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Software Requirement Reliability Metrics for Risk Assessment.

Abstract

There are a number of criteria for measurement of quality. Two of the most important of these are Validity and Reliability [1]. Validity defines whether the measurement or metric really measures what it should be measuring. In other words, it refers to the extent to which an experimental base measurement reflects the real meaning of the concept under consideration. Reliability refers to the consistency of a number of measurements taken using the same measurement methods on the same subjects.

Software Reliability is not as well defined as Hardware reliability, but now Software Engineers are working to promote the concept of Reliability in software products. This thesis presents the requirement reliability metrics for risk assessment. These metrics could help to quantify requirements using quality attributes impacting on reliability that help to analyze possible risk in software.

In this thesis, I have presented requirement reliability metrics that could help to measure requirements in analysis phases & its results shows reliability factors associated with requirements. If results show inconsistency in requirements that mean reliability is low and probability of risk is high and if result shows consistency in requirement is high that means requirement reliability is high and risk associated with requirement is low. If Requirement Reliability is high then effort estimation and project planning is ultimately less risk and development can be started as per project plan and if Requirement Reliability is not consistence and shows high variation then there impact will increasing CR (Change Request), and due to indefinite number of requirement changes effort estimation and project planning could not shows real picture of project, project baselines are always suffer. Software designing continuously impact due to changes in requirement and if code development will parallel start probabilities of different releases will be increase.

This metrics also helps to provide information's like where efforts will be increase, where time is not predictable, when development and design phases will be start. And its also provide helps to upgrade risk mitigation and assessment strategies, Traditional strategy of risk mitigation and assessment is based on previous experiences or organization standards. Due to requirement reliability metrics we upgrade over risk mitigation and assessment strategies on bases of current sionorios.