

Responses to Reviewers' Comments

for paper titled
Progress Concerns as Design Guidelines
by
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Thanks We are in debt to the anonymous reviewers for their constructive comments of the paper. We have updated our paper accordingly and addressed the reviewers' concerns. Below are the summary of our updates with regards to the reviewers' comments.

Reviewer #1: 1. The availability of the proof-rules

In Section 5 (Conclusion), the authors say that "We expect to have more refinement rules to complement the current set of rules." So, it would be better to explain how powerful the proof-rules currently given in Theorems 1-6 are. For example, the assumptions in Theorems 6 and 7 are sufficient conditions, but are not necessary. Therefore, if an example which cannot be proved by the current rules is shown, it would be good information for readers. If current rules are already powerful enough to prove most of practical cases, it should be briefly stated.

Note: this comment does not request to construct the sound and complete rules. The reviewer also think that it is important to give some useful and practical rules, as given in this paper.

Response: We mentioned that the rules are sufficient for us to develop several examples of different size.

Reviewer #1: 2. Typos etc.

Response: The typos have been fixed. Thank you very much.

Reviewer #1:

(5) P.5, L.-11:

```
"... => X; s.t.e.v">
==> "... => X; s.t.e.v'>"
```

Response: v is correct. The fresh variable e stores the before value v and v in $s.t.e.v$ represents the current (after) value of v .

Reviewer #2: One point: I was mystified by the title. Indeed the paper does not really seem to offer Design Guidelines at all.

Minor typos:

Pg 1: VMD -> VDM

Pg 2: allows them to evolve -> allowing them to evolve; set of computation predicate $CPred$ -> set of computation predicates $CPred$

Pg 3: Two contact E,F -> Two constants E, F

Pg 5 Section 3.1: t is stands for -> t stands for; Vice versa, if an event -> Vice versa, an event; All computations of a model starts -> All computations of a model start.

Pg 7: in Unit-B is by using the transient operator -> in Unit-B is the transient operator

Pg 10: conductors -> drivers

Pg 13, paragraph beginning We want to This was a slightly confusing discussion, because of the amount of infinitely oftens going on. Can you try to clarify?

Formatting: remove the coloured cross-references for the printed version.

The paper is over length. Please dont cut the conclusions (which are useful). I would try condensing the initial presentation of the example (put the assumptions in a table, maybe? Condense the proof of Theorem 2 as well?

Reviewer #3: There is a lot in the paper. There is significant depth in the technical detail and sometimes it would have helped the reader to have some illustrating examples as we went through the paper. It is very important on page 5 to understand (14) before moving on. It was not so clear whether c in the c.t.v was a Cpred. An example is needed by the time we get to section 3.1.

We should say that g, c, f are state predicates. Slipping in some examples will cause some problem with the size of the paper.

Reviewer #3: Minor typos
The typos have been fixed. Thank you very much.

Reviewer #3:

Page 3 Defn 6 For all predicates

Page 3 Defn 8 For all state predicates

Response: Changed to *For any predicate* or *For any state predicate* (globally).

Reviewer #3:

ASM 1 There is one

ASM 4 There is a light

Response: *There is/are* here are both acceptable. I changed to the reviewers' comments.