

Surveying the Usability of Requirements Approaches using a 3-Dimensional Framework

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Abstract

Many problems in software development originate from requirements problems. Software is often late, does not meet requirements, or is costly because of expensive fault repairing. Software engineering researchers have developed a wide range of requirements approaches to address these challenges [10, 12, 14, 15, 18, 20, 21, 24, 31, 49], but it has been shown that many software development companies do not use these “textbook approaches” [7].

This survey describes a framework for evaluating the usability and usefulness of requirements engineering approaches. The evaluation framework focuses on three essential characteristics: clarity, testability, and ease of artifact manipulation. These three dimensions are decomposed into a set of sub-questions with corresponding metrics that can be used to assign scores for each evaluated requirements engineering approach. The survey evaluates twelve requirements approaches using the framework. The results show that none of the surveyed requirements approaches fulfill all three characteristics well. The survey concludes with a discussion of the results and directions for future research in requirements engineering.