dealt with in this section of the guide to the Body of Systems Engineering

Knowledge. In the initial roadmap of completing the guide there was a strong focus on establishing the core life cycle processes, and a minor focus on related disciplines and specialties. Now is the time to firm these areas up and appropriate related professional societies have begun to heed the call and are in the process of committing to support our efforts in this area.

What are the current activities in Part 6?

The main focus for this coming year is to complete the subject matter expert recruitment, including getting representation from professional societies with whom system engineering works with closely, across industrial engineering, design engineering, software engineering, program management, engineering management, etc. as well as representation from groups within the involved professional societies that address the specialties such as Reliability, Availability, Maintainability (RAM), Human Systems Interfaces (HSI), safety, security, system assurance, EMI/EMC and communications, resilience, manufacturing and producibility, affordability, environmental engineering, etc. We are specifically working towards developing a mature structure for Part 6 where each area covers not only the philosophies and concepts of their domain with links to the appropriate body of knowledge of the related discipline or specialty, but also address what a systems engineer needs to know about the domain, how the area fits into the system life cycle, what methods, models, tools, and measures are important for the systems engineer to be either aware of, or knowledgeable in, and key standards, templates, and other primary references. Our goal is to develop one model article that demonstrates this mature structure in a related discipline, and one model article in a specialty area.

What is your vision for Part 6?

As we begin to convert the current Part 6 knowledge areas and articles into the structure mentioned earlier, creating model articles one area at a time, we will also evolve that structure into a mature structure for this Part - that is the first goal - to identify, refine, implement, and transition this part to a mature structure. The reason this is important is it's important for users of the guide to be able to find information and if you are able to organize Part 6 into a similar structure from one domain to the next, this simplifies the ability of the user to find information, which is what the guide to knowledge is all about. The second goal is to update the content to be current, accurate, and complete, and to put in place a mechanism, by working with established professional groups, whereby the content will continue to remain current, accurate, and complete over time. Some of the domains covered in this part have a solid start, other domains are simply a shell waiting to be filled. The vision is for systems engineers, or anyone working with systems, to be able to reference this part of the guide and to find through the use of the guide, the information they need to be successful on their project.

Subject matter experts in these areas who are passionate about our project and willing and able to contribute to these goals should feel free to contact me for further information.

Editor Resume

Alice Squires is an Associate Professor in the Engineering and Technology Management (ETM) department of Washington State University and teaches financial, performance, and strategic management, decision analysis, systems engineering and systems architecture and design.

She started her career as a Professional Analyst working part time while completing a Bachelor of Science in Electrical Engineering at University of Maryland. Next she moved to IBM as an electrical engineer designing Very High Speed Integrated Circuits. After nearly ten years at IBM, she returned to academia to earn a Master's of Business Administration from George Mason University. Following the MBA she joined Lockheed Martin to work as a Senior Engineering Manager for the hardware design of the payload for the Asian Cellular Satellite (ACeS), and later in the Semiconductor Technology Center of Lockheed's radiation hardened manufacturing line. She started as the Manager of Customer Engineering and moved to Manager of Production Control leading the group through Y2K. She next served as Technical Manager of the Requirements, Integration, and Test department for an advanced amphibious vehicle at General Dynamics before moving to systems engineering consulting for IBM and Lockheed Martin, among others.

From there she returned to academia as a systems engineering faculty with industry experience, while she completed a doctorate in systems engineering from the Stevens Institute of Technology. Following the PhD she first joined Aurora Flight Sciences as manager of a systems engineering team, before returning to her passion as a full-time faculty at Washington State University in the ETM department.

She is certified by PMI as a Project Management Professional (PMP) and by INCOSE as a Certified Systems Engineering Practitioner, including in Acquisition (CSEP-Acq). She is a Senior Member of the IEEE, a member of ASEE and Systems Engineering Division Director, a member of ASEM and a co-chair on the Technical Planning Committee, a member of NDIA and INCOSE and their competency working groups, and a member of PMI.

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