Quantitative Metrics for Requirements Quality

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***Abstract*—Question "how to measure quality of requirements?" remains problematic due to its subjectivity.**

In this paper we present various quantitative metrics for assessing the quality of requirements based assuming a relation between the requirements quality and changes of the requirements. Here we consider the corrections in requirements document done within requirements engineering (RE) and software development (SD) stages, and their influence on the time for development process.

The suggested metric takes into account a maturity of the requirements and reflects its leverage on the product, resulting in a number from 0 (bad) - 1 (good) for quality assessment.

I. Introduction

A. Problem

Still the question about quality of requirements remains problematic [1]. "How to measure the quality of requirements?" is a subjective question, because there is a few quantitative metrics for measure the quality of requirements. All of them are looking on intrinsic words of requirements and, therefore, depend on their statement.

B. Contribution

Here we present various quantitative metrics for assessing the quality of requirements based assuming a relation between the requirements quality and changes of the requirements. Comparing with existing approaches, discussed in section section III, our method considers a relation between quality of requirements and the resulted product measuring number of changes and time-consumption during RE and SD phases. Here we consider the corrections in requirements document done within requirements engineering (RE) and software development (SD) stages [2], and their influence on the time for development process. The suggested metric takes into account a maturity of the requirements and reflects its leverage on the product, resulting in a number from 0 (bad) - 1 (good) for a quality assessment. A developed system, which has passed an acceptance test by a customer, is considered as a baseline for a resulting product. That stands, the proposed metric for requirements quality can be applied after a project completion and serves as a method for assessment in research works.

The presented approach is planned for measuring quality of requirements in our current study regarding requirements categorization and its impact on a system development life cycle.

II. Metrics

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III. RelatedWork

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IV. Conclusion

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References

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