SEBoK Users and Uses

The users and uses described in this article were identified based on the six SEBoK purposes described in the SEBoK Introduction.

Users can either be primary (those who use the SEBoK directly) or secondary (those who use the SEBoK with assistance from a systems engineer). Indicative, but not exhaustive, sets of example uses are shown in Tables 1 and 2 below.

Contents

New to SEBoK or Systems Engineering?

The list of users and use cases below allow someone who has come to the SEBoK with a particular focus to identify quickly where to focus their reading. If you are completely new to systems engineering or have no clear view of how it is covered in the SEBoK you should use Use Case 0 below to orient yourself and learn the basics before looking at the other use cases:

- Use Case 0: Systems Engineering Novices

Primary Users

Primary users are those who use the SEBoK directly, as shown in Table 1. Hyperlinks in the second column link to the associated use case, where one has been written. The use cases are listed at the end of the topic, and may also be seen here.

Table 1. Primary SEBoK Users and Common Uses. (SEBoK Original)

#	Users	Uses

1	Practicing Systems Engineers ranging from novice through expert	• Taking on a new SE role in a project; preparing by finding references for study • Expanding SE expertise and specialization; preparing by finding references for study • Seeking to understand the principles of SE; seeking the best references to elaborate on those principles • Reviewing a project or mentoring a new SE performer; seeking to understand what best practices to look for • Pursuing professional development through study of SE topics, including new developments in SE
2	Process engineers responsible for defining or implementing SE processes	• Maintaining a library of SE process assets; seeking to understand which SE process models and standards are most relevant • Tailoring a process for a specific project; seeking to learn how others have tailored processes, or how a specific application domain affects tailoring • Measuring the effectiveness of an organization's SE processes; seeking to learn how others have done that • Defining standards for a professional society or standards organization
3	Faculty Members	• Developing a new graduate program in SE, and deciding what core knowledge all its students must master; the user should consult the *Graduate Reference Curriculum for Systems Engineering (GRCSE™)* in conjunction with the SEBoK • Developing a new SE course; seeking to identify course objectives, topics, and reading assignments • Incorporate SE concepts in courses or curricula focused on engineering disciplines other than SE
4	GRCSE authors	• As members of the GRCSE author team, deciding what knowledge to expect from all SE graduate students • See *Graduate Reference Curriculum for Systems Engineering (GRCSE™)* (Pyster et al. 2015)
5	Certifiers	• Defining a company's in-house SE certification program; seeking to understand what others have done, how such programs are typically structured, and how to select the knowledge that each person seeking certification should master • Defining certification criteria for a professional society or licensure program
6	General Managers, Other Engineers, developers, testers, researchers	• Mastering basic vocabulary, boundaries, and structure of SE; seeking a few primary references • Learning what the scope of SE is, relative to the General Manager role • Learning what the role of the systems engineer consists of, relative to others on a project or in an organization • Learning to effectively perform a general manager role on an SE integrated product team
7	Customers of Systems Engineering	• Providing resources to and receiving artifacts from systems engineers • Seeking to better understand what to ask for, how to request it, how much to pay for it, and how to judge the quality of what is received
8	SE managers	• Evaluating possible changes in team processes and tools proposed by systems engineers on various teams; seeking independent information with which to evaluate the proposals • Hiring systems engineers, and developing competency-based job descriptions

| 9 | SE researchers | • Looking for gaps are in SE knowledge to help guide a research agenda
• Getting familiarize with a research topic; seeking the most important articles about the topic |

Secondary Users

Secondary users are those who use the SEBoK with assistance from a systems engineer, as shown in Table 2.

Table 2. Secondary SEBoK Users and Common Usages. (SEBoK Original)

#	Users	Uses
1	Human resource development professionals	• Supporting the hiring and professional development of systems engineers
2	Non-technical managers	• Augmenting understanding of central concerns with information about relevant SE topics; e.g., a contracting manager might want to better understand SE deliverables being called out in a contract
3	Attorneys, policy makers	• Defining the impact of SE performance on central concerns; e.g., understanding the liability of a systems engineer for errors in judgment on a project, or the limitations of SE in guaranteeing the success of a project against actions of sponsors, managers, or developers

List of Use Cases

At this time not every class of user has a use case developed. To illustrate the major uses, the following use cases are included:

- Use Case 1: Practicing Systems Engineers. This covers the first set of users from Table 1.
- Use Case 2: Other Engineers. This covers the second and sixth sets of users from Table 1.
- Use Case 3: Customers of Systems Engineering. This covers the seventh set of users from Table 1.
- Use Case 4: Educators and Researchers. This covers the third, fourth, and ninth sets of users from Table 1.
- Use Case 5: General Managers. This covers the sixth and eighth sets of users from Table 1.

While not exhaustive, the use cases show the utility of the SEBoK in various applications and contexts.

References

None.

< Previous Article | Parent Article | Next Article >
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