A Sample Article Using `quarto-ieee` for IEEE Journal and Transactions

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Abstract—This document describes the most common article elements and how to use the **quarto-ieee** class with LaTeX to produce files that are suitable for submission to the IEEE. **quarto-ieee** can produce conference, journal, and technical note (correspondence) papers with a suitable choice of class options.

Index Terms—IEEE, IEEEtran, journal, template

I. INTRODUCTION

THIS file is intended to serve as a "sample article file" for IEEE journal papers produced under LaTeX using `IEEEtran.cls` version 1.8b and later. It is based on `bare_jrnl_new_sample4.tex` provided by IEEE Publication Technology, Staff and available from https://template-selector.ieee.org/. The most common elements are covered in the simplified and updated instructions in `New_IEEEtran_how-to.pdf`. For less common elements you can refer back to the original `IEEEtran_HOWTO.pdf`. It is assumed that the reader has a basic working knowledge of LaTeX [1] and of (Pandoc/Quarto)-markdown [2], [3] markup.

II. THE DESIGN, INTENT, AND LIMITATIONS OF THIS TEMPLATES

The `quarto-ieee` templates are intended to **approximate the final look and page length of the articles/papers** either in PDF output or HTML output. **They are NOT intended to be the final produced work that is displayed in print or on IEEEXplore®**. They will help to give the authors an approximation of the number of pages and layout that will be in the final version.

Although most of the LaTeX and `IEEEtran.cls` commands and environment are supported, there are some limitations when trying to export to a format other than PDF (e.g. HTML output).

III. SOME RANDOM TEXT

For some of the remainder of this sample we will use dummy text to fill out paragraphs rather than use live text that may violate a copyright.

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Unknown affiliation

John Doe is with Anonymous University

2) Theorems, Proofs and Remarks: To include a reference-able theorem, create a div with a `#thm-` label. A theorem name is specified via the first heading in the block. For example:

Theorem IV.1 (Line). *The equation of any straight line, called a linear equation, can be written as:*

$$y = mx + b$$

The theorem is cross-referenced as Theorem IV.1.

There are a number of theorem variations supported by Quarto, each with their own label prefix:

- `#thm-` for Theorem;
- `#lem-` for Lemma;
- `#cor-` for Corollary;
- `#prp-` for Proposition;
- `#cnj-` for Conjecture;
- `#def-` for Definition;
- `#exm-` for Example;
- `#exr-` for Exercise.

The `proof`, `remark` and `solution` environments generally receive similar typesetting as theorems. However they are not numbered (and therefore cannot be cross-referenced). To create these environments just use them as the class name of a div such as:

Solution (The solution). An example of solution environment.

3) Figures: It is recommended to use div block with `#fig-` label to embed your Figures.

Fig. 1: An example of figure.

The figures is cross-referenced as Fig. 2 and even the sub-figures as Fig. 2b.

Remark. There is no markup for double-column floating figures. The only workaround is to change the environment of the `knitr` chunk option with `#| fig.env: figure*`.

4) Tables: For tables produced by executable code cells, include a label with a `#tbl-` prefix to make them cross-referenceable. For example (same as the one provided by Quarto documentation):

See Table I. See Table II for details, especially Table IIb.

| (a) | (b) |

Fig. 2: An example with sub-figure.

Table II: Main Caption

(a) First Table			(b) Second Table		
Col1	Col2	Col3	Col1	Col2	Col3
A	B	C	A	B	C
E	F	G	E	F	G
A	G	G	A	G	G

V. CONCLUSIONS

The conclusion goes here.

APPENDIX
AN APPENDIX

Use `[]{.appendix options="An Appendix"}` markup if you have a single appendix. `IEEEtran` state that to do not use `\section{}` anymore after `\appendix`.

[1] F. Mittelbach and U. Fischer, *The LaTeX companion*, 3rd ed. Addison Wesley Professional, 2023.

[2] J. MacFarlane, A. Krewinkel, and J. Rosenthal, "Pandoc." [Online]. Available: https://github.com/jgm/pandoc

[3] J. J. Allaire, C. Teague, C. Scheidegger, Y. Xie, and C. Dervieux, "Quarto." Jan-2022 [Online]. Available: https://github.com/quarto-dev/quarto-cli

David Folio Use `IEEEbiography` with figure as option and the author name as the argument followed by the biography text.

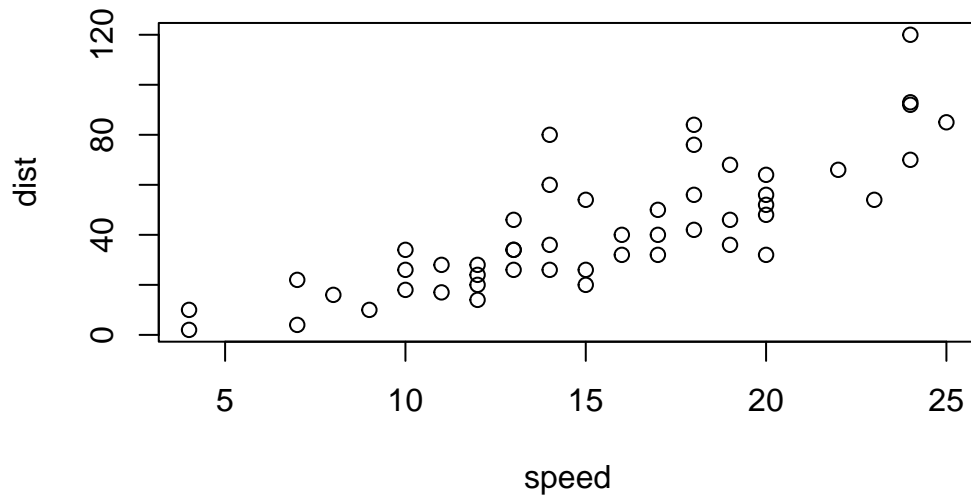Fig. 3: Example of double column floating figures (in PDF).

Table I: My Caption

Col1	Col2	Col3
A	B	C
E	F	G
A	G	G

John Doe Use `IEEEbiographynophoto` and the author name as the argument followed by the biography text.