Dear editor, please find below our response to the reviewers' comments and suggestions. The changes of the text are marked in a file called "trackedchanges".

Ad reviewer 1, Guzman

Concerning the standardization of the filter paper and serum assays:
The methodology of reconstituting serum from filter papers was used previously in other studies including a measles seroprevalence study in the Sudan. In this manuscript we chose to present the raw data and not to standardize the results, also because the raw data were used to construct the linear mixed affects model. We had already looked at the possibility of using a conversion factor. Indeed others have used conversion factors and this might work well if there would be a strong linear relationship between serum and filter paper index values. Unfortunately, as we already indicated in the text, in this study that relation was poor. We added to the text that applying such a conversion factor did not improve the agreement. We trust that this improves clarity on this point.

About the suggestion for presenting data:
In this study we chose to apply a comprehensive statistical technique which maximizes the statistical power. We chose to use mixed effects model on the raw numeric data. Making subgroups would yield less statistical power.

About presenting data in two manuscripts: we feel that by following the other suggestions of shortening and clarifying this manuscript, we can offer the reader attractive information in one condensed paper.

About the storage temperature of filter papers. In this study we aimed to test the validity of using filter papers under conditions which preclude collecting and storing serum. In Vietnam, that implies primary health facilities which often do not have electricity. We have emphasized this aspect of testing in a real life setting in the text. In addition, we paid much attention to keeping the filter papers dry and this may have contributed to their quality.

Ad "Paragraph 5: ...": references have been added.

Ad "Objective : ....": Indeed the text was confusing, the result of a poor attempt to compensate for the possibility of crossreaction with other flavivirusses with this ELISA. We appreciate the comment and have clarified this in the text and specify the aspect of cross reactivity.

Ad "Figure 1 shows ....": We chose to classify case with a significant increase of IgG but without detectable IgM on week 3 as acute secondary dengue. The text has been clarified, supported by references.
Ad reviewer 2, Huang:

Major comments:
Ad 1 and 2: The reviewer correctly indicates that our text needs extra nuances. This has been done.
AD 3.: See our answer to reviewer 1. The text has been clarified on this point.
Ad 4.: The Focus assay, which is similar to the previous MRL assay, is often used in a quantitative fashion. To our knowledge the text in the WHO guidelines was also based on expertise with the MRL assay. The fourfold increase is important when comparing sequential dilution titers, because errors in such a semi-quantitative tests behave differently from OD-values. This for example is illustrated by the small intraindividual variability of the IgG values shown in figure 2. Thus, initially we chose to use a two fold increase of IgG, which can be defended from a statistical point of view. However, adhering to convention we reclassified the data using a fourfold increase. That does not introduce great differences and has no consequences for the conclusion. The text has been modified on this point.

Ad "(3) For those ....": also see the reponse to reviewer 1; Indeed this category is a difficult group. However, since IgM is not always detected in acute secondary dengue, the majority of the cases in this group are indeed dengue infections. We have added a note to the legend of the figure.

Ad "5. Page 15, line 2 ....": in a country like Vietnam, where transmission is continuously high, dengue makes up 30% of the causes of uncomplicated fevers. Complicated dengue usually comes in waves. In this context, public and curative health services are most interested in detecting these waves so that case management can be improved (capacity for saline infusions, PCV measurement etc.). We have adapted the text to clarify our point of view.

Ad " 6. P3, Background, ....": the reviewer's suggestion was accepted in gratitude.

Ad " 7. P12, Discussion....": We agree with the reviewer that techniques can always be improved. In this study we tried to quantify the limitations of using a commercially available test kit following manufacturer's instructions after transfer of the technology from a specialized virological center to a routine laboratory in an endemic area. The data confirm that the technology has been transferred properly, but that other types of error can be discerned.

In general, the text has been shortened, the table which compared the diagnostic classification by the two laboratories was omitted and only the classification algorithm and only the scatter plots of filter paper by serum results were kept. The essential information from the omitted table and figures is incorporated in the text.

We trust that our manuscript has improved by following the reviewers' suggestions and hope that you can agree with us.