| **Name** | **Documentation** | **Owner** |
| --- | --- | --- |
| Analysis Model | A model used to analyze the structure, behavior, and/or properties of systems and environments.[12, UML 4SE RFP] | Analysis |
| API | In computer programming, an application programming interface (API) is a set of subroutine definitions, protocols, and tools for building application software. A good API makes it easier to develop a computer program by providing all the building blocks, which are then put together by the programmer. [8, Wiki] | Exchange |
| Base Model Element | A base model element can be a model element from any type of model, e.g. the system model, mechanical model, etc. Example elements from a system model include a requirement, an architectural element, a test case, a multiplicity, and a value property. [1, Created for SECM] | Variants |
| Comment | A Comment is a textual annotation that can be attached to a set of (Model) Elements. [15, UML Spec] | Unassigned |
| Component |  (1) An entity with discrete structure, such as an assembly or software module, within a system considered at a particular level of analysis. (ISO/IEC 1998) (2) One of the parts that make up a system. (IEEE 2008) (3) A set of functional services in the software, which, when implemented, represents a well-defined set of functions and is distinguishable by a unique name. (ISO/IEC 2008)[3, SEBoK Glossary]In systems terms, we use component as the generic term for the level of decomposition at which system elements are no longer considered complex, and for which specialist design disciplines can be used. [3, SEBoK Glossary Discussion] | Structure |
| Concept | An abstraction; a general idea inferred or derived from specific instances. (Oxford Dictionaries Online 2012)[3, SEBoK Glossary] | Unassigned |
| Constraint | A constraint establishes a limitation restriction. It is expressed in the form of a formal expression, e.g. a mathematical expression (including logical expressions), a behavior ( such as Activity diagrams, state diagrams, sequence diagrams), a table, text, etc. | Unassigned |
| Data Model | A Data Model is an abstract model that organizes elements of data and standardizes how they relate to one another and to properties of the real world entities. [8, Wiki]A data model explicitly determines the structure of data. Data models are specified in a data modeling notation, which is often graphical in form.[2][8, Wiki] | Exchange |
| Data Protection Controls | Data Protection Controls are those metadata items associated with managing who can create, read, update and delete model elements. This includes managing access permissions, roles, data rights, and security markings. [1, created for SECM] | Model Mgmt. |
| Function |  (1) A system outcomes which contribute to goals or objectives. To have a function, a system must be able to provide the outcome through two or more different combinations of elemental behavior. (Ackoff 1971) (2) An action, a task, or an activity performed to achieve a desired outcome. (Hitchins 2007) (3) A broad work area encompassing multiple related disciplines (e.g., Engineering, Finance, Human Resources, etc.). (Created for SEBoK) (4) A function is defined by the transformation of input flows to output flows, with defined performance. (Created for SEBoK)[3, SEBoK Glossary] | Structure |
| Interface |  1. A shared boundary between two functional units, defined by various characteristics pertaining to the functions, physical signal exchanges, and other characteristics. (ISO/IEC 1993) 2. A hardware or software component that connects two or more other components for the purpose of passing information from one to the other. (ISO/IEC 1993)  3. To connect two or more components for the purpose of passing information from one to the other. (ISO/IEC/IEEE 200)[3, SEBoK Glossary] | Interface |
| Language Bindings | In computing, a binding from a programming language to a library or operating system service is an application programming interface (API) providing glue code to use that library or service in a particular programming language.[8, Wiki] | Exchange |
| Link | d :  an identifier attached to an element (as an index term) in a system in order to indicate or permit connection with other similarly identified elements ; especially :  one (as a hyperlink) in a computer file [11, Merriam-Webster] | Exchange |
| Machine-readable Data | Machine-readable data is data (or metadata) which is in a format that can be understood by a computer. [8, Wiki] | Exchange |
| Metadata | Metadata is "data [information] that provides information about other data". [8, Wiki] | Unassigned |
| Model |  (1) A physical, mathematical, or otherwise logical representation of a system, entity, phenomenon, or process. (DoD 1998) (2) A representation of one or more concepts that may be realized in the physical world. (Friedenthal, Moore, Steiner 2009)[3, SEBoK Glossary] | Structure |
| Model Element | An Element is a constituent of a model. [16, UML Spec]A model element includes items such as entities, relationships, properties, behaviors, multiplicities, comments, model organizational elements, etc. In the UML modeling language this is referred to as an "Element". [1, created for SECM]Because of the extensive use of the word "Element" in Systems Engineering the word "Model" was added to this term so as to express more specifically its intended use. [1, created for SECM] | Structure |
| Model Library | A library is a collection of sources of information and similar resources, made accessible to a defined community for reference or borrowing. [8, Wiki] A model library contains a collection of model elements.  | Structure |
| Model Metadata |  Metadata is "data [information] that provides information about other data". [1] [8, Wiki]Model Metadata provides information about Model Elements, e.g., owner, comments, versions, and status. [1, created for SECM] | Model Mgmt. |
| Model Pattern |  (1) An expression of an observed regularity. (Alexander 1979) (2) A representation of similarities in a set or class of problems, solutions, or systems. (Alexander 1979) (3) Each pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice. (Alexander 1979)[3, SEBoK Glossary]A Model Pattern is expressed utilizing model elements. [1, created for SECM] | Structure |
| Model Transformation | A mapping between two modeling languages that enables a model expressed in one modeling language to be expressed in whole or in part in the other modeling language. (Created for SEBoK) [3, SEBoK Glossary] | Exchange |
| Model Validation | The process of ensuring the model correctly represents the domain or system-of-interest. (Friedenthal 2009) [3, SEBoK Glossary] | Model Mgmt. |
| Notification | 1 :  the act or an instance of notifying [11, Merriam-Webster]Examples include change notifications, task notifications, release notifications, etc.  | Workflow |
| Platform Independent Model | A platform-independent model (PIM) in software engineering is a model of a software system or business system that is independent of the specific technological platform used to implement it. [8, Wiki] | Structure |
| Query | A precise request for information retrieval with database and information systems. [8, Wiki] A Model query operates on the data contained in a model. [1, created for SECM] | Exchange |
| Query Language | Query languages are computer languages used to make queries in databases and information systems. [8, Wiki] | Exchange |
| Reference Model | A reference model in systems, enterprise, and software engineering is an abstract framework or domain-specific ontology consisting of an interlinked set of clearly defined concepts produced by an expert or body of experts in order to encourage clear communication. A reference model can represent the component parts of any consistent idea, from business functions to system components, as long as it represents a complete set. This frame of reference can then be used to communicate ideas clearly among members of the same community. [8, Wiki] | Structure |
| Relationship | The way in which two or more people or things are connected. [11, Merriam-Webster on-line]Google definition:The way in which two or more concepts, objects, or people are connected, or the state of being connected. | Unassigned |
| Service | A service is a discrete unit of functionality that can be accessed remotely and acted upon and updated independently, such as retrieving a credit card statement on-line.A service has four properties according to one of many definitions of SOA: It logically represents a business activity with a specified outcome. It is self-contained. It is a black box for its consumers. It may consist of other underlying services.[8, Wiki, Service-oriented architecture] | Exchange |
| Structured Data | Structured data refers to information that has a high level of organization such as in a pre-defined data model, images, lists, spreadsheets, relational databases, etc. Structured data is data that has been organized into a formatted repository so that its elements can be made addressable for more effective processing and analysis. [Derived from WhatIs.com, 29 Nov 2016, http://whatis.techtarget.com/definition/structured-data].  | Exchange |
| SysML | The OMG Systems Modeling Language (OMG SysML™) is a general-purpose language for systems engineering applications.SysML supports the specification, analysis, design, verification, and validation of a broad range of complex systems.These systems may include hardware, software, information, processes, personnel, and facilities. [16, derived from SysML spec] | Exchange |
| System | (1) A set of elements in interaction. (von Bertalanffy 1968)(2) combination of interacting elements organized to achieve one or more stated purposes (ISO/IEC/IEEE 15288:2015)[3, SEBoK Glossary] | Structure |
| System Analysis | A systematic investigation of a real or planned system to determine the information requirements and processes of the system and how these relate to each other and to any other system. (ISO/IEC/IEEE 2009) [3, SEBoK Glossary] | Analysis |
| System Element | A member of a set of elements that constitutes a system. A system element is a discrete part of a system that can be implemented to fulfill specified requirements. A system element can be hardware, software, data, humans, processes (e.g., processes for providing service to users), procedures (e.g., operator instructions), facilities, materials, and naturally occurring entities (e.g., water, organisms, minerals), or any combination. (ISO/IEC 15288:2015) [3, SEBoK Glossary] | Structure |
| System Model |  (3) A simplified representation of a system at some particular point in time or space intended to promote understanding of the real system. (Bellinger 2004) (4) An abstraction of a system, aimed at understanding, communicating, explaining, or designing aspects of interest of that system (Dori 2002) (5) A selective representation of some system whose form and content are chosen based on a specific set of concerns. The model is related to the system by an explicit or implicit mapping. (Object Management Group 2010)[3, SEBoK Glossary] | Structure |
| UML | The objective of the Unified Modeling Language (UML) is to provide system architects, software engineers, and software developers with tools for analysis, design, and implementation of software-based systems as well as for modeling business and similar processes. [15, UML] | Exchange |
| Validation Rule | A Validation rule is a criterion or constraint used in the process of data validation, carried out after the data has been encoded onto an input medium and involves a data vet or validation program.[8, Wiki] | Analysis |
| Variability Constraint | A variability constraint constrains the combination of variants. [1, Created for SECM] | Variants |
| Variability Model | A model that captures the desired variabilities and constraints for a set of system configurations. [1, Created for SECM] | Variants |
| Variant | A variant (or option) represents a choice that realizes a particular variation point (or feature). A variant can include additional variation points. [1, Created for SECM] | Variants |
| Variant Binding | A variant binding binds a base model element to a variant [1, Created for SECM] | Variants |
| Variation Point | A variation point represents a characteristic (or feature) that can vary from one entity to another. [1, Created for SECM] | Variants |
| View | A representation of a system from the perspective of a viewpoint. (OMG 2010)[3, SEBoK Glossary] | Visualization |
| Viewpoint | A viewpoint is a specification of the conventions and rules for constructing and using a view for the purpose of addressing a set of stakeholder concerns (OMG 2010)[3, SEBoK Glossary] | Visualization |
| Workflow | A workflow consists of an orchestrated and repeatable pattern of business activity enabled by the systematic organization of resources into processes that transform materials, provide services, or process information. [8, Wiki] | Workflow |

# Bibliographic Citation List

References and citations are shown in the glossary definition text as a number within square brackets.

1. Created for SECM.
2. INCOSE. 2011. INCOSE Systems Engineering Handbook, Version 3.2.2. San Diego, CA, USA: International Council on Systems Engineering (INCOSE), INCOSE-TP-2003-002-03.2.2.
3. BKCASE Editorial Board. 2015. The Guide to the Systems Engineering Body of Knowledge (SEBoK), v. 1.5. R.D. Adcock (EIC). Hoboken, NJ: The Trustees of the Stevens Institute of Technology. Accessed DATE. [www.sebokwiki.org](http://www.sebokwiki.org). BKCASE is managed and maintained by the Stevens Institute of Technology Systems Engineering Research Center, the International Council on Systems Engineering, and the Institute of Electrical and Electronics Engineers Computer Society.
4. International Standard - ISO/IEC 15288 and IEEE 15288 - 2008, Second Edition 2008-02-01, Systems and software engineering - System life cycle processes
5. ISO/IEC 2008. Systems and Software Engineering -- System Life Cycle Processes. Geneva, Switzerland: International Organization for Standardization / International Electromechanical Commissions. ISO/IEC/IEEE 15288:2008 (E).
6. Wikipedia: Safety: Mar 31, 2015: <http://en.wikipedia.org/wiki/Safety#Safety_measures>
7. Douglas, Bruce: Safety Analysis of UML Models
8. Wikipedia. Main Page. Mar 31, 2015. <http://en.wikipedia.org>
9. Roedler, G.J. and Jones, C. December 27, 2005. Technical Measurement, Version 1.0, Practical Software and Systems Measurement (PSM) and International Council on Systems Engineering (INCOSE). INCOSE-TP-2003-020-01
10. INCOSE (2015). Systems Engineering Handbook: A Guide for System Life Cycle Process and Activities (4th ed.) D. D. Walden, G. J. Roedler. K. J. Forsberg, R.D. Hamelin, and, T. M. Shortell (Eds.). San Diego, CA: International Council on Systems Engineering. Published by John Wiley & Sons, Inc.
11. Merriam Webster on-line dictionary
12. UML 4SE RFP. SE Definitions List, April 01 2003: <http://syseng.omg.org/UML%20for%20SE%20Definitions%20030401.xls>
13. Business Dictionary.com - <http://www.businessdictionary.com/>
14. INCOSE. 2015. Guide for Writing Requirements. Version 2, San Diego, CA, USA: International Council on Systems Engineering (INCOSE), INCOSE-TP-2010-006-02.
15. OMG Unified Modeling Language ™ (OMG UML), Version 2.5, March 2015, OMG Document Number - formal/2015-03-01
16. OMG Systems Modeling Language (OMG SysML™), Version 1.4, September 2014, OMG Document Number: formal/2015-06-03
17. ISO Online Browsing Platform (OBP), Terms and Definitions, [https://www.iso.org/obp/ui/#home](https://www.iso.org/obp/ui/%22%20%5Cl%20%22home)
18. Weilkiens, Tim: Variant Modeling with SysML, MBSE4U - Tim Weilkiens, Apr 12 2016, ISBN 978-3-9817875-4-2