Quantitative Metrics for Requirements Quality

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

In this paper we present various quantitative metrics for assessing the quality of requirements assuming a relation between requirements quality and maturity of requirements i.e. number of changes in requirements document. We consider the number of corrections in requirements document done within requirements engineering (RE) and implementation stages; and their influence on the time for development process.

The proposed metrics are usable to assess the quality of requirements only after project completion. This method is a good tool for empirical studies.

I. Introduction

A. Problem

The question about quality of requirements remains problematic [1]: "How to measure the quality of requirements?" is a subjective question. There are only few quantitative metrics to measure the quality of requirements. All of them are looking at intrinsic characteristic of requirements and, therefore, depend on their statement.

B. Contribution

We present various quantitative metrics for assessing the quality of requirements 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 implementation phases. We consider the corrections in requirements document done within requirements engineering (RE) and implementation stages [2], and their influence on the time for development process. The suggested metrics take 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 the resulting product. Importantly, the proposed metrics are usable to assess the quality of requirements only after project completion.

The presented approach can be considered for empirical studies. The presented metrics are planed for measuring the quality of requirements in our current study regarding requirements categorization.

II. Metrics

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III. Related Work

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IV. Conclusion

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References

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