

## **My understanding of SQA**

Before talking about my awareness and understanding of software quality assurance, firstly there is some need to make the concept of software quality clear. The measure of software quality means that high-quality software can be delivered to the customer on time, the cost does not exceed the budget, and most importantly, the software system should be able to run normally. "Run normally" means that you should possibly make sure the software can run without any defects. Software requirements are the basis to metric the quality of software, and the quality is not well if the software doesn't meet the requirement. Meanwhile, the cost and time to complete the project should be within the plan. The software products should be reliable and maintainable.

Software quality assurance (SQA) consists of a means of monitoring the software engineering processes and methods used to ensure quality. The methods by which this is accomplished are many and varied, and may include ensuring conformance to one or more standards, such as ISO 9000 or a model such as CMMI. SQA encompasses the entire software development process, which includes processes such as requirements definition, software design, coding, source code control, code reviews, change management, configuration management, testing, release management, and product integration. SQA is organized into goals, commitments, abilities, activities, measurements, and verifications.

SQA is designed to make the software process visible to supervisor. By reviewing and auditing software products and activities, QA can verify that if the software is up to standard. In the phase of requirements analysis, the goal of SQA is to ensure the system customer requires is feasible, and ensure specified requirements of customer can really meet his real requirements, to avoid misunderstanding between developers and customers, to provide customers appropriate software system that meets the needs. In the phase of design, the goal of SQA is to ensure that the established criteria used to describe the design, properly control and record the changes of the design. In the phase of coding, SQA's goal is to ensure that the code has been established to follow style, structure and documentation standards, the code has been properly tested and integrated, and modifications of code are properly identified. QA should check whether the coding work follows the established schedule, and ensure that code review conducted according to schedule. During the phase of testing, SQA's goal is to ensure the creating and establishment of the test plan to meet all system requirements specification. In the phase of maintenance, SQA's goal is to ensure the consistency of code and document. Ensure the process of change is monitored, including process of changes that integrated into the software product. To ensure that changes to the code to follow coding standards, and to make code review.

Finally, the definitions and responsibilities of QA and QC often confuse a lot of people. The duties of QC were to test the quality of the product, to ensure that products meet customer demand. The duties of QA are to audit the quality of the process, and ensure that the process is executed correctly, is an auditor of process. Under this principle of division of labor, QA inspect if an activity is carried out in accordance with the process or not, if a product is completed on time. While QC need to check if the product meets the quality requirements.