



Body of Knowledge and Curriculum to Advance Systems Engineering

**Seventh Workshop on
SEBoK 0.5/Wiki Way Ahead for
Publication
and
GRCSE 0.5 Drafts**



June 17, 2011

**Warwick Hotel
Denver, CO, USA**

WORKSHOP REPORT

Contents

1. BKCASE PROJECT	3
2. BKCASE WORKSHOP VII	3
3. WORKSHOP PROCEEDINGS	4
3.1 SEBoK 0.5.....	4
3.1.2 <i>Handling Related Disciplines</i>	4
3.1.3 <i>SEBoK 0.5 Part Restructuring</i>	5
3.1.3 <i>Figures and Tables/IP</i>	7
3.1.4 <i>Integration</i>	7
3.1.4 <i>SEBoK 0.5 Release Criteria</i>	8
3.1.5 <i>SEBoK 0.5 Staffing</i>	8
3.2 WIKI DISCUSSION	9
3.2.1 <i>Progress Since Workshop VI</i>	9
3.2.2 <i>Overarching Guidance/FAQs for Wiki Development</i>	9
3.2.3 <i>SEBoK 0.5/Wiki Development Milestones</i>	11
3.3 GRCSE 0.5 PROGRESS.....	11
3.3.1 <i>Major Issues Identified in Reviews</i>	12
3.3.2 <i>GRCSE Plan from Workshop VII to Workshop VIII</i>	13
4. WAY AHEAD.....	14
4.1 FUTURE WORKSHOPS	14
4.2 BKCASE PUBLICATIONS AND OUTREACH.....	15
APPENDIX A: MEETING PARTICIPANTS.....	16
APPENDIX B: MEETING AGENDA	17
APPENDIX C: CURRENT OUTLINE OF SEBOK 0.5 (END OF WORKSHOP VII)	19
APPENDIX D: STAFFING MATRIX	25
APPENDIX E: WIKI FAQs	27
GENERAL.....	27
GLOSSARY	27
REFERENCES	28
LINKING	29
IMAGE/TABLE FAQs.....	30
APPENDIX F: BKCASE OUTREACH ACTIVITIES/OPPORTUNITIES.....	31
APPENDIX G: ACTION ITEMS & MILESTONES.....	32

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 in the development of a 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 0.25 was released for review on December 17, 2010. The fifth workshop, held in Phoenix, Arizona, focused on the review comments received on SEBoK 0.25 and the publication version of GRCSE 0.25. The sixth workshop, held in Los Angeles, California, focused on determining a way ahead for wiki implementation and examined the reviews of GRCSE 0.25.

2. BKCASE Workshop VII

The seventh workshop was held at the Warwick Hotel in Denver, CO, USA on June 14th through 16th, 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>.

The first two days of the workshop were plenary sessions. The third day opened with plenary sessions, moved to breakout sessions for the part teams and GRCSE team to work issues independently, and concluded with final outbriefs in plenary.

The objectives of the workshop were:

1. To review draft SEBoK 0.5 content and resolve any major issues;
2. To review the wiki process and structure and determine any needed changes;
3. To review and agree to the proposed SEBoK 0.5 release criteria;
4. To review IP/Copyright issues for web-based publication and agree to the process for handling IP/Copyright;
5. To finalize the way ahead to SEBoK 0.5 publication;
6. To review the initial adjudication of GRCSE 0.25 and updated draft materials of GRCSE 0.5; and
7. To establish the GRCSE 0.5 way ahead.

The authors believe that they fulfilled the objectives.

During Art Pyster's introductory comments, he reminded the group that Workshop VII was the last opportunity for the group to meet prior to the release of SEBoK 0.5. He also explained that, because of this, it was important to resolve any major structural changes at the workshop, ensure the group agreed on the way ahead, and get the group's feedback on the release criteria for SEBoK 0.25.

3. Workshop Proceedings

3.1 SEBoK 0.5

At Workshop V in Phoenix, AZ, the author team agreed to re-organize the SEBoK into 5 parts. At Workshop VI in Los Angeles, CA, a preliminary outline for the SEBoK was developed. Work from Workshop VI to Workshop VII focused on developing the content for this outline, while adjusting the outline as necessary using the configuration management process. At Workshop VII, the author team agreed to a seven-part SEBoK, as explained in the following sections.

For Workshop VII, each Part Team Lead (PTL) provided an overview of the progress to date on their parts on Day 1. On Day 3, the part teams met in breakout sessions to work on refinement of their ideas. Specific information for each part can be found in section 3.1.2, below. However, the following is a summary of the overarching progress on SEBoK 0.5:

1. All Parts have begun incorporating the adjudication of all review comments received on SEBoK 0.25.
2. All Parts have evolved their outlines and have begun drafting content. A full description of the status of content as of Workshop VII can be found in Appendix C.
3. All Parts have begun to identify key terminology and primary references.

Some specific issues remained, which are discussed below.

3.1.2 Handling Related Disciplines

There was continuing discussion of the way that disciplines related to SE are handled in the SEBoK. The general agreement was that the SEBoK should not try to incorporate all related bodies of knowledge,

but instead should include a description of what systems engineers need to know about these disciplines, with pointers back to the relevant bodies of knowledge.

There was particular concern about the treatment of project management and software engineering. Dave Olwell provided a description of discussions at the annual SSTC conference, held prior to the workshop, which touched on concern about how to appropriately intertwine these disciplines.

There was debate about the appropriate treatment of related disciplines. The final resolution was that a new part would be created – Part 6 – that would cover information about related disciplines. Again, this would not describe all of the knowledge related to the discipline, but instead would focus on what systems engineers need to know in order to effectively interact with and utilize the skills of individuals from those disciplines. Dick Fairley volunteered to be the lead for the new part.

3.1.3 SEBoK 0.5 Part Restructuring

In addition to the addition of a new part as discussed in 3.1.2, it should be noted that there was also an agreement to split Part 3 into two parts: Part 3: Systems Engineering and Management and Part 4: Applications of Systems Engineering. The co-leads of the previous Part 3 – Garry Roedler and Bud Lawson – agreed to lead each of the new parts. Mr. Roedler is the lead for Part 3, Mr. Lawson for Part 4. Subsequently, the former Part 4 (Enabling Systems Engineering) is now Part 5; likewise the previous Part 5, Implementation Examples, is now Part 7.

The following is a brief summary of the progress for each Part as of the close of Workshop VII. (All workshop briefings can be found on Sakai).

- **Part 1: Introduction.** This section provides the “opening” material to the SEBoK. Principally, the section introduces the SEBoK (context, purpose, and scope), the concepts of systems and systems engineering (including an introduction to the history of SE), an introduction to the discussion of related disciplines, the use cases for the SEBoK, a guide to using the SEBoK and the SEBoK organization/content. Currently all articles of Part 1 have some draft content.
- **Part 2: Systems.** This part focuses on defining what is created by systems engineering and on providing links into the appropriate aspects of systems science. Specifically, Part 2 provides a discussion of what systems are, provides system principles (truisms about systems which are important for systems engineering), discusses the different types of systems, provides information on different representations of systems (models), and discusses the systems approach (including aspects of systems thinking) and systems engineering challenges. The systems approach and systems engineering challenges in particular will have strong links to Parts 3 and 4. Members of the Part 2 team have begun coordinating with the other teams to ensure these linkages are appropriately developed. As of Workshop VII, most of the articles for Part 2 had some content.
- **Part 3: Systems Engineering and Management.** This part specifically focuses on how SE is conducted. It includes discussion of the traditional SE processes, such as definition, realization, and deployment and use, as well as SE management processes such as risk, decision,

information, and configuration management. Part 3 will also include an overview of life cycles, product and service life management, and specialty engineering. This part is expected to comprise approximately a large portion of the SEBoK and is focused around what is traditionally viewed as systems engineering. It will also include information on documented best practices or common pitfalls for performing SE or systems management activities. As of Workshop VII, the majority of this part had some material drafted.

- **Part 4: Applications of Systems Engineering.** This part was created by removing the more applications-focused information from Part 3. Part 4 focuses on providing guidance on how the processes and methods presented in Part 3 can and should be applied to specific types of systems, such as services, enterprises, products, and systems of systems (SoS). As of Workshop VII, the content for this part was fairly sparse.
- **Part 5: Enabling Systems Engineering.** This knowledge area deals with the different ways in which a group can organize to perform SE activities. Specifically, Part 5 discusses strategies for organizing for SE (including value propositions, purpose, and governance), considerations for individuals within an organization (including competency, personal SE development, and ethics), considerations for groups (teams, projects, programs), and a discussion of the business/enterprise perspective. As of Workshop VII, the majority of the articles for Part 5 had some content.
- **Part 6: Systems Engineering and Other Disciplines.** This part was created by removing the articles for specialty disciplines from Part 3 and creating new knowledge areas to deal with the entanglement of SE with software engineering (SwE) and project management (PM). As of Workshop VII, this Part was primarily blank, making it moderately high risk. The team, however, believes that there are materials from SEBoK 0.25 that may be reused.
- **Part 7: Implementation Examples.** This part provides real-world examples of SE activities and links the concepts in those activities to the SEBoK. There are two main types of examples: case studies and vignettes. Case studies are existing case studies that examine the successes and challenges in past SE programs; the Part 5 team then provides linkages from the case study information to the related SEBoK knowledge areas (KAs) and topics. Vignettes are smaller-scale examples, but are still based on real-world systems. For SEBoK 0.5, the Part 5 team hopes to have 10 examples (a mixture of vignettes and case studies). It is important to note that discussion of these examples is centered around links to the SEBoK; it is *not* intended that there will be value judgments about the examples or systems they describe.

By the end of Workshop VII, each Part team had updated the outline of its proposed part (including knowledge areas and topics) and fleshed out the expectations for the content of each Part. For a compiled list of the SEBoK part/knowledge area/topic structure as of Workshop VII, please see Appendix C.

3.1.3 Figures and Tables/IP

Steph Enck provided an overview of the IP/Copyright information required for each image and table appearing in the SEBoK or GRCSE. She stressed the importance of ensuring that the project has proper permissions to use all copyright information. She also provided an example of a “placeholder figure”, which will replace all figures and tables for which the project does not have permissions. The group also discussed the possibility of generating a ‘blanket’ letter of approval for specific societies. For example, INCOSE might provide BKCASE with authorization to replicate any figures contained within its products. Mrs. Enck will examine the possibility of this approach with an attorney.

SEBoK Action Items:

1. All authors should submit their IP/Copyright release forms to bkcase@stevens.edu *at the same time* that they submit figures or tables for the SEBoK or they insert their figures or tables into GRCSE. *All Authors*
2. *ALL IP Forms and the Images must be submitted by July 31, 2011. All Authors*
3. All figures and tables will be examined to ensure that proper permissions are obtained and that figures and tables are labeled accordingly. All copyright permission letters will be sent. *Steph Enck*

3.1.4. Integration

A consistent concern surfaced during the workshop was the ability of the author team to ensure appropriate consistency within and between the Parts. Several approaches were discussed for dealing with this. In the end, it was determined that a special integration team would be formed. This team will help to examine specific areas of concern across the parts. Each Part Team Lead (PTL) will be responsible for ensuring integration within his/her part and will also raise any areas of potential concern to the integration team for their awareness. In addition to this approach, the integration team will also develop a set of concept maps to help gain a top-down picture of consistency across the SEBoK. Finally, each Part team will examine at least one of the SEBoK use cases and determine how well the current draft of the SEBoK addresses the use case(s).

Integration Team	
Co-Leads	Art Pyster & Dave Olwell
Members	Rick Adcock, Jim Anthony, Barry Boehm, Heidi Davidz, Dick Fairley, Nicole Hutchison, Bud Lawson, Steve Mitchell, Ken NiDiffer, Garry Roedler, Alice Squires, Mary VanLeer

SEBoK Action Items:

1. Identification of areas of concern for cross-part integration. *Part Team Leads*
2. Development of initial concept maps. *Sandy Friedenthal, Steven Mitchell*

3. Identification of use cases by July 1, 2011. *Part Team Leads*

3.1.4 SEBoK 0.5 Release Criteria

A set of release criteria was developed for SEBoK 0.5. These release criteria were drafted by the Core team, iterated with the PTLs, and presented at the workshop. During the workshop, the release criteria were edited in real time and revisited as new decisions were reached. The final list of release criteria is:

1. 75% of all articles have “significant” content including appropriate primary references, key terms, citations, and links to related articles
2. Articles average no more than 1750 words with the goal of no article longer than 2000 words
3. Every Part Team Lead agrees all articles in his/her part are ready for release and the overall structure of his/her part is reasonably stable
4. The Core Team agrees all articles are ready for release
5. Every article has been through the tech editing process
6. Every link has been checked for correctness
7. Each image has a copyright release in hand or there is a placeholder for the image - with a pointer to another source (such as a website or a book) if one exists
8. Core Team believes the overall SEBoK will be well-received by *early adopters* – a “gestalt” perspective
9. All authors have had opportunity to comment on glossary; Core Team approves glossary entries and definitions with consultation by Part Team Leads
10. For 90% of identified primary references, there is complete bibliographic information and for 50% there is annotation
11. Core Team believes the parts are “reasonably” consistent and Part Team Leads believe their individual parts are “significantly” consistent
12. Core Team believes SEBoK architecture is stable and reflects sufficient breadth of SE concepts (hasn’t missed anything major) – Part list + KA + topics is 90% right – will not change more than 10% to Version 1.0 – the SEBoK is sufficiently modular that it can be evolved without major breakage
13. Gang of 6 from BKCASE/INCOSE/IEEE agree there is nothing that would prohibit INCOSE/IEEE from becoming stewards after version 1.0 is released

The general idea is that the Core team and PTLs will work to ensure that the SEBoK meets these criteria. In addition, the authors will have a chance for a brief period of time to review the SEBoK. Nominally, each author will be assigned 6 articles to review. These reviews will provide input to the preparation for publication. However, **no authors will make changes after August 15, 2011.**

3.1.5 SEBoK 0.5 Staffing

The staffing for SEBoK 0.5 development was reviewed on Day 2. The following table is the summary of individuals working on each of the parts.

BKCASE Workshop 7 Report

Part	Lead	Core Team Rep	Staff
1	Boehm	Pyster	Adcock, Dagli, Pyster
2	Adcock	Hutchison	Aslaksen, Dori, Friedenthal, Hutchison, Long, Freeman, Pineda, Wells, Jackson
3	Roedler	Anthony	Conrow, Dick, Dickerson, Faisandier, Jones, Madachy, Mitchell, Olwell, Roussel, Snoderly, Stiffler, Towhidnejad, Boehm, Dagli, Freeman, Pineda, Jackson, Wells, Forsberg, Sillitto, Valerdi, Lawson, NiDiffer, Lee, Fairley, Croll, Gallagher
4	Lawson	Olwell	Dahmann, Henshaw, Jamshidi, Martin, White, Freeman, Pineda, Valerdi, NiDiffer
5	Pyster	Squires	Anthony, Beasley, Calvano, Jackson, Sillitto, NiDiffer, Fairley, Squires, Davidz
6	Fairley	Hutchison	Booth, Dagli, Pineda, Jackson, NiDiffer, Croll, Gallagher, Shishko
7	Davidz	Squires	Brackett, Chia, Hilburn, Forsberg, Freeman, Pineda, Roedler, Lawson, Lee, Squires

Authors who did not attend the workshop were tentatively identified for parts, but the Core Team/Part Team Leads will confirm this. For the overarching staffing matrix, please see Appendix D. In addition, a few potential new authors were identified for the parts. For each potential author, a BKCASE point of contact (POC) was assigned to approach the author and invite them to the team. If they accept, they will become formal members of the BKCASE author team.

3.2 Wiki Discussion

Nicole Hutchison opened by providing an overview of the progress on a SEBoK wiki environment since Workshop VI in April 2011. After this, she reviewed the processes and procedures for working within the wiki and presented a series of FAQs.

3.2.1 Progress Since Workshop VI

At Workshop VI, the author team agreed to a proposed structure for the first iteration of SEBoK 0.5 and a configuration management process for altering that structure. Shortly after Workshop VI, a draft of the wiki was developed. All authors were required to attend a general orientation on working in the wiki prior to receiving their credentials.

Appendix C shows the status of the wiki, in terms of the number of populated articles, glossary terms, and primary references, as of the workshop.

3.2.2 Overarching Guidance/FAQs for Wiki Development

Nicole provided guidance based on author comments and frequently asked questions for moving forward:

1. **SEBoK Size.** Because the SEBoK is anticipated to be in a wiki platform, it is difficult to define size parameters. The authors developed 2 guidelines (one bottom-up and one top-down) to help

constrain the size for SEBoK 0.5 and keep it manageable. The “total size” is a rough estimation. The true restrictions will be based on article length:

- a. **Article Length.** *Articles are expected to be 1750 words or less.* This is the size for the body of the article and does not include citations, figures, captions, tables, etc. This equates to approximately 4-5 pages of text. All articles are expected to fall within this range for 0.5 and can, of course, be shorter. This will help ensure that content is manageable and will also enforce the concept of referencing information in lieu of recreating it. (In keeping with SEBoK being a Guide to the Body of Knowledge and not a compilation of the body of knowledge.)
 - b. **Total Size.** The SEBoK is expected to have approximately 200 articles, with the expectation that total text (exclusive of figures, glossary, references) would total no more than about 400 pages in a traditional document. The estimated breakdown for 0.5 was that the text equivalents would be approximately 20 pages for Part 1; 80 for Part 2; 200 for Part 3; 60 for Part 3; and 40 for Part 5. Again, this is an overarching goal, which will be influenced by the maximum article lengths described in item a (above).
2. **Configuration Management (CM).** Because this is a body of knowledge, it is critical that overarching structure be maintained even in the wiki environment. Any author requesting a change to the structure at the outline level (as see at [SEBoK 0.5 Outline](#)) must go through the CM process. The author will present his or her ideas to the PTL. If the PTL agrees, the author will then submit a change request form documenting the desired change and the rationale. The CM Board will review the request and make a decision within 48 hours of submission. If the change is accepted, the wiki team will update the article structure as appropriate and the wider team will be notified. All authors at Workshop VII have agreed to this process. Details on the process, the form, and a matrix of all change requests submitted to date may be found on the wiki under [Configuration Management](#).
3. **References.** There are three types of references: Citations, Primary References, and Additional References. The [FAQs](#) and the [References Help Page](#) document how to identify references, proper citation, and adding reference lists to articles. (Note: Since the workshop, a formatted reference list has been added to every content article on the wiki.)
4. **Glossary Terms.** The process for identifying glossary terms using internal linking was reviewed. All glossary terms will be identified using internal linking ([[]]) in PHP) and will contain the tag “(glossary)” at the end. The wiki team will create glossary pages as requested. Once created, authors will have a chance to review the glossary pages and provide feedback. For more information, please see [FAQs](#) and the [Glossary Help Page](#).
5. **Editing Others’ Work.** Authors may directly edit pages to which they are assigned. However, each Part has its own protocols for editing based on the article lead and supporting authors. Authors should follow the direction of their part leads. However, it should be noted that *no*

author should directly edit an article to which he or she is not assigned. Authors should use the discussion feature of the wiki to comment on articles for which they are not directly responsible.

These are the main points for the FAQs. All FAQ discussions were captured and an FAQ page created in the wiki (see [FAQs](#)) as well as Appendix E of this report. In addition, the Help pages were updated based on these discussions.

3.2.3 SEBoK 0.5/Wiki Development Milestones

The following is an outline of the major movements in wiki development going forward to SEBoK 0.5.

- July 1: Part Teams identify "Areas of Concern" for integration
 - Part Teams identify/volunteer for appropriate Use Case "threads" which they will walk through (expectation: 1-page description and "path" through the SEBoK for each use case)
- July 8: Draft Concept Maps shared with team
- July 15: Wiki Architecture is Locked (reminder: all CM requests should be submitted by July 13)
 - Integration Team provides feedback on areas of concern
 - Part Team's Use Case Thread drafts complete
 - Part Teams identify specific questions for the SEBoK 0.5 review
- July 22: Glossary terms are finalized for 0.5c
- July 31: ALL IP information for figures and tables must be submitted
- Aug 1: Part Team Leads begin approving articles for publication
 - Publication Process begins (Tech Editing, Core Team, Wiki Team)
- Aug 8: Internal Review Assignments Identified
- Aug 15: Part Team Leads have approved ALL articles for publication
 - Internal Review begins (authors will be assigned ~6 articles to review, though authors may review additional articles)
 - Publication Process continues (Tech Editing, Core Team, Wiki Team)
- Aug 22: Internal Review completed
 - Publication Process continues (Tech Editing, Core Team, Wiki Team)
- Sept 15: SEBoK 0.5 is released

3.3 GRCSE 0.5 Progress

Tim Ferris, the lead GRCSE author, provided an overview of the current adjudication status for the GRCSE 0.25 review comments, focusing on major issues that needed further discussion by the wider BKCASE author team.

3.3.1 Major Issues Identified in Reviews

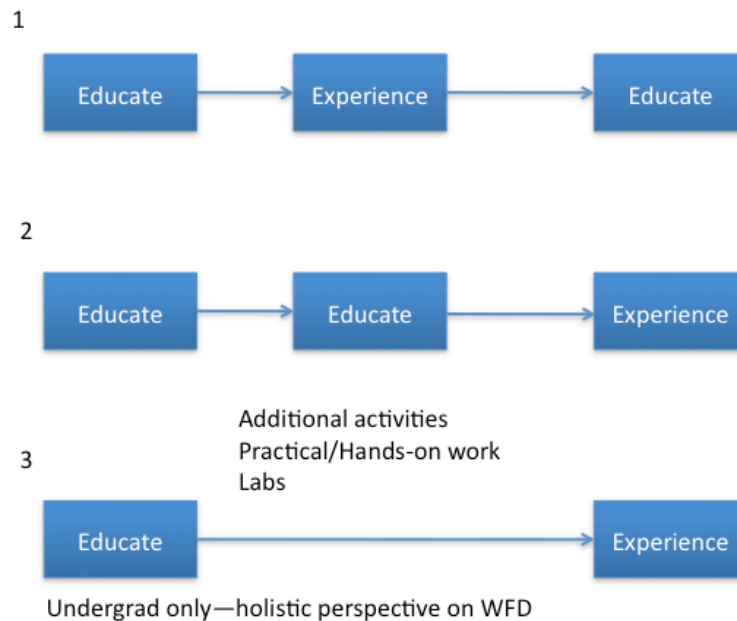
The major issues identified by multiple reviewers, and the primary discussion points from Workshop VI are captured below.

1. **Global Applicability.** Many of the reviewers commented that GRCSE 0.25 seems to be very US-centric. Though the authors attempted to provide guidance that would be globally applicable, it seems that many educational systems can not support the recommendations made in GRCSE. A primary example of this is in the realm of experience (see below). A primary goal of the project is for GRCSE to be globally applicable. The GRCSE team will pay particular attention to this going forward to version 0.5 and is also considering recruiting new authors who will help provide perspective on non-US educational systems.
2. **Experience.** GRCSE 0.25 recommended that students have at least 2 years of practical experiences upon entry to a graduate SE program (or that, if they did not, the program provide enough practical experience to make up for this). This was a contentious issue both within and outside the US. However, it indicates that many countries follow a different model of education and that, if GRCSE rigidly applies this model, it may not achieve its goal of global applicability. To address this, GRCSE will try to develop guidance on both of the major education/workforce development models the author team is aware of: undergraduate education followed immediately by graduate education versus undergraduate education followed by practical experience after which an individual enters a graduate program. (See section 3.2.2 below.)
3. **Defense/Aerospace Slant.** Several reviewers commented that GRCSE seemed to have a specific slant to the defense and aerospace industries. GRCSE is meant to apply to system-centric programs, meaning that it should be domain independent. Tim indicated that he believes this impression was given because the few examples cited in GRCSE 0.25 were from defense/aerospace-focused programs. Though the body explains that these are examples and that guidance is more generic, the team believes that by either removing these examples or providing a broader range of examples, this can be addressed.
4. **Degrees Required for Entry.** GRCSE 0.25 stated that an individual should have an undergraduate degree in mathematics, engineering, or the natural sciences. This was very contentious within the community. Many reviewers suggested that individuals with undergraduate degrees in the social sciences or with MBAs would be ideal candidates for a SE master's program. The GRCSE team proposed that an appropriate way ahead may be to identify the elements of different degree types that prepare students to enter a SE master's program (such as understanding the scientific method, high-order mathematical languages, or the fundamentals of engineering). This approach may allow the authors to be more explicit about the entry recommendations, while allowing more flexibility for implementation.
5. **Software.** GRCSE 0.25 included knowledge in the Core Body of Knowledge (CorBoK) which specifically reflected information from the SWEBoK. Because of the development of SEBoK Part

6 on related disciplines, the GRCSE team has agreed that discussion of SwE (and other related disciplines) for the CorBoK will be tied directly to the materials found in Part 6 of the SEBoK.

3.3.2 GRCSE Plan from Workshop VII to Workshop VIII

The GRCSE team, as discussed above, will incorporate the Workshop VII discussion of major issues resulting from the GRCSE 0.25 review into the draft materials for Workshop VII. One of the primary issues they will deal with, though, is the incorporation of different workforce development/educational models in order to make GRCSE more globally applicable. Moving forward, the GRCSE team will frame the discussion as shown in below:



The concept is that there are two overarching approaches to graduate education. In the first example, the workforce generally received undergraduate education, gains experience, and then pursues graduate education. In the second example, individuals generally complete undergraduate and graduate education before entering the workforce. For completeness of discussion, the GRCSE team has also documented that undergraduate education followed by experience is also a valid workforce development option. However, only examples 1 and 2 would be relevant to GRCSE.

The team believes that these 2 models adequately cover the majority of ways graduate education may be approached. They believe that there will be implications for both models throughout the various aspects of GRCSE. Instead of developing two separate documents, however, the team will attempt to identify commonalities in curricula addressing each, and then highlight how each model will impact the different areas of the curriculum. For example, an objective may be attained by a graduate student with experience upon or shortly after graduation, while a student without practical experience will not be expected to achieve the same outcome until they have some experience.

The GRCSE team will determine the best way to address and provide recommendations at Workshop VII.

BKCASE Workshop 7 Report

BKCASE Authors	GRCSE (Chapters)
Adcock, Rick	3 (lead),4,7
Brackett, John	5 (lead),7, Appendix F
Chia, Aaron Eng Seng	8
Ekstrom, Joseph J.	6, App. B, App. E
Fairley, Dick	5, 6
Ferris, Tim	1,2,3,6,8, App B
Hilburn, Tom	4, App A (lead)
Hutchison, Nicole	1,2,4,App. A
Jackson, Peter	4
Mitchell, Steve	4
Ollwell, Dave	3 (lead)4 (lead),6,7,8 (lead),App. D
Prun, Daniel	8, App. D
Squires, Alice	6(lead),7,App. E
Towhidnejad, Massood	4
VanLeer, Mary	App. A

GRCSE Action Items (through Workshop VIII)

1. Complete adjudication of the primary/global issues raised by the review comments and development of recommendations for delivery at Workshop VII. *GRCSE team*
2. Develop near-final drafts of all materials except for the CorBoK and Appendix C (CorBoK mapping). *GRCSE team*
3. Develop a solid draft of the CorBoK based on the July 15th locked SEBoK architecture, including recommended Bloom's levels and discussion of the different tracks (SED and TM). *GRCSE team*

4. Way Ahead

4.1 Future Workshops

It should be noted that the author team agreed at Workshop VI that Workshops VII and VIII should be 3-day sessions, with 2 days for traditional workshop and 1 day for break-out work sessions.

- **Workshop VIII: October 11-13, 2011.** London, England, hosted by Cranfield University. (Please note, dates and location need to be confirmed).
- **Workshop IX: January 24-26, 2012.** Jacksonville, FL, USA, in conjunction with the INCOSE International Workshop. (location tentative)
- **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 since the last workshop, the remaining activities for 2011, and upcoming deadlines for events in 2012. A complete list can be found in Appendix F. She encouraged all authors to consider participating in or taking ownership of at least one outreach opportunity.

2011 remaining outreach opportunities include:

1. INCOSE IS: June 20-23, 2011, Denver, CO – several panels being held as part of Academic Forum
2. IEEE SoSE: June 27-30, 2011, Albuquerque, New Mexico – Garry Roedler heading panel on SEBoK
3. ASEE: June 26-29, 2011, Vancouver, BC, Canada – Ailce Squires presenting team paper
4. DOD SE Forum – TBD – BKCASE activities anticipated.
5. APCOSE: Oct 19-21, Seoul, South Korea –Tim Ferris and Jean-Claude Roussel to present papers
6. NDIA: Oct 24-27, San Diego, CA – Submissions for a 3-presentation session on SEBoK and a GRCE panel were made by the Core Team and Tim Ferris; waiting for response from NDIA.

All authors who submit papers or presentations on BKCASE should notify the Core Team at bkcase@stevens.edu and provide a copy of the final paper and/or presentation. 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.
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.
3. 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)
James Anthony, *OSD, AT&L Contract Support* (USA)
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)
Stephanie Enck, *Naval Postgraduate School* (Support Staff) (USA)
Dick Fairley, *BKCASE INCOSE Representative*
Alain Faisandier, *Association Francaise d'Ingenlerie Systeme/French INCOSE Chapter* (France)
Tim Ferris, *INCOSE/University of South Australia* (Australia)
G. Richard Freeman, *Air Force Center for Systems Engineering, Air Force Institute of Technology (AFIT)* (USA)
Sandy Friedenthal, *SAF Consulting* (USA)
Brian Gallagher, *Northrop Grumman* (USA)
Nicole Hutchison, *Stevens Institute of Technology* (USA)
Bud Lawson, *Lawson Konsult AB* (Sweden)
Alex Lee, *Defense Science and Technology Agency* (Singapore)
Ray Madachy, *Naval Postgraduate School* (USA)
Steven Mitchell, *Lockheed Martin* (USA)
David Olwell, *Naval Postgraduate School* (USA)
Ken Nidiffer, *Software Engineering Institute (SEI), Carnegie Mellon University (CMU)* (USA)
Ricardo Pineda, *University of Texas at El Paso* (USA)
Daniel Prun, *Ecole Nationale de l'Aviation Civile (ENAC)* (France)
Art Pyster, *Stevens Institute of Technology* (USA)
Jean-Claude Roussel, *European Aeronautical Defence and Space Company* (France)
Garry Roedler, *Lockheed Martin* (USA)
Hillary Sillitto, *Thales* (UK)
John Snoderly, *Defense Acquisition University* (USA)
Alice Squires, *Stevens Institute of Technology* (USA)
Mary VanLeer, *TITLE* (USA)

Joining via WebEx

Paul Croll, *CSC* (USA)
Tom Hilburn, *Embry Riddle Aeronautical University* (USA)
Massood Towhidnejad, *Embry-Riddle Aeronautical University (ERAU)*

Appendix B: Meeting Agenda

Tuesday, June 14, 2011

Closed Session

7:30 am – Part Team Leads/Core Team Discussion

Plenary

9:00 am – Opening Remarks/Agenda Review – *Art Pyster*

9:30 am – Overview of and Agreement to Release Criteria – *Art Pyster*

10:00 am – Part Team Progress to SEBoK 0.5 with Respect to Release Criteria – *part team leads*

10:00 am – Part 1 Overview – *Barry Boehm (Adjust time to arrival)*

10:20 am – Part 2 Overview – *Rick Adcock*

10:40 am – Part 3 Overview – *Garry Roedler and Bud Lawson*

11:20 pm – Part 4 Overview – *Art Pyster*

11:40 am – Part 5 Overview – *Heidi Davidz*

1:00 pm – SEBoK 0.5 Handling of Related Disciplines to be Closed – Special Focus on Software Engineering – led by *Art Pyster*

2:00 pm – Overarching Discussion of SEBoK 0.5 Content (against Release Criteria)– led by *Art Pyster*

3:20 pm – Wiki Progress and Process Review Discussion – led by *Nicole Hutchison*

4:45 pm – Wrap Up – *Art Pyster 2*

5:00 pm – Adjourn

Wednesday, June 15, 2011

Plenary

8:00 am – Review of Day 1 – *Dave Olwell*

8:30 am – Resolution of Outstanding Day 1 Issues – led by *Art Pyster*

9:15 am – Finalize SEBoK 0.5 Way Ahead – led by *Art Pyster*

10:30 am – Update on Progress Since Workshop VI – led by *Tim Ferris*

11:00 pm – Review of GRCSE 0.5 Draft Materials (Adjudication and Updates) – *chapter leads*

11:00 am – Entrance Expectations – *Dave Olwell*

10:20 am – Objectives – *Rick Adcock*

10:40 am – Outcomes – *Massood Towhidnejad*

11:20 am – Architecture – *John Brackett*

11:40 am – CorBoK – *Alice Squires*

1:00 pm – Resolution of Remaining Global Issues – *Tim Ferris*

2:30 pm – GRCSE Way Ahead (to WS VIII) – led by *Tim Ferris*

3:20 pm - GRCSE Way Ahead (to WS VIII) (cont.) – led by *Tim Ferris*

3:45 pm – Review of and Agreement to IP/Copyright Process – *Steph Enck*

4:30 pm – Planning for Day 3 Breakout Sessions (Process/Deliverables) – led by *Alice Squires*

5:00 pm – Adjourn

Thursday, June 16, 2011

Plenary

8:00 am – Day 2 Recap – *Dave Olwell*

8:30 am – Review of Staffing for SEBoK and GRCSE – *Dave Olwell*

9:00 am – Communication and Outreach Discussion – *Alice Squires*

9:15 am – Workshop VIII Discussion – *Steph Enck/Rick Adcock*

BKCASE Workshop 7 Report

9:25 am – Review Breakout Rooms/Logistics – *Steph Enck*

Part Teams

9:30 am – Working Sessions Begin

(Breakouts) 9:30 am – Make-up Wiki Orientation –**Capitol IV**

GRCSE –Cambridge (15th Floor)

Part 2 –Board Room on Map (also called Centennial)(2nd Floor)

Part 3 –Capitol IV (2nd Floor)

Part 4 – Evans Room (2nd Floor)

Part 5 –Executive Lounge (15th Floor)

Part 6 –Pre-Function Lounge (2nd Floor)

11:30 pm –Lunch in **Capitol IV** (*Grab and Go Back*)

11:30 am - Wiki FAQ / Advanced Editing –**Capitol IV**

3:15 pm – Break for Final Plenary (*snack provided in Capitol IV*)

Plenary

3:30 pm – Part Team Working Session Recaps

3:30 pm – Part 1 – *Barry Boehm*

3:40 pm – Part 2 – *Rick Adock*

3:50 pm – Part 3 – *Garry Roedler/Bud Lawson*

4:00 pm – Part 4 – *Art Pyster*

4:10 pm – Part 5 – *Heidi Davidz*

4:20 pm – GRCSE – *Tim Ferris*

4:30 pm – Final Plenary Session and Workshop Wrap-Up – *Art Pyster*

5:00 pm – Adjourn

Appendix C: Current Outline of SEBoK 0.5 (end of Workshop VII)

Key

Black = No Change

Blue = New Topic or Modified Article Name

Red = Delete

▪ Part 1: SEBoK 0.5 Introduction

- Context and Purpose of the SEBoK
- Scope of the SEBoK
- SE and Other Engineering Disciplines
- A Short History of SE: Challenge and Response
 - [Overview of Systems Engineering Challenges](#)
- Key SE Principles and Practices
- Origins of the SEBoK
- SEBoK Users and Uses
- Another Scope Dimension: Domain-Independent Knowledge
- Intertwined Disciplines and the SEBoK
- Scope and Guidance for the Construction of the SEBoK
- Structure of SEBoK version 0.5
- Next Steps

▪ Part 2: Systems

- Knowledge Area: Systems Overview
 - Topic: What is a System?
 - Topic: System Context
 - Topic: Overview of System Science
 - Topic: System Perspectives
- Knowledge Area: System Concepts
 - Topic: Concepts Related to Systems
 - Topic: Concepts Related to System Relationships
 - Topic: Complexity and Emergence
- Knowledge Area: Types of Systems
 - Topic: Classifications of Systems
 - ~~◦ Topic: Engineered Systems (move content to “Groupings of Systems”)~~
 - Topic: Groupings of Systems
 - ~~◦ Topic: System Domains~~
 - [Topic: The Product View of Engineered Systems](#)

- [Topic: The Service View of Engineered Systems](#)
- [Topic: The Enterprise View of Engineered Systems](#)
- Knowledge Area: Representing Systems with Models
 - Topic: What is a Model?
 - Topic: Why Model?
 - Topic: Types of Models
 - Topic: System Modeling Concepts
 - Topic: Modeling Standards
- Knowledge Area: Systems Approach
 - [Topic: Overview of the Systems Approach](#)
 - Topic: Exploring a Problem or Opportunity
 - Topic: Systems Analysis Approach
 - Topic: Synthesis of a System
 - Topic: Proving a System
 - [Topic: Owning and Making Use of a System](#)
 - [Topic: Applying the Systems Approach](#)
 - ~~◦ [Topic: Incremental Problem Resolution or Opportunity Realization \(move content to "Applying the Systems Approach"\)](#)~~
- Knowledge Area: Systems Challenges
 - [Topic: Systems Engineering Success Factors](#)
 - Topic: Complex System Challenges
 - Topic: Dynamically Changing Systems
 - [Topic: Interoperability and Network Centric Architectures](#)
 - [Topic: Evolutionary Systems](#)
- **Part 3: Systems Engineering and Management**
 - Knowledge Area: Life Cycle Models
 - Topic: Life Cycle Characteristics
 - Topic: System Life Cycle Process Drivers and Choices
 - Topic: Representative System Life Cycle Process Models (2550 words / 9 pages)
 - [Topic: Integration of Process and Product Models](#)
 - Knowledge Area: System Definition (2436 words / 10 pages)
 - Topic: Stakeholder Requirements (2538 / 11 pages)
 - Topic: System Requirements (2911 words / 12 pages)
 - Topic: Architectural Design (4734 words / 19 pages)
 - Topic: System Analysis
 - Knowledge Area: System Realization (13167 words / 50 pages)
 - [Topic: System Implementation](#)
 - [Topic: System Integration](#)

- [Topic: System Verification & Validation](#)
- ~~◦ [Topic: Validation](#)~~
- Knowledge Area: System Deployment and Use
 - Topic: System Deployment
 - Topic: Operation of the System
 - Topic: System Maintenance
 - Topic: Logistics
- Knowledge Area: Systems Engineering Management
 - Topic: Planning
 - Topic: Assessment and Control
 - Topic: Risk Management (2348 words / 9 pages)
 - Topic: Measurement (2230 words / 9 pages)
 - Topic: Decision Management
 - Topic: Configuration Management
 - Topic: Information Management
 - Topic: Quality Management (2119 words / 9 pages)
- Knowledge Area: Product and Service Life Management ([Possibly System Life Management](#))
 - Topic: Service Life Extension
 - Topic: Capability Updates, Upgrades, and Modernization
 - Topic: Disposal and Retirement
- Knowledge Area: Systems Engineering Standards
 - [Topic: Relevant Standards](#)
 - [Topic: Alignment and Comparison of the Standards](#)
 - Topic: Application of Systems Engineering Standards

▪ **Part 4: Applications of Systems Engineering**

- Knowledge Area: Product Systems Engineering
 - [Topic: Product Article 1](#)
 - [Topic: Product Article 2](#)
 - [Topic: Product Article 3](#)
- Knowledge Area: Service Systems Engineering
 - [Topic: Service System Background](#)
 - [Topic: Fundamentals of Service](#)
 - [Topic: Value of Service Systems Engineering](#)
 - [Topic: Service Realization Life Cycle](#)
 - [Subtopic: Service Systems Engineering Processes and Stages](#)
 - [Subtopic: Service Systems Engineering Activities](#)
 - [Topic: Quality of Service Techniques and Methods](#)
- Knowledge Area: Enterprise Systems Engineering

- ~~Topic: Enterprise Systems Engineering Background~~
- Topic: The Enterprise as a System
- Topic: Related Business Activities
- Topic: Enterprise Systems Engineering Key Concepts
- Topic: Enterprise Systems Engineering Process Activities (2077 / 8 pages)
- Topic: Enterprise Capability Management
- Knowledge Area: Systems of Systems (SoS)
 - Topic: Architecting Approaches for Systems-of-Systems
 - Topic: Socio-technical Feature of Systems-of-Systems
 - Topic: (Enterprise?) Capability Engineering

- **Part 5: Enabling Systems Engineering**
 - Knowledge Area: Systems Engineering Organizational Strategy
 - Topic: Organizational Purpose
 - Topic: Value Proposition for Systems Engineering
 - Topic: Systems Engineering Governance
 - Knowledge Area: Enabling Businesses and Enterprises to Perform Systems Engineering
 - Topic: Determining Needed Systems Engineering Capabilities in Businesses and Enterprises
 - Topic: Organizing Businesses and Enterprises to Perform Systems Engineering
 - Assessing Systems Engineering Performance of Businesses and Enterprises
 - Topic: Developing Systems Engineering Capabilities within Businesses and Enterprises
 - Topic: Culture
 - Knowledge Area: Enabling Teams to Perform Systems Engineering
 - Topic: Determining Needed Systems Engineering Capabilities in Teams
 - Topic: Organizing Teams to Perform Systems Engineering
 - Topic: Assessing Systems Engineering Performance of Teams
 - Topic: Developing Systems Engineering Capabilities within Teams
 - Topic: Team Dynamics
 - Knowledge Area: Enabling Individuals to Perform Systems Engineering
 - Topic: Roles and Competencies
 - Topic: Assessing Individuals
 - Topic: Developing Individuals
 - Topic: Ethical Behavior

- **Part 6: Software Engineering, Project Management, and Specialty Engineering**
 - Knowledge Area: Systems Engineering and Software Engineering
 - Topic: SE and SwE Article 1
 - Topic: SE and SwE Article 2

- Topic: SE and SwE Article 3
- Knowledge Area: Systems Engineering and Project Management
 - Topic: SE and PM Article 1
 - Topic: SE and PM Article 2
 - Topic: SE and PM Article 3
- Knowledge Area: Systems Engineering and Acquisition/Procurement
 - Topic: SE and A/P Article 1
 - Topic: SE and A/P Article 2
 - Topic: SE and A/P Article 3
- Knowledge Area: Specialty Disciplines
 - ~~◦ Topic: Integration of Specialty Engineering~~
 - Topic: Reliability, Dependability, and Maintainability (Current article, “Reliability and Maintainability” will be modified to reach this position)
 - Topic: Human System Integration
 - ~~— Subtopic: Environment~~
 - ~~— Subtopic: Personnel/Manpower~~
 - ~~— Subtopic: Training~~
 - ~~— Subtopic: Human Factors~~
 - ~~— Subtopic: Occupational Health~~
 - ~~— Subtopic: Habitability~~
 - ~~— Subtopic: Human Survivability~~
 - ~~◦ Topic: Dependability~~
 - Topic: Safety
 - ~~— Subtopic: Reliability and Maintainability (2305 words / 8 pages)~~
 - ~~— Subtopic: Availability~~
 - ~~— Subtopic: Supportability~~
 - ~~◦ Topic: Robustness~~
 - ~~— Subtopic: Adaptability~~
 - ~~— Subtopic: Resilience~~
 - Topic: Security
 - Topic: System Assurance
 - ~~— Subtopic: Supply Chain Risk Management~~
 - ~~◦ Topic: Spectrum Supportability~~
 - ~~— Subtopic: Spectrum Management~~
 - Topic: Electro-Magnetic Interference/Electro-Magnetic Compatibility
 - ~~◦ Topic: Producibility~~
 - ~~◦ Topic: Transportability~~
 - ~~— Subtopic: Packaging~~
 - ~~— Subtopic: Feasible Shipping Modes~~

- [Topic: Manufacturability & Reparability](#)

- **Part 7: Systems Engineering Implementation Examples**

- Matrix of Implementation Examples
- Case Studies
 - Hubble Space Telescope Case Study
 - Global Positioning System Case Study
 - Medical Radiation Case Study
 - FBI Virtual Case File System Case Study
 - International Space Station Case Study
 - MSTI Case Study
 - Space Shuttle Case Study
 - Korean Light Rail Case Study
- Vignettes
 - Denver Airport Baggage Handling System Vignette
 - GE Birth of IDEF Vignette
 - Virginia Class Submarine Vignette
 - UK West Coast Route Modernisation Project Vignette
 - [Singapore Water Management](#)

Appendix D: Staffing Matrix

Please note: The staffing matrix reflects the outcome at the end of Workshop VII (June 14, 2011).

BKCASE Authors	SEBoK 0.5 Part(s)	GRCSE (Chapters)	Integration Team
Adcock, Rick	1,2 (lead)	3,4,7	Member
Anthony, Jim	3,5		Member
Aslaksen, Erik	2		
Beasley, Richard	5		
Boehm, Barry	1 (lead),3		Member
Booth, Stuart	6		
Brackett, John	7	6 (lead),7, Appendix F	
Calvano, Chuck	5		
Chia, Aaron Eng Seng	7	8	
Conrow, Edmund	3		
Croll, Paul	3,6		
Dagli, Cihan	1,3,6		
Dahmann, Judith	4		
Davidz, Heidi	5,7 (lead)		Member
Dick, Jeremy	3		
Dickerson, Charles	3		
Dori, Dov	2		
Ekstrom, Joseph J.		7, App. B, App. E	
Fairley, Dick	3,5,6 (lead)	5, 6	Member
Faisandier, Alain	3		
Ferris, Tim		1,2,3,7,8, App B	
Forsberg, Kevin	3, 5		
Freeman, G. Richard	2, 3, 4, 5, 7		
Friedenthal, Sanford	2		
Gallagher, Brian	3,6		
Henshaw, Michael	4		
Hilburn, Tom	7	4, 5 (lead), App A (lead)	
Hutchison, Nicole	2	1,2,4,App. A	Member
Jackson, Peter		4	
Jackson, Scott	2, 3, 5, 6		
Jamshidi, Mo	4		
Jones, Cheryl	3		
Lawson, Harold "Bud"	3,4 (lead),7		Member
Lee, Yeaw lip "Alex"	3,5		
Long, David	2		
Madachy, Ray	3		
Martin, James	4		
Mitchell, Steve	3	4	Member

BKCASE Workshop 7 Report

BKCASE Authors	SEBoK 0.5 Part(s)	GRCSE (Chapters)	Integration Team
NiDiffer, Ken	3,4,5,6		Member
Olwell, Dave	3, 4	3 (lead),4,7,8 (lead),App. D	Lead
Pineda, Ricardo	2, 3, 4, 6, 7		
Prun, Daniel		8, App. D	
Pyster, Art	1,4 (lead)		Lead
Roedler, Garry	3 (lead),7		Member
Roussel, Jean-Claude	3		
Shishko, Bob	3,6		
Sillitto, Hillary	3, 5		
Snoderly, John	3		
Squires, Alice	5,7	6, 7(lead), App. E (lead)	Member
Stiffler, Bill	3		
Towhidnejad, Massood	3	4 (lead)	
Valerdi, Ricardo	3,4		
VanLeer, Mary		App. A	Member
Wells, Brian	2,3		
White, Brian	4		

Appendix E: Wiki FAQs

General

Q: If I disagree with another author’s materials (i.e. an article that I’m not assigned to), can I just make changes? No. The process for providing feedback on another author’s materials is to use the discussion feature of the wiki. This allows the authors to respond and to determine whether they agree with your concerns/recommendations. Also, this is the only way to currently track updates/changes.

Q: How do I use the discussion feature of the wiki? Access the article you are interested in. Click the “Discussion” tab at the top of the page (this is next to the “Edit” tab). Look at the discussions already posted. You may find that someone has already brought up your issue. If so, please click on “Reply” for a relevant comment and add your thoughts. If no one had brought up your concerns, click “Start a New Discussion”. Enter a subject for your discussion (for example, your area of concern), type your comments, and click “Save Page.”

Q: When I click on an article, how do I know “where” I am in the SEBoK? Each article has been assigned categories. These identify the place in the SEBoK as well as the level of the article. The Categories are:

Part 1	Part 6	Glossary of Terms
Part 2	Part 7	Primary Reference
Part 3	Knowledge Area	Case Study
Part 4	Topic	Vignette
Part 5	Subtopic	

The terms “Part”, “Knowledge Area”, and “Topic” are not currently included in the article titles.

Glossary

Q: How do I link to a glossary term?

–Formatting: `[[Term (glossary)]]`

–Appears: [Term \(glossary\)](#)

Q: What if I want to use plurals or don’t want capitalization?

–Formatting: `[[Term (glossary)|text you want (glossary)]]`

–Appears: [text you want \(glossary\)](#)

Q: How do I request a term to be added to the glossary?

- Formatting: [[Term (glossary)]] (either format above)
- Appears: **Term (glossary)**
- When approved will change to: **Term (glossary)**

References

Q: How many types of references are used for SEBoK 0.5 and how are they different?

- Citation* = ANY reference from which you quote or directly pull ideas
- Primary Reference* = One of “Top 5” references for that article.
- Additional Reference* = Other references you would like to recommend.

Q: What about “additional readings” from 0.25? The reference categories have been simplified. Authors should review relevant references from 0.25 and allocate them to either Primary or Additional references as appropriate.

Q: How do I add a primary reference?

- Format: [[Reference Title]]
- Appears as: **Reference Title**
- When the reference page is added: **Reference Title**

Q: When I identify a Primary Reference, what information do I need?

- FULL Bibliographic entry (see guidance at http://www.bkcasewiki.org/index.php/Help:How_to_add_a_primary_reference)
- 1-2 paragraph annotation on why the primary reference is important for the article.
- After the wiki team creates the reference page with the bibliographic entry, you will be able to add your annotation to the reference page. Nicole will be responsible for ensuring that these are inserted and properly formatted.

Q: How do I cite sources in the wiki? Use in-text parenthetical citations, formatted using the Chicago Manual of Style 15th Edition (same as 0.25). The full text of each reference cited should be listed at the end of each article under the heading “Citations”.

Q: How do I list the reference for my article? Lists of all citations, primary references, and additional references should be included at the bottom of all articles.

Reference Lists (Heading 2)

Citations (Heading 3)

Primary References (Heading 3)

Additional References (Heading 3)

Formatting is:

```
<pre>
==References==
===Citations===

===Primary References===

===Additional References===

</pre>
```

Linking

Q: Can I link to external websites? The website is added as an external link:

*Format: [www.websitename.com]

*Displays as: [\[1\]](#)

Q: Can I change the format for an external link? Yes.

*Format: [www.websitename.com Desired Text]

*Displays as: **Desired Text**

This is **different** from the format for internal links. External links use a space between the URL and the name. Internal links use the pipe character: |.

Q: If I link to a website, is that a primary reference? NO. You can link to general websites, but they only become primary references if you format them properly (see Primary Reference FAQs).

Q: Can I start linking to other articles in the SEBoK? Absolutely! Just follow the format for internal links:

*Format: [[Article Title]]

*Displays as: **Article Title**

****Note:** The text must appear **exactly** as the article title appears; capitalization, spacing, etc. must be exactly the same or the link will appear broken (red).

Q: What if I want the text to appear differently? There may be times when an author wants to display slightly different text from the article title (for example, the article title may be singular while the sentence requires a plural form).

*For linking to **content articles**, please do not change the titles. If the article title does not work exactly, the recommendation is that authors use phrasing such as, “As described in the **TITLE** article, . . .” or “See the article on **TITLE**”.

*For linking to **glossary articles**, changes may be made to alter the capitalization, use an acronym only, etc. However the “(glossary)” tag should be maintained. (See the Glossary FAQs for additional information).

Image/Table FAQs

Q: How can I create a table in the wiki? Full instructions, including sample code, can be found at http://www.bkcasewiki.org/index.php/Help:How_to_insert_/modify_a_table

Q: Can I insert a table as an image? For 0.5, yes (though actual tables are preferred). The table will be subject to all of the rules/requirements of images. (For 1.0, no. All tables will have to be translated into web-based tables for 1.0.)

Q: Should I try to add formatting to my tables? No. Tables should be entered in basic formatting. Any styles will be applied to all tables using the backend features of MediaWiki by the wiki team.

Appendix F: BKCASE Outreach Activities/Opportunities

The following is the list of conferences remaining for 2011:

- INCOSE IS: June 20-23, 2011, Denver, CO
- IEEE SoSE: June 27-30, 2011, Albuquerque, New Mexico
- ASEE: June 26-29, 2011, Vancouver, BC, Canada
- DOD SE Forum – TBD
- APCOSE: Oct 19-21, Seoul, South Korea
- NDIA: Oct 24-27, San Diego, CA

The following is the list of upcoming deadlines for the relevant 2012 conferences:

- CSER: March 19-22, 2012 (August 5, Sept 2)
- IEEE Systems: March 19-23, 2012 (Oct 1, Feb 15)
- ASEE: Summer 2012 (Tentative: Sept, Jan)
- INCOSE IS/EUSEC: Summer 2012, Rome Italy (Tentative: Nov, March)

Full details, including links to the call for papers for the above, can be found in Alice Squire's briefing from Workshop VII. This is located on Sakai. The file path is:

BKCASE 2 / Resources / Workshops/Activities/Events / BKCASE Workshops / Workshop VII_Denver, CO / Slide Decks / Alice – BKCASE Wkshp VII Outreach.ppt

Appendix G: Action Items & Milestones

The following are major milestones for the BKCASE author team through Workshop VIII:

- July 1: Part Teams identify "Areas of Concern" for integration
 - Part Teams identify/volunteer for appropriate Use Case "threads" which they will walk through (expectation: 1-page description and "path" through the SEBoK for each use case)
- July 8: Draft Concept Maps shared with team
- July 15: Wiki Architecture is Locked (reminder: all CM requests should be submitted by July 13)
 - Integration Team provides feedback on areas of concern
 - Part Team's Use Case Thread drafts complete
 - Part Teams identify specific questions for the SEBoK 0.5 review
- July 22: Glossary terms are finalized for 0.5c
- July 31: ALL IP information for figures and tables must be submitted
- Aug 1: Part Team Leads begin approving articles for publication
 - Publication Process begins (Tech Editing, Core Team, Wiki Team)
- Aug 8: Internal Review Assignments Identified
- Aug 15: Part Team Leads have approved ALL articles for publication
 - Internal Review begins (authors will be assigned ~6 articles to review, though authors may review additional articles)
 - Publication Process continues (Tech Editing, Core Team, Wiki Team)
- Aug 22: Internal Review completed
 - Publication Process continues (Tech Editing, Core Team, Wiki Team)
- Sept 15: SEBoK 0.5 is released
- Early October: GRCSE 0.5 sent to author team for reaview.
- Oct 11-13: BKCASE Workshop VIII

Below is a list of specific action items, as outlined in this report.

1. All authors should submit their IP/Copyright release forms to bkcase@stevens.edu *at the same time* that they submit figures or tables for the SEBoK or they insert their figures or tables into GRCSE. *All Authors*
2. ALL IP/Copyright permission letters *must* be submitted by **July 31, 2011**. *All Authors*
3. All figures and tables will be examined to ensure that proper permissions are obtained and that figures and tables are labeled accordingly. *Steph Enck*

BKCASE Workshop 7 Report

4. Identification of areas of concern for cross-part integration. *Part Team Leads*
5. Development of initial concept maps. *Sandy Friendenthal, Steven Mitchell*
6. Identification of use cases by July 1, 2011. *Part Team Leads*
7. Complete adjudication of the primary/global issues raised by the review comments and development of recommendations for delivery at Workshop VII. *GRCSE team*
8. Develop near-final drafts of all materials except for the CorBoK and Appendix C (CorBoK mapping). *GRCSE team*
9. Develop a solid draft of the CorBoK based on the July 15th locked SEBoK architecture, including recommended Bloom's levels and discussion of the different tracks (SED and TM). *GRCSE team*