

# SEBoK Table of Contents

From SEBoK  
SEBoK Table of Contents

## Navigating the SEBoK

The SEBoK may be searched in the same way as a traditional wiki. In addition, navigation links have been added to each page. Please use these links if you would like to navigate the SEBoK sequentially through the table of contents. These links look like:

< Previous Article | Parent Article | Next Article >

- *Previous* - The "Previous" link will take you back one article in the table of contents.
- *Next* - The "Next" link will take you forward one article in the table of contents.
- *Parent* - The "Parent" link takes you up one level in the table of contents. (For topic articles, the "Parent" link will take you to the overarching Knowledge Area (KA). For KA articles, the "Parent" link will take you to the overarching Part.)

---

## Contents

- 1 Part 1
- 2 Part 2
- 3 Part 3
- 4 Part 4
- 5 Part 5
- 6 Part 6
- 7 Part 7

## Part 1

- Part 1: SEBoK Introduction
  - Introduction to the SEBoK
    - Scope of the SEBoK
    - Structure of the SEBoK
  - Introduction to Systems Engineering
    - Systems Engineering Overview
    - Economic Value of Systems Engineering
    - Systems Engineering: Historic and Future Challenges
    - Systems Engineering and Other Disciplines
  - Introduction to SE Transformation
    - Transitioning Systems Engineering to a Model-based Discipline
    - Systems Engineering Core Concepts

- SEBoK Users and Uses
  - Use Case 0: Systems Engineering Novices
  - Use Case 1: Practicing Systems Engineers
  - Use Case 2: Other Engineers
  - Use Case 3: Customers of Systems Engineering
  - Use Case 4: Educators and Researchers
  - Use Case 5: General Managers

## Part 2

- Part 2: Foundations of Systems Engineering
  - Knowledge Area: Systems Fundamentals
    - Topic: Introduction to System Fundamentals
    - Topic: Types of Systems
    - Topic: Complexity
    - Topic: Emergence
    - Topic: Fundamentals for Future Systems Engineering
  - Knowledge Area: Systems Approach Applied to Engineered Systems
    - Topic: Overview of the Systems Approach
    - Topic: Engineered System Context
    - Topic: Identifying and Understanding Problems and Opportunities
    - Topic: Synthesizing Possible Solutions
    - Topic: Analysis and Selection between Alternative Solutions
    - Topic: Implementing and Proving a Solution
    - Topic: Deploying, Using, and Sustaining Systems to Solve Problems
    - Topic: Applying the Systems Approach
  - Knowledge Area: Systems Science
    - Topic: History of Systems Science
    - Topic: Systems Approaches
  - Knowledge Area: Systems Thinking
    - Topic: What is Systems Thinking?
    - Topic: Concepts of Systems Thinking
    - Topic: Principles of Systems Thinking
    - Topic: Patterns of Systems Thinking
  - Knowledge Area: Representing Systems with Models
    - Topic: What is a Model?
    - Topic: Why Model?
    - Topic: Types of Models
    - Topic: System Modeling Concepts
    - Topic: Integrating Supporting Aspects into System Models
    - Topic: Modeling Standards

## Part 3

- Part 3: Systems Engineering and Management
  - Knowledge Area: Introduction to Life Cycle Processes
    - Topic: Generic Life Cycle Model
    - Topic: Applying Life Cycle Processes
    - Topic: Life Cycle Processes and Enterprise Need
  - Knowledge Area: Life Cycle Models

- Topic: System Life Cycle Process Drivers and Choices
- Topic: System Life Cycle Process Models: Vee
- Topic: System Life Cycle Process Models: Iterative
- Topic: Integration of Process and Product Models
- Topic: Lean Engineering
- Knowledge Area: Concept Definition
  - Topic: Business or Mission Analysis
  - Topic: Stakeholder Needs and Requirements
- Knowledge Area: System Definition
  - Topic: System Requirements
  - Topic: System Architecture
  - Topic: Logical Architecture Model Development
  - Topic: Physical Architecture Model Development
  - Topic: System Design
  - Topic: System Analysis
- Knowledge Area: System Realization
  - Topic: System Implementation
  - Topic: System Integration
  - Topic: System Verification
  - Topic: System 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
  - Topic: Measurement
  - Topic: Decision Management
  - Topic: Configuration Management
  - Topic: Information Management
  - Topic: Quality Management
- Knowledge Area: Product and Service 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**

- Part 4: Applications of Systems Engineering
  - Knowledge Area: Product Systems Engineering
    - Topic: Product Systems Engineering Background
    - Topic: Product as a System Fundamentals
    - Topic: Business Activities Related to Product Systems Engineering
    - Topic: Product Systems Engineering Key Aspects

- Topic: Product Systems Engineering Special Activities
- Knowledge Area: Service Systems Engineering
  - Topic: Service Systems Background
  - Topic: Fundamentals of Services
  - Topic: Properties of Services
  - Topic: Scope of Service Systems Engineering
  - Topic: Value of Service Systems Engineering
  - Topic: Service Systems Engineering Stages
- 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
  - Topic: Enterprise Capability Management
- Knowledge Area: Systems of Systems (SoS)
  - Topic: Architecting Approaches for Systems of Systems
  - Topic: Socio-Technical Features of Systems of Systems
  - Topic: Capability Engineering
- Knowledge Area: Healthcare Systems Engineering
  - Topic: Overview of the Healthcare Sector
  - Topic: Systems Engineering in Healthcare Delivery
  - Topic: Systems Biology
  - Topic: Lean in Healthcare

## Part 5

- Part 5: Enabling Systems Engineering
  - Knowledge Area: Enabling Businesses and Enterprises
    - Topic: Systems Engineering Organizational Strategy
    - Topic: Determining Needed Systems Engineering Capabilities in Businesses and Enterprises
    - Topic: Organizing Business and Enterprises to Perform Systems Engineering
    - Topic: Assessing Systems Engineering Performance of Business and Enterprises
    - Topic: Developing Systems Engineering Capabilities within Businesses and Enterprises
    - Topic: Culture
  - Knowledge Area: Enabling Teams
    - Topic: Team Capability
    - Topic: Team Dynamics
    - Topic: Technical Leadership in Systems Engineering
  - Knowledge Area: Enabling Individuals
    - Topic: Roles and Competencies
    - Topic: Assessing Individuals
    - Topic: Developing Individuals
    - Topic: Ethical Behavior

## Part 6

- Part 6: Related Disciplines
  - Knowledge Area: Systems Engineering and Software Engineering
    - Topic: Software Engineering in the Systems Engineering Life Cycle

- Topic: The Nature of Software
- Topic: An Overview of the SWEBOK Guide
- Topic: Key Points a Systems Engineer Needs to Know about Software Engineering
- Topic: Software Engineering Features - Models, Methods, Tools, Standards, and Metrics
- Knowledge Area: Systems Engineering and Project Management
  - Topic: The Nature of Project Management
  - Topic: An Overview of the PMBOK® Guide
  - Topic: Relationships between Systems Engineering and Project Management
  - Topic: The Influence of Project Structure and Governance on Systems Engineering and Project Management Relationships
  - Topic: Procurement and Acquisition
- Knowledge Area: Systems Engineering and Industrial Engineering
- Knowledge Area: Systems Engineering and Specialty Engineering
  - Topic: Reliability, Availability, and Maintainability
  - Topic: Human Systems Integration
  - Topic: Safety Engineering
  - Topic: Security Engineering
  - Topic: Electromagnetic Interference/Electromagnetic Compatibility
  - Topic: System Resilience
  - Topic: Manufacturability and Producibility
  - Topic: Affordability
  - Topic: Environmental Engineering

## Part 7

- Part 7: Systems Engineering Implementation Examples
  - Matrix of Implementation Examples
- Commercial Examples
  - Complex Adaptive Taxi Service Scheduler
  - Complex Adaptive Project Management System
  - Denver Airport Baggage Handling System
  - Global Positioning System Case Study
  - Global Positioning System Case Study II
  - Next Generation Medical Infusion Pump
  - Medical Radiation
  - Successful Business Transformation within a Russian Information Technology Company
- Government Examples
  - FBI Virtual Case File System
  - Design for Maintainability
  - FAA Advanced Automation System (AAS)
  - Federal Aviation Administration Next Generation Air Transportation System
  - How Lack of Information Sharing Jeopardized the NASA/ESA Cassini/Huygens Mission to Saturn
  - Hubble Space Telescope
  - Northwest Hydro System
  - Singapore Water Management
  - Submarine Warfare Federated Tactical Systems
  - Successful Business Transformation within a Russian Information Technology Company
  - UK West Coast Route Modernisation Project
  - Virginia Class Submarine
- Combined Examples
  - Applying a Model-Based Approach to Support Requirements Analysis on the Thirty-Meter

Telescope

- Miniature Seeker Technology Integration Spacecraft
  - Standard Korean Light Transit System Vignette
- 

Go to First SEBoK Article >

**SEBoK v. 2.0, released 1 June 2019**

Retrieved from

"[https://www.sebokwiki.org/w/index.php?title=SEBoK\\_Table\\_of\\_Contents&oldid=55966](https://www.sebokwiki.org/w/index.php?title=SEBoK_Table_of_Contents&oldid=55966)"

---

- This page was last edited on 2 June 2019, at 21:19.

