

INTRODUCTION

- Modern electronics devices or products are evolved drastically with embedded software.
- In order to meet the time to market requirements, Virtual Prototypes (VPs) are used as one of the vital vehicle for pre-silicon validation.
- One of the most challenging success criteria for deploying integrated VP platform is the overall quality of VP across vectors like performance/speed, memory footprint, functional completeness, maintainability and reliability.
- In this poster, we will demonstrate how to improve VP quality.

OBJECTIVES

The characteristics of Software Quality model - CISQ (Consortium for IT Software Quality) [1] is taken as basis for ensuring the VP quality improvement methodology:

1. Reliability
2. Efficiency
3. Security
4. Maintainability

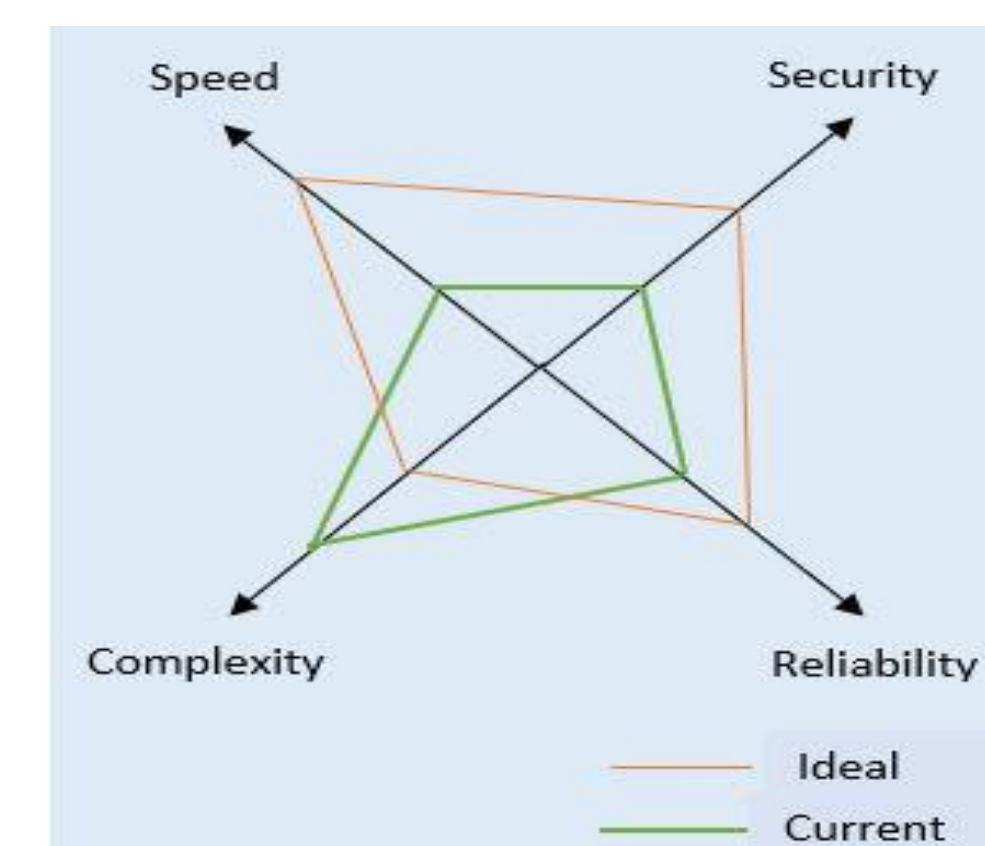


Fig.1: Ideal vs Current quality measures

PROPOSED SOLUTION

Phase 1: Code Review

1. Check code with peers (for algorithm complexity, portability and security)
2. Efficient programming (remove dirty programming, dead code. Follow coding guidelines)

Phase 2: VP Quality Check

1. Functional completeness
2. Memory management
3. Analysing design
4. Source code complexity

PROPOSED SOLUTION

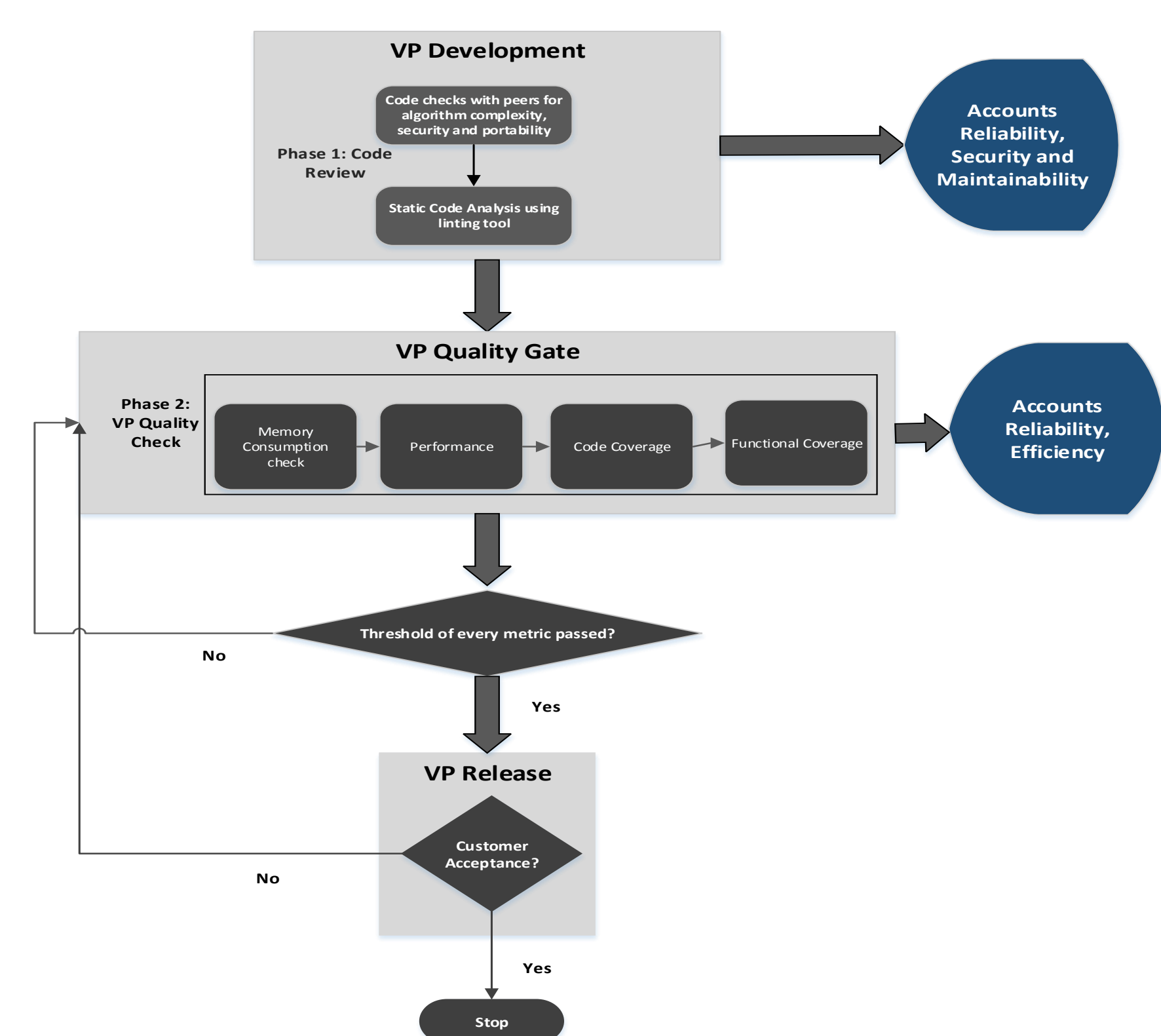


Fig.2: Workflow for enhancing the Quality of VP

CONCLUSIONS

- In this poster, we have considered CSIQ software characteristics for improving quality of VP. We considered how we can apply Reliability, Performance efficiency, Security and Maintainability for particular VP to achieve quality.
- We can use different tools (either in-house developed or available in market) to achieve all 4 characteristics. There are many tools available in market.
- The approach suggested in flow diagram will result in customer oriented VP, Quality product.
- This methodology will yield several order of improvement in VP quality and ensure VPs are first time right.

REFERENCES

- [1] Software Quality CSIQ model: https://en.wikipedia.org/wiki/Software_quality

We would like to acknowledge Bharat Singh for motivating us to work towards innovative work.

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