



Body of Knowledge and Curriculum to Advance Systems Engineering

**Fifth Workshop on
GRCSE 0.25 Release
and
Plan for SEBoK 0.5 Development**



January 26-28, 2011

Hilton Garden Inn
Phoenix, AZ, USA

WORKSHOP REPORT

Contents

1. BKCASE PROJECT	3
2. BKCASE WORKSHOP V	3
3. WORKSHOP PROCEEDINGS	4
3.1 SEBoK 0.25 REVIEW COMMENTS.....	4
3.1.1 SEBoK Restructuring for 0.5.....	6
3.1.2 Case Studies/Companion Document.....	7
3.2 WIKI DISCUSSION FOR SEBoK 0.5	9
3.3 GRCSE 0.25 RELEASE DISCUSSION.....	10
3.3.1 Major Changes since Workshop IV.....	10
3.3.2 ASEE Paper & Framework.....	10
3.3.2 GRCSE Development.....	11
4. WAY AHEAD.....	11
4.1 FUTURE WORKSHOPS	11
4.2 BKCASE PUBLICATIONS AND OUTREACH.....	11
APPENDIX A: MEETING PARTICIPANTS.....	14
APPENDIX B: MEETING AGENDA	15
APPENDIX C: WIKI MOCK-UP.....	16
APPENDIX D: PRIMARY DATES FOR BKCASE	17
APPENDIX E: ACTION ITEMS.....	18

1. BKCASE Project

BKCASE is the acronym for the Body of Knowledge and Curriculum to Advance Systems Engineering. The BKCASE project is led by a university partnership between the Stevens Institute of Technology and the Naval Postgraduate School with sponsorship from the U.S. Department of Defense and support from INCOSE, the IEEE Computer Society, IEEE Systems Council, ACM, and NDIA Systems Engineering Division. The project scope is to define a Systems Engineering Body of Knowledge (SEBoK) and use the SEBoK to develop an advanced Graduate Reference Curriculum for Systems Engineering (GRCSE).

The ideal outcome is that the SEBoK will be supported worldwide by the Systems Engineering community as the authoritative SEBoK for the SE discipline; and that the GRCSE will receive the same global recognition and serve as the authoritative guidance for graduate degree programs in SE. Systems engineers from across the world have volunteered as authors and reviewers on the project to collaborate over a three year period and to deliver the SEBoK and GRCSE to the public in 2012.

In December 2009, the BKCASE team held an inaugural workshop in Monterey, CA, at the Naval Postgraduate School to determine the basic rules for the project and develop a common set of objectives. In addition, the team developed an initial strategy to begin work on SEBoK version 0.25, which included using ISO 15288 as the initial structure for the SEBoK. At the second workshop in Daytona Beach, Florida in March 2010, the team expanded the SEBoK contents to include many other areas of systems engineering knowledge in addition to life cycle processes and identified the initial GRCSE team. The author team broke into subteams to begin drafting materials for review at the third Workshop. At the third workshop, held in conjunction with the INCOSE International Symposium, July 2010, the author team agreed to publication and review plans for SEBoK 0.25 and discussed the way ahead for development of a draft of GRCSE 0.25. The fourth workshop, held in Toulouse, France, was the first opportunity for authors to discuss the final release version of SEBoK 0.25 and for the authors to focus on preparing the release of GRCSE 0.25. GRCSE was released for review on December 17, 2010.

2. BKCASE Workshop V

The fifth workshop was held at the Hilton Garden Inn in Phoenix, Arizona, USA on January 26th through 28th, 2011. A list of the workshop attendees is available in Appendix A and the meeting agenda in Appendix B of this report. The workshop's slide set is available online for download at the BKCASE website located at <http://www.bkcase.org>. In addition, a timeline of major dates can be found in Appendix C.

It is important to note that this is the first three-day BKCASE workshop. The first two days were plenary sessions, with the third day set aside for the authors to begin work on the SEBoK 0.5.

The objectives of the workshop were to:

1. To review and resolve major/global SEBoK 0.25 review comments issues.
2. To complete a draft development plan for SEBoK 0.5.

3. To review Wiki business cases and determine forward strategy for Wiki development of BKCASE 0.5.
4. To review GRCSE 0.25 release process and resolve residual issues.
5. To determine BKCASE staffing for SEBoK, GRCSE, Wiki, and Case Studies.
6. To review specific BKCASE outreach opportunities (conferences, articles, etc.) and obtain author volunteers for development of papers and presentations and attendance at events that align with their interests.
7. To review status of coordination efforts with IEEE and INCOSE.

During Art Pyster's introductory comments, he provided an overview of the community response to SEBoK 0.25. While he stated there is a lot of work to do, the community was generally positive about the project and appreciative of the author team's efforts. He also congratulated the author team on the completion and release of GRCSE 0.25, particularly thanking lead author Tim Ferris.

3. Workshop Proceedings

3.1 SEBoK 0.25 Review Comments

The SEBoK review period was open to over 250 reviewers from September 16, 2010 through December 15, 2010. Reviews were received from 115 reviewers, resulting in 3149 individual comments. The week before the workshop, the Core Team met in Washington, DC to review the comments and determine the most pressing issues. These issues were presented at Workshop V.

These issues are shown below, with major points of resolution included:

1. **SEBoK Structure/Organization isn't clean; too many independent chapters, no cross-linkages, no graphical "map" to help people navigate addressed.** The author team agreed to a major restructuring of the content for developing SEBoK 0.5. (please see Section 3.1.1 below for additional discussion)
2. **Too much detail for many of the topics – should have less discourse and more references.** The authors agreed with this, in general. Because SEBoK 0.25 was drafted as 16 separate chapters, this was not surprising. *The author team agreed that detailed descriptions were not appropriate and that they would focus on overviews of the material.*
3. **Doesn't always strike the right balance between prescriptive and descriptive material noted.** The author team strove to be descriptive, not prescriptive, in the first iteration of the SEBoK. However, as version 0.25 was developed by 16 separate teams, this is not surprising. *The author team reaffirmed its goal of providing descriptions with pointers to relevant literature rather than in-depth discussion.*
4. **Chapters 1 to 3 need to be more aligned and consistent.** The author team agreed to a major restructuring of the content for developing SEBoK 0.5. (please see Section 3.1.1 below for additional discussion)

5. **Chapters 6 and 7 need to be more aligned and consistent.** The author team agreed to a major restructuring of the content for developing SEBoK 0.5. (please see Section 3.1.1 below for additional discussion)
6. **Chapters 9 to 12 need to be more aligned and consistent.** The author team agreed to a major restructuring of the content for developing SEBoK 0.5. (please see Section 3.1.1 below for additional discussion)
7. **References are erratic: 2-level system confusing; some stated that there were too many references to be useful; too much BKCASE author work incorporated.** The author team agreed to restructure the references. There will be 3 categories, which are intended to be more readily understood:
 - a. **Citations.** These are the actual reference citations that follow standard guidelines for referencing materials used in an article; the BKCASE project follows the guidelines of the *Chicago Manual of Style, 15th Ed.* Reference citations may or may not also be in the “Primary References” or “Additional Readings” categories described next.
 - b. **Primary References.** These are the “Top 10” references related to a subject. There will be “top 10” lists at the article level, the knowledge area level, the part level, and for the SEBoK. The author team will work to develop a draft list of primary references going forward to Workshop VI.
 - c. **Additional Readings.** These are references that may be useful for practitioners at different levels, or which may provide alternative (non ‘main stream’) viewpoints.

In addition, all “Primary References” and “Additional Readings” will be annotated with a 1-2 paragraph description of the content and how it might be useful for a systems engineer. *A template for references will be provided by the Core Team for all to follow.*

8. **Methodology for selecting what is in the glossary was unclear and many people were surprised at what was left out.** The initial glossary was compiled using many reference sources by each of the 16 chapter teams. The authors agreed to re-examine glossary entries in terms of the words/phrases critical to understanding content. *The authors also agreed to attempt to select one definition for each term; more may be required if there are different major schools of thought on an issue. A template for glossary terms will be provided by the Core Team.*
9. **No clear rationale for deciding what should be in Chapter 14 (Cross-Cutting); the term “cross-cutting” was confusing to many.** The author team agreed that, for SEBoK 0.5, it is unlikely that all possible areas could be covered. *However, the authors responsible for “cross-cutting knowledge” (which may be renamed specialty engineering, non-functional engineering, or something else TBD) will create a list of potential topics and attempt to fill in a dozen or so as examples. This will give the community an opportunity to respond to the approach and*

structure. The Core Team will help support development of a template for each cross-cutting topic.

10. **Many style inconsistencies and need for stronger technical editing.** SEBoK 0.25 underwent a light technical edit and style correction. However, given the volume of materials, it was impossible to do a very thorough job in the time allotted. *For version 0.5, the author team agreed to follow a more structured style format (the Core Team will help by developing templates); the team also scheduled an extra two weeks for the editing and review of materials prior to 0.5 publication.*

All of the comments received will be adjudicated; authors should review all comments within their purview for Workshop VI. When all adjudication is complete, the results will be published on the BKCASE website.

3.1.1 SEBoK Restructuring for 0.5

Many reviewers (over 200 comments) stated that they did not like or agree with the overarching structure of SEBoK 0.25. One reviewer recommended a specific restructuring. The core team reviewed and refined this and presented it to the author team at Workshop V. The author team discussed this proposal and agreed upon a structure for 0.5:

- **Part 1: Introduction.** This will cover the introduction to the discipline, tips for navigating the SEBoK, and an overview of the SEBoK.
- **Part 2: Systems.** This part will discuss what systems are, what the basic characteristics of systems are, the languages for discussing/describing systems. This is the “what” of systems engineering: What is engineered?
- **Part 3: Engineering across Life Cycles.** This part will cover the actual engineering of systems, how engineering may be performed, how engineering is managed, and the implications of engineering activities throughout a system’s life. This will also discuss the different common lifecycle models. This is the “how” and “when” of systems engineering: How are systems engineered? When does this take place?
- **Part 4: Organization.** This part will cover the organizational aspects of systems engineering, who manages and performs systems engineering, as well as organizational considerations such as where systems engineering is housed and competency models for systems engineers. This is the “who” and the “where” of systems engineering: Who is responsible for performing and overseeing systems engineering? Where do systems engineering activities reside within an organization?
- **Part 5: Case Studies.** This part will cover the analysis of existing systems engineering case studies in relation to the SEBoK and how well they address specific aspects of the SEBoK. When possible, a discussion will also be provided on any domain-specific implications. For example,

BKCASE Workshop 4 Report

does the domain relevant to the case study use different terminology from that found in the SEBoK? Do they have specific focus areas that are different from those discussed in the SEBoK?

The author team agreed to this structure going forward for Workshop VI. It is expected that this may be refined as teams begin their work. However, the author team believes that this is an appropriate start. In addition, the final SEBoK will strive to identify less mature areas where there is considerable research activity as well as areas where there are gaps in research. However, it has not been determined where this will be incorporated in SEBoK 0.5.

The teams associated with these parts currently are:

Part	Lead(s)	Core Team Rep	Members
1	Barry Boehm	Art Pyster	Part Leads/Core Team to support
2	Rick Adcock	Nicole Hutchison	Richard Beasley, Brian Wells, Sandy Friedenthal, Scott Jackson, Cihan Dagli
3	Bud Lawson/ Garry Roedler	Dave Olwell	Alain Fandasier, John Snoderly, Barry Boehm, Jean-Claude Roussell, Richard Freeman, Ray Madachy, Kevin Forsberg, James Martin
4	Art Pyster	Alice Squires	Ken Nidiffer, Richard Beasley, Heidi Davidz, Hillary Sillitto
5	Heidi Davidz	Alice Squires	John Brackett, Richard Freeman, Kevin Forsberg, Tom Hilburn, Alex Lee, Aaron Chia

Authors who did not attend the workshop were tentatively identified for parts, but the Core Team/Part Team Leads will confirm this.

3.1.2 Case Studies/Companion Document

Alice Squires provided an update on the status of case studies. The current version of the Case Studies focused primarily on mapping existing case studies to the SEBoK Knowledge Areas (KAs). Materials include a matrix that discusses, for each case study, the coverage of SEBoK KAs as strong, moderate, weak, or none. Case studies examined to date are the Hubble Space Telescope (HST) (AFIT), Global Positioning System (GPS) (AFIT), and the Singapore Water Management System.

The author team discussed several recommendations provided in the SEBoK reviews. Primarily these were to:

1. Delete Case studies
2. Demonstrate domain knowledge using vignettes dispersed throughout the SEBoK in lieu of case studies
3. Keep the case studies either as a companion document or as part of the SEBoK

The author team agreed to keep the three case studies and incorporate them into the SEBoK in Part 5 (see 3.1.1 for additional information). The Hubble Space Telescope case study, which was not included

BKCASE Workshop 4 Report

in the released version 0.25 of the SEBoK, addresses, in part, the reviewer requests for an example of a failure in addition to successes. The team agreed to consider additional case study examples, including additional examples of failures with teachable moments. However, the team agreed that they should focus on only a few, and existing, case studies for the version 1.0 SEBoK release. Finally, the author team agreed to the case study purposes as presented:

1. To elaborate the principles, practices, and concepts from the SEBoK by adding domain dependent detail
2. To demonstrate how the principles, practices, and concepts from the SEBoK are applied and tailored (including terminology and rationale) to different: Application domains; Countries, regions, and cultures; Project characteristics (e.g. size & complexity)
3. To provide a means to evaluate the application of practices from the SEBoK including highlighting what works and what does not work
4. To provide a means to evaluate new and evolving principles, practices, and concepts (e.g. SoS, model-based, complex adaptive systems, etc.)
5. To motivate the use of SE principles, practices, and concepts to new users
6. To provide a teaching and training aid to new and experienced practitioners based on the above – e.g., in their domain
7. To shape the development of case studies in future.

The authors agreed that the approach, evaluation of existing case studies' treatment of SEBoK topics, is an appropriate way forward for version 0.5 and that, for version 1.0, at most a handful of completed case studies would be expected.

SEBoK Action Items:

1. Develop templates for topics (articles), references, and glossary entries. *Core Team*
2. Adjudicate review comments. *Part Teams (Leads and Core Team Reps are ultimately responsible)*
3. Develop topics/structure for each part. *Part Teams (Leads are ultimately responsible)*
4. Develop draft list of key glossary terms for each part. *Part Teams (Leads are ultimately responsible)*
5. Develop draft list of "Top 10" references for expected topics, knowledge areas, and each part. *Part Teams (Leads are ultimately responsible)*
6. Confirm participation of authors who did not attend the workshop. *Core Team/Part Team Leads.*

3.2 Wiki Discussion for SEBoK 0.5

Nicole Hutchison opened by sharing some of the review comments that indicated general community support for a wiki delivery of the SEBoK. She then provided an update on the progress of the Wiki team since Workshop IV. The team examined four possible governance/update models for delivering a version of the SEBoK with semantic linkages and improved navigability:

1. **Hyperlinked PDF**—a traditional document with hyperlinks to key terms or references.
2. **Static Wiki with Periodic Updates**—a wiki with static content that would be updated periodically *en masse*, like a traditional document, but with the ability to capture semantic linkages and community comments.
3. **Evolving Wiki**—a wiki with content that evolves at differing speeds, depending on the comments and input of the community.
4. **Open Wiki**—a wiki model, like that used by Wikipedia, which allows anyone to submit edits to any content.

The wiki teams recommended a static wiki model for the delivery of BKCASE 0.5 for review and the final delivery of BKCASE 1.0 to the eventual stewards (likely IEEE-CS and INCOSE). During development, the wiki may be more open so that the authors can edit content. A mock-up of what an article in the SEBoK Wiki may look like can be seen in Appendix C.

The author team nominally agreed with this approach. However, they want the wiki team to confirm that the additional costs for a wiki model (as opposed to a standard document) are reasonable both for development and for sustainment. The INCOSE and IEEE representatives indicated that conversations on what this means for stewardship and costs would have to be further discussed, but that if the costs are reasonable, the organizations will likely support this.

The author team would like to begin development in a wiki environment as soon as possible. The goal is for the wiki team to make a decision on the appropriate technology and have a wiki skeleton structure with templates available for Workshop VI.

Wiki Action Items

1. Cost estimate completion for Wiki development and sustainment. *Nicole Hutchison/Wiki team*
2. Select a wiki technology and develop a skeleton wiki environment. *Nicole Hutchison/Wiki team*
3. Develop templates for: articles, glossary entries, and references. *Nicole Hutchison/Wiki team*
4. Develop training/guidance information on working in the wiki environment for the author team. *Nicole Hutchison/Wiki team*

3.3 GRCSE 0.25 Release Discussion

Tim Ferris, the lead GRCSE author, provided an overview of GRCSE 0.25, particularly changes which were made after Workshop IV.

3.3.1 Major Changes since Workshop IV

Major changes to GRCSE since Workshop IV included:

1. **Addition of Objectives.** The GRCSE team developed general guidance on developing objectives for a SE master's program, provided a few example objectives from real programs (anonymous), and provided recommended GRCSE objectives.
2. **Addition of Assessment.** Information on assessment in general was added to an appendix. Discussion of how program assessment may be structured specifically within an SE master's program, and an exemplar template for how this assessment may be structured.
3. **Update of Outcomes.** Some of the outcomes presented at Workshop IV were modified to reflect Workshop discussion. For example, the outcome on understanding the relationship of SE to software engineering was modified to reflect understanding of the relationship of SE to many other disciplines. Also, an outcome on software engineering (SwE) was added—specifically stating that systems engineers should have an understanding of software engineering that fundamentally impacts how systems engineering is performed (for example, in a software-intensive system, understanding software life cycles is critical).
4. **Core Body of Knowledge (CorBoK).** The GRCSE authors put together a discussion of the CorBoK—including both the Core Foundation and the Core Extensions. In addition, they put together a draft overview of which SEBoK topics would be incorporated into the Core Foundation and the two Core Extensions.

3.3.2 ASEE Paper & Framework

Dave Olwell presented work done during the development of a paper for the ASEE 2011 conference. The paper focuses on GRCSE and, specifically, develops a framework for how a program can systematically compare their program to GRCSE. Using an existing accreditation-framework as a baseline, the author created a rubric for determining whether a program is in “initial”, “emerging”, “developed”, or “highly developed” phases based on level of alignment to each of the major GRCSE recommendation sets. These include entrance expectations, outcomes, objectives, Core Body of Knowledge (CorBoK), capstone experience, and program assessment.

The authors of the paper put this framework forward for consideration as a potential addition to GRCSE 0.5. The author team generally liked the framework and agreed that it might have some value for allowing early adopters or volunteer schools to begin understanding and using the GRCSE recommendations in their programs.

3.3.2 GRCSE Development

The GRCSE team agreed that they would wait until the GRCSE reviews are completed before doing further development (the review period ends on March 7). The Core Team will meet before the next workshop to review the comments and develop an understanding of the top issues within GRCSE. As with the SEBoK reviews, these issues will be presented to the full author team.

GRCSE Action Items (through Workshop VI)

1. *All authors, particularly those who did not participate in drafting GRCSE, are required to review GRCSE and submit a review (either in free-text or using the GRCSE review form) by March 7, 2011.*

4. Way Ahead

4.1 Future Workshops

It should be noted that the author team agreed at Workshop V that Workshops VI and VII and tentatively Workshop VIII should be 3-day sessions, with 2 days for traditional workshop and 1 day for break-out work sessions. It has not yet been decided if this will be the case for additional workshops.

- **Workshop VI: April 12-14, 2011.** Los Angeles, CA, USA, in conjunction with the Conference on Systems Engineering Research (CSER).
- **Workshop VII: June 14-16, 2011.** Denver, CO, USA, in conjunction with the INCOSE International Symposium.
- **Workshop VIII: October 11-13, 2011.** London, England, hosted by Cranfield University. (Please note, dates and location need to be confirmed).
- **Workshop IX: January, 2012.** Jacksonville, FL, USA, in conjunction with the INCOSE International Workshop.
- **Workshop X: April 2012.** Missouri University of Science and Technology, Rolla, MO, in conjunction with the Conference on Systems Engineering Research (CSER).
- **Workshop XI: Summer 2012.** Rome, Italy, in conjunction with the INCOSE International Symposium and the European Conference on Systems Engineering (EUSEC).

4.2 BKCASE Publications and Outreach

Alice Squires provided an overview of the BKCASE outreach activities (including journal and conference papers, conference presentations, etc.) conducted in 2009 and 2010, and the possible activities for 2011. She encouraged all authors to consider participating in or taking ownership of at least one outreach opportunity.

2009 Outreach Completed:

1. INCOSE D.C Chapter: October 13, Dinner Presentation
2. NDIA SE Division: Oct 27, Author Recruitment Dinner
3. INCOSE UK Chapter: Oct 28, presentation
4. INCOSE LA Chapter: Oct 29, workshop, Huntington Beach, CA
5. NDIA SE Division: December 9-10. Annual Strategic Planning Meeting, Phoenix, Arizona
6. INCOSE LA Chapter Article: Dec – on BKCASE
7. INCOSE Insight Article: Dec – Announcing BKCASE

2010 outreach completed:

1. INCOSE IW: Phoenix, Arizona, special BKCASE session on Feb 9 8am-12pm
2. IEEE Systems: April 7th, BKCASE session
3. SSTC: April 26-29, BKCASE and GSwE2009 joint panel
4. EUSEC: May 23 -26, Special BKCASE meeting, presentations and panel, Paper: BKCASE Overview
5. ASEE: June 22nd panel systems/software engineering graduate curriculum
6. INCOSE IS Academic Forum on July 13th 3:30pm-on, Paper and Presentation: Systemigrams
7. DOD SE Forum: October 1, 2010, general BKCASE presentation
8. APCOSE: Oct 4-6, Presentation
9. NDIA: Oct 26-28, A large set of presentations and panels
10. [Russian INCOSE Chapter \(RISE\): "The BKCASE Project" presented by Bud Lawson, Nov 10th](#)
11. CrossTalk, The Journal of Defense Software Engineering, Department of Defense, Nov/Dec, 2010, article on workforce development

2011 outreach opportunities include:

1. INCOSE IW: January 29-February 1, Phoenix, AZ – BOD Mtg/motion
2. IEEE Systems Council: April 4-7, Montreal, Quebec, Canada – paper/pres, paper accepted, final paper due Feb 15th, final paper done and already posted into conference system.
3. CSER: April 15-16, Los Angeles, CA – paper/pres, abstract accepted, paper originally due Feb 19th with extension to Feb 25th.
4. IEEE-CSEE&T: May 22-24, 2011, Waikiki, Honolulu, Hawaii – a panel
5. SSTC: May 16-19, Salt Lake City, Utah – paper/pres, paper due
6. INCOSE IS: June 20-23, 2011, Denver, CO – multiple panels
7. ASEE: June 26-29, 2011, Vancouver, BC, Canada – paper/pres, draft paper submitted and in review, final paper due March 11th
8. DOD SE Forum – TBD – BKCASE activities anticipated.
9. APCOSE: Oct 19-21, Seoul, South Korea – TBD – Tim Ferris and Jean-Claude expressed interest
10. NDIA: Oct 24-27, San Diego, CA – TBD – BKCASE activities anticipated.

For areas where the author team would simply like to provide a briefing on BKCASE to a specific audience, or would like to take ownership of an outreach activity, the author team is encouraged to:

1. Notify the core team (bkcase@stevens.edu) of any outreach opportunity that you choose to pursue (presentation, conference proceeding, journal article) in support of BKCASE. Please provide the conference or publication medium and the title of the presentation or article.

BKCASE Workshop 4 Report

2. Contact Alice Squires (alice.squires@stevens.edu) to discuss potential collaboration opportunities on publications (conference proceedings or journal articles) you would like to publish with one or more members of the core team as co-authors, on which you would like to take either a leadership or participatory role.
3. In either case (1 or 2), once the event is complete, lead author should please provide a copy of your briefing or publication to the Core Team (bkcase@stevens.edu) that can be posted on Sakai or possibly used in future updates of the generic slide deck.
4. Utilize the generic slide deck, which is found on Sakai and which is periodically updated by the Core Team.

Appendix A: Meeting Participants

In Attendance

Rick Adcock, *Cranfield University/INCOSE* (UK)
Richard Beasley, *Rolls-Royce* (UK)
Barry Boehm, *University of Southern California* (USA)
John Brackett, *Boston University* (USA)
Cihan Dagli, *Missouri University of Science and Technology* (USA)
Heidi Davidz, *UTC Pratt & Whitney* (USA)
J.J. Ekstrom, *Brigham young University* (USA)
Alain Faisandier, *Association Francaise d'Ingenlerie Systeme/French INCOSE Chapter* (France)
Tim Ferris, *INCOSE/University of South Australia* (Australia)
Kevin Forsberg, *INCOSE* (USA)
G. Richard Freeman, *Air Force Center for Systems Engineering, Air Force Institute of Technology (AFIT)* (USA)
Sandy Friedenthal, (USA)
Tom Hilburn, *Embry Riddle Aeronautical University* (USA)
Nicole Hutchison, *Stevens Institute of Technology* (USA)
Bud Lawson, *Lawson Konsult AB* (Sweden)
Beola Lenard, *Stevens Institute of Technology* (Support Staff) (USA)
Ray Madachy, *Naval Postgraduate School* (USA)
James Martin,
David Olwell, *Naval Postgraduate School* (USA)
Ken Niddifer, *Software Engineering Institute, Carnegie Mellon University* (USA)
Art Pyster, *Stevens Institute of Technology* (USA)
Jean-Claude Roussel, *European Aeronautical Defence and Space Company* (France)
Garry Roedler, *Lockheed Martin* (USA)
John Snoderly, *Defense Acquisition University* (USA)
Alice Squires, *Stevens Institute of Technology* (USA)
Brian Wells, *Raytheon* (USA)

Joining via WebEx

Don Gelosh, *Office of the Director of Defense Research & Engineering* (USA)
Stephanie Enck, *Naval Postgraduate School* (Support Staff) (USA)
Marcia Enos, *Lockheed Martin* (USA)
Dick Fairley, *BKCASE INCOSE Representative*
Qing Wang, *China*

Invited Guests

Karl Best, *Project Management Institute (PMI)*

Appendix B: Meeting Agenda

Wednesday, January 26, 2011

- 8:00 am – Opening Remarks/Agenda Review – *Art Pyster*
- 8:30 am – SEBoK Review Discussion – led by *Art Pyster*
- 10:20 am – SEBoK Review Discussion (con't) – led by *Art Pyster*
 - SEBoK 0.25 Review Adjudication Strategy – *Nicole Hutchison*
- 1:00 pm – Wiki Business Cases and Selection of Business Model for Wiki Development – led by *Nicole Hutchison*
- 3:20 pm – Case Study update – *Alice Squires*
- 5:00 pm – Adjourn

Thursday, January 27, 2011

- 8:00 am – Review of Day 1 – *Dave Olwell*
- 8:30 am – GRCSE 0.25 Release – led by *Tim Ferris*
- 11:30 pm – Lunch – Update on coordination with IEEE and INCOSE – led by *Art Pyster*
- 12:30 pm – GRCSE 0.25 Release (cont.) – led by *Tim Ferris*
- 1:30 pm – ASEE Paper – led by *Dave Olwell*
- 2:20 pm – Way ahead for GRCSE (between WS V and WS VI) – led by *Tim Ferris*
- 3:00 pm – BKCASE Staffing Plan for 2011 – led by *Dave Olwell*
- 4:30 pm – Discussion of BKCASE outreach opportunities – led by *Alice Squires*
- 4:45 pm – Workshop VI discussion
- 5:00 pm – Adjourn

Friday, January 28, 2011

- 8:00 am – Core Team/Part Leads Discussion
- All Authors:
- 9:00 am – Review of Plans for Working Session – *Art Pyster*
- 9:30 am – Working Sessions – groups TBD Days 1 and 2
- 12:00 pm – Lunch served in plenary room
- 1:00 pm – Working Sessions (con't)
- 3:00 pm – Final Plenary Session and Workshop Wrap-Up – *Dave Olwell*
- 3:30 pm - Adjourn

Appendix C: Wiki Mock-Up



- Part 1
- Part 2
- Part 1
 - KA 1
 - KA 2
 - Topic 1
 - Topic 2
 - KA 3
- Part 4
- Part 5

Topic 2 (Article Title)

Lorem ipsum dolor sit amet^[1], **consectetuer** adipiscing elit, sed diam nonummy nibh **euismod** tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor^[2] in hendrerit in vulputate velit esse molestie **consequat**, vel illum dolor eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue dui dolore te feugait nulla facilisi.



Figure Caption

Lorem ipsum^[3] dolor sit amet, **consectetuer** adipiscing elit, sed diam nonummy nibh **euismod** tincidunt ut laoreet dolore magna aliquam erat **volutpat**. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.^[4]

Discussion Thread

Please provide any comments on Topic 2 below.

Comment Entry Area (access controls TBD)

Comment 1: User XXXXX
Body of Comment

Comment 2: User XXXX
Body of Comment

....

Related Topics

- Topic 1
- Topic 2
- Topic 3
- Topic 4
-

Citations

- Citation 1
- Citation 2
- Citation 3
- Citation 4
-

Related Primary References

- [Reference 1](#)
- [Reference 2](#)
-

Glossary

- [Term 1](#)
- [Term 2](#)
- [Term 3](#)
- [Term 4](#)
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Appendix D: Primary Dates for BKCASE

The following are major dates for the BKCASE project for 2011-2012:

March 7, 2011: GRCSE 0.25 Reviewer Comment Deadline

April 1, 2011: Adjudication of SEBoK Comments Due

April 4-7, 2011: IEEE Int'l Systems Conference in Montreal, Quebec, Canada

April 9-10, 2011: BKCASE/GRCSE meeting in LA, CA with Tim Ferris and core team

April 12-14, 2011: BKCASE Workshop VI in LA, CA (Strategy for SEBoK v0.50 Finalized)

April 15-16, 2011: CSER in LA, CA

May 2011: Adjudication Matrix released for SEBoK v0.25

May 16-19, 2011: 23rd Annual Systems and Software Technology Conference (SSTC), Salt Lake City, Utah

May 22-24, 2011: 24th IEEE-CS Conference on Software Engineering Education and Training, Waikiki, Honolulu, Hawaii

June 14-16, 2011: BKCASE Workshop in Denver, CO

June 20-23, 2011: INCOSE IS in Denver, Dates and Length TBD

June 26-29, 2011: ASEE Annual Conference in Vancouver, BC

August 1, 2011: All SEBoK 0.5 Materials Submitted to the Core Team

September 2011: Release of SEBoK 0.5 for review

October 11-13 2011: BKCASE Workshop VIII in London (dates to be finalized)

Oct 19-21, 2011: 5th Asia-Pacific Conference on Systems Engineering (APCOSE 2011), Seoul, South Korea

October 24-27, 2011: NDIA 14th Annual SE Conference

December 2011: Release of GRCSE 0.5 for review

January 2012: BKCASE Workshop IX in Jacksonville, FL

April 2012: BKCASE Workshop X in Missouri (Missouri University of Science and Technology)

Summer 2012: BKCASE Workshop XI in Rome, Italy

Summer 2012: INCOSE IS in Rome, Italy

Appendix E: Action Items

The following are major action items for the BKCASE author team through Workshop VI:

1. Develop templates for topics (articles), references, and glossary entries. *Core Team*
2. Adjudicate review comments. *Part Teams (Leads and Core Team Reps are ultimately responsible)*
3. Develop topics/structure for each part. *Part Teams (Leads are ultimately responsible)*
4. Develop draft list of key glossary terms for each part. *Part Teams (Leads are ultimately responsible)*
5. Develop draft list of "Top 10" references for expected topics, knowledge areas, and each part. *Part Teams (Leads are ultimately responsible)*
6. Confirm participation of authors who did not attend the workshop. *Core Team/Part Team Leads.*
7. Cost estimate completion for Wiki development and sustainment. *Nicole Hutchison/Wiki team*
8. Select a wiki technology and develop a skeleton wiki environment. *Nicole Hutchison/Wiki team*
9. Develop templates for: articles, glossary entries, and references. *Nicole Hutchison/Wiki team*
10. Develop training/guidance information on working in the wiki environment for the author team. *Nicole Hutchison/Wiki team*
11. All authors, particularly those that did not author GRCSE, are required to review GRCSE and submit a review (either in free-text or using the GRCSE review form) by March 7, 2011.
12. Notify Alice Squires (alice.squires@stevens.edu) of any outreach opportunities of which you would like to take ownership.
13. Notify the core team (bkcase@stevens.edu) of any outreach opportunity that you choose to pursue (presentation, conference proceeding, journal article) in support of BKCASE. Please provide the conference or publication medium and the title of the presentation or article.
14. Contact Alice Squires (alice.squires@stevens.edu) to discuss potential collaboration opportunities on publications (conference proceedings or journal articles) you would like to publish with one or more members of the core team as co-authors, on which you would like to take either a leadership or participatory role.
15. Provide a copy of your papers, abstracts, or briefings related to BKCASE to the Core Team (bkcase@stevens.edu) for posting on Sakai and use in future updates of the generic slide deck.