Dear editor

We are submitting the article “Modular Verification of SPARCv8 Code” as a regular paper in “Special Section on Software System 2020” of Journal of Computer Science & Technology. The theme that our submission is intended to is “Dependable Software Engineering”.

This paper is an extended version of a conference paper, which was published in the Proceedings of 2018 Asian Symposium on Programming Languages and Systems (APLAS’18), pp. 245-263. The conference version presents a program logic to verify partial correctness of SPARCv8 code, but it doesn’t support refinement verification. In this paper, we extend the conference paper and propose a new program logic to do relational reasoning for refinement verification. We also use the new logic to verify the implementation of a context switch routine, by showing that the implementation code contextually refines an abstract switch primitive. In order to support refinement verification, this article also presents a new Pseudo-SPARCv8 language as the language to implement the high-level specification.

All authors have seen the manuscript and approved to submit it to your journal.

Thank you for your consideration of our work.

With best regards,

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