



# BKCASE Workshop IV

Mercure Atria Hotel Downtown

Toulouse, France

October 13-14, 2010



*As a Reminder...*

# What is BKCASE?

- Project to create:
  - Systems Engineering Body of Knowledge
  - Graduate Reference Curriculum in Systems Engineering (GRCSE™ – pronounced “Gracie”)
- Started in September 2009 by Stevens Institute of Technology and Naval Postgraduate School with primary support from Department of Defense
- Project will run through 2012
- Intended for world-wide use



# What is the SEBoK?

Describes the boundaries, terminology, content, and structure of SE that are needed to systematically and consistently *support*:

Task Name	Task Description
<i>Inform Practice</i>	Inform systems engineers about the boundaries, terminology, and structure of their discipline and point them to useful information needed to practice SE in any application domain
<i>Inform Research</i>	Inform researchers about the limitations and gaps in current SE knowledge that should help guide their research agenda
<i>Define Curricula</i>	Define the content that should be common in undergraduate and graduate programs in SE
<i>Certify Professionals</i>	Certify individuals as qualified to practice systems engineering
<i>Decide Competencies</i>	Decide which competencies practicing systems engineers should possess in various roles ranging from apprentice to expert

Guide to the literature, not all the content of the literature

# What is in GRCSE?

- ***Guidance for Constructing and Maintaining the Reference Curriculum:*** the fundamental principles, assumptions, and context for the reference curriculum authors
- ***Entrance Expectations:*** what students should be capable of and have experienced before they enter a graduate program
- ***Outcomes:*** what students should achieve by graduation
- ***Architecture:*** the structure of a curriculum to accommodate core material, university-specific material, and elective material
- ***Core Body of Knowledge:*** material that all students should master in a graduate SE program

Not specific courses. Not specific packaging. Adaption and selective adoption expected and encouraged.

# BKCASE Vision and Objectives

## Vision

“Systems Engineering competency models, certification programs, textbooks, graduate programs, and related workforce development initiatives around the world align with BKCASE.”

## Objectives

1. Create the SEBoK and have it be globally recognized by the SE community as the authoritative guide to the body of knowledge for the SE discipline.
2. Create GRCSE and have it be globally recognized by the SE community as the authoritative guidance for graduate programs in SE.
3. Facilitate the global alignment of related workforce development initiatives with SEBoK and GRCSE.
4. Transfer stewardship of SEBoK and GRCSE to INCOSE and the IEEE after BKCASE publishes version 1.0 of those products, including possible integration into their certification, accreditation, and other workforce development and education initiatives.



# Our Partners



Under  
consideration



Under  
consideration



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as of  
October 2010**

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# Rules for BKCASE Activities

1. Products generated by the authors, not the sponsor or partners
2. Even though the Department of Defense is the sponsor, it does not have any authority over the content of the products, nor are the products slanted towards defense systems development and acquisition
3. Volunteer authors do the bulk of the writing
4. Core Team from Stevens and Naval Postgraduate School provides stable labor and direction
5. Core Team responsible for final integration, technical editing, and clean up of products



*And Now for Today's Workshop...*

# Workshop Objectives

1. Review SEBoK 0.25 release; resolution of residual issues
2. Agreement on the adjudication and visibility processes for review comments
3. Discussion of proposed Wiki governance, structure, architecture; decision whether to proceed with Wiki model
4. Review of GRCSE draft materials; discussion and resolution of major decision points on content and structure
5. Develop GRCSE 0.25 way ahead, release plan, and review process

# Workshop Rules

1. Primarily meet in plenary session
2. Everyone has a voice
3. Record decisions and major points in real-time on slides that all can see
4. Strive for consensus on all substantive matters
5. Expect courtesy and professional behavior at all times
6. Record extensive minutes and publish them after each workshop

# Wednesday's Agenda

Time	Topic
8:00a	<i>Breakfast</i>
8:30a	Opening remarks, agenda review, new author and guest introductions – <i>Art Pyster</i>
9:00a	SEBoK Review (Progress/Issues/Way Ahead) – <i>Art Pyster</i>
10:30a	<i>Break</i>
10:50a	Case Study Update – <i>Alice Squires</i>
11:15a	SEBoK Review Comments Received to Date – <i>Nicole Hutchison</i>
11:30a	Overview of GRCSE 0.25 Draft Materials – <i>Tim Ferris</i>
12:30p	<i>Lunch</i>
1:30p	Wiki Discussion – <i>Hans-Peter Koning</i>
2:30p	GRCSE 0.25 Draft (continued) – <i>Tim Ferris</i>
3:30p	<i>Break</i>
3:50p	GRCSE 0.25 Draft (continued) – <i>Tim Ferris</i>
6:30p	<i>Adjourn for the Day</i>
8:00p	<i>Dinner</i>

# Thursday's Agenda

Time	Topic
8:00a	<i>Breakfast</i>
8:30a	Review of Day 1 – <i>Dave Olwell</i>
9:00a	GRCSE 0.25 Draft (continued) – <i>Tim Ferris</i>
10:30a	<i>Break</i>
10:45a	GRCSE 0.25 Draft (continued) – <i>Tim Ferris</i>
12:30p	<i>Lunch</i>
1:30p	GRCSE 0.25 Way Ahead – <i>Tim Ferris</i>
2:30p	Closing Remarks – <i>Art Pyster</i>
3:00p	<i>Workshop Adjourn</i>



# SEBok Review: Progress, Issues, Way Ahead

Art Pyster

# SEBoK Summary

- Version 0.25 released for limited review on September 15, 2010 – congratulations author team!
  - 0.25 is a prototype; 0.5 is for early adopters; 1.0 is for global community
- 656 pages long, 15 out of 16 chapters drafted, lots of very good material – more than expected at this point
- Uneven maturity, too aerospace/defense, too process-oriented
- Around 200 reviewers signed up – hoping for > 1000 comments – direction, topics, style, references, ...
- Reviews due December 15, 2010
- All review comments will be adjudicated and adjudication published
- Case studies planned for early 2011

# State of SEBoK 0.25

1. Many chapters went through several iterations, but a few chapters were largely developed between Workshop III and September 15
2. Author team size varied across chapters, impacting both the maturity of the writing and diversity of the viewpoints and references
3. Every chapter scrubbed and tech edited
4. Target length for each chapter was 25 pages, but there is wide variation in actual chapter length
5. There is a wide range of writing styles, level of detail, etc.
6. Degree of prescriptive vs. descriptive writing varied widely

# State of SEBoK 0.25

7. Pointers to more than 700 books, articles, and websites divided into two broad categories: primary references and additional references/ readings.
8. Primary references are for anyone who wants to understand the most important information the chapter covers.
9. Additional references/ readings are noteworthy contributions or specialized writings that would selectively be of interest to readers.
10. Authors did an uneven job of identifying references and citations.
11. Some authors copied extensively from other documents. Where identified, Core Team (a) added citations or (b) rewrote material.

# State of SEBoK 0.25

12. Ties to software engineering and project management are tenuous
13. More than 100 tables and diagrams, many requiring permission to use. Permission has been requested
14. Case studies need to be written

# Review Questions

1. Is stated purpose of the SEBoK (found in Chapter 1) correct?
2. Is intended audience of the SEBoK (found in Chapter 1) correct?
3. Is scope of the SEBoK correct; i.e., does SEBoK cover the right topics (found in the Table of Contents and in the body of the document)?
4. How would you improve the writing about any specific topic? Did we leave off an important concept or discuss a concept poorly?
5. Did we properly identify all the primary references for a topic? The additional references and readings? Are there references or readings missing? If so, please identify them.

# Review Questions

6. Did we properly identify all the correct glossary terms? Were important terms left out or are the definitions incorrect or incomplete?
7. How well does the SEBoK currently satisfy its stated purpose for the intended audience?

# Q1 Assessment

Is stated purpose of the SEBoK (found in Chapter 1) correct?

# Q2 Assessment

Is intended audience of the SEBoK (found in Chapter 1) correct?

# Q3 Assessment

Is scope of the SEBoK correct; i.e., does SEBoK cover the right topics (found in the Table of Contents and in the body of the document)?

# Q4 Assessment

How would you improve the writing about any specific topic? Did we leave off an important concept or discuss a concept poorly?

# Q5 Assessment

Did we properly identify all the primary references for a topic? The additional references and readings? Are there references or readings missing? If so, please identify them.

# Q6 Assessment

Did we properly identify all the correct glossary terms? Were important terms left out or are the definitions incorrect or incomplete?

# Q7 Assessment

How well does the SEBoK currently satisfy its stated purpose for the intended audience?



# Between Now and Workshop V...

- Several authors proposed getting started now to improve 0.25.
- However, we now have 200 people writing reviews!
- Comments could tell us what a wonderful job we have done. Could also tell us we need to make major changes to SEBoK architecture, layout, topics, etc. – We need to hear from the community.
- Review comments fall into three broad categories:
  1. Local changes (add reference, change presentation order within chapter, ...)
  2. Minor global changes to the SEBoK (choice of chapters is incomplete or wrong, ...)
  3. Major global changes to the SEBoK (domain-independent + case studies is wrong, prescriptive vs. descriptive approach is wrong, ...)
- By January workshop, the Core Team will have categorized every comment, looked for patterns, and have recommendations on Category 3 (Major Global) comments

1. Decide how to respond to Major Global and Minor Global comments. This could drive formation of new author teams, etc.
2. Ensure we have at least 4 authors on each team. Didn't always achieve that for 0.25.
3. Assign resolution of Local comments to appropriate author teams.
4. Adopt specific Wiki procedures for writing assignments

# Approximate Schedule

- November 19: GRCSE 0.25 materials due to Core Team
- December 15: SEBoK 0.25 limited review comments due
- December 17: GRCSE 0.25 sent out for limited review
- January 14: Two case study companion documents sent to authors as read-ahead for Workshop V
- January 21: Limited review comment summary sent to authors as read-ahead for Workshop V
- January 27-28: Workshop V in Phoenix, Arizona