



**SDI Review Form 1.6**

**PART 1:**

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| Journal Name:            | <b><u>British Journal of Applied Science &amp; Technology</u></b>                 |
| Manuscript Number:       | <b>2013_BJAST_5084</b>                                                            |
| Title of the Manuscript: | <b>Machine Learning Optimisation for Realistic 2D and 3D PET-CT Phantom Study</b> |
| Type of the Article      | <b>Research Paper</b>                                                             |

**General guideline for Peer Review process is available in this link:**

**(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)**

- This form has total 7 parts. Kindly note that you should use all the parts of this review form.



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### PART 2: Review Comments

|                                     | Reviewer's comment                                                                                                                                                                                                                                                                                                                          | Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Compulsory</b> REVISION comments | <p><b>The main objective of the study is not evident, what should the network output identify (evaluate) from experimental phantom datasets?</b></p> <p><b>The evaluation of experiments should be improved and clearer. What is the method of the classification (evaluation) of datasets and absolute relative error calculation?</b></p> | <p>We thank the authors for their comments.</p> <p>The network output identifies the region of interest (which is the combined spheres cross section in the phantom data sets). The proposed methodology has shown promising results and can successfully classify and quantify the required region of interest. The text has been amended to reflect this.</p> <p>The evaluation of the proposed network has been performed by calculating the PET combined sphere cross section to the rest of the slice area ratio and then comparing it to the original phantom real value by using absolute relative error which is explained in the text.</p> <p>All these questions are clarified in the last paragraph of the intro and also in the results section. We believe these corrections address the reviewers concerns.</p> |
| <b>Minor</b> REVISION comments      | <p><b>Some abbreviations (e.g. NEMA IEC) are not explained.</b></p>                                                                                                                                                                                                                                                                         | <p>The explanation has been included.<br/>National Electrical Manufacturers Association (NEMA)<br/>International Electrotechnical Commission (IEC)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



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| <b><u>Optional/General</u></b> comments | <b>There could be presented experiments with a real medical human data processing.</b> | <p>We intend to follow this phantom study when published with a real clinical study.</p> <p>To proceed with real patients we need to validate study methodology with a publication using realistic phantom data to optimise the ANN structure to make ethical approval of this future study more likely.</p> <p>Also in real patients the true size of organs are rarely known with precision and the current study will help to understand limitations.</p> |
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