Software Engineering Body Of Knowledge Book Knowledge Area-1 includes information detailing the process of collecting and analyzing Software Requirements. The guide describes fundamental definitions and then goes in the detail about the Process of elicitation, analysis, specification and validation of software requirements. The area of “Software Requirements” and how it applies to the real world projects is one of the most vital parts of Software Engineering. It is imperative that the software engineer has proper understanding of the process of requirement collection and analysis, since the success of every step that follows will depend on the accuracy of the those requirements.

Every software project starts with communication between customer or market analysts where the real-world problem or at least the goal of the software will be defined. Majority of requirements are the collected through farther interviews, meetings and other requirement elicitation techniques. After requirements are collected they should be rigorously analyzed and then classified according to scale of importance. Conceptual Modeling is then used further understand the problem. UML is commonly utilized in Conceptual modeling. Software engineer then should be able to identify components that will be responsible for satisfying the requirements; this will permit further analysis of individual requirements and components. When conflicts in requirements arise (such as mutually incompatible features) the software engineer should be able to negotiate trade-off with the customers to eliminate the conflicts before specifying formal requirements.

The System Definition document may be written to show the user requirements, define the problem, background, context and user scenarios. This document may be used as a general description of a system. The requirements for the software need to be specified in a separate document so that they can serve as the basis for development agreement between customers and development team. The resulting Software Requirement document should define requirements in a precise and concise manner using semi-formal or formal notation and terminology. This document should not be too open to interpretation, and should not have ambiguous definitions. After specifying the requirements , the review of the document must be performed by the development group and customer or customer representatives. Upon successful completion of the reviews of the requirements specifications, the prototyping of the system can start. Prototyping of the software will validate the understanding of project by software engineer. Before Software Design can start, the validation of the model developed during analysis should be performed, and acceptance test of the specified requirements should be developed.

SWEBOK than details some of the more practical aspects of software requirements specifications, for example, a failure to specify requirements, and the way requirements evolve and change during the design and development process. When requirement needs to be changed or modified, it is useful to be able to trace requirement to the origin, keep track of the requirements and their changes by their relative importance, and be able to effectively measure the changes of the requirements in volume or size.

