

## The dccpaper bundle: Classes for submissions to IJDC and IDCC

Alex Ball  
Digital Curation Centre

### Abstract

This is the documentation for the dccpaper bundle, consisting of the following classes:

- ijdc-v9, which corresponds to the template used by the International Journal of Digital Curation, beginning with volume 9.
- idcc, which corresponds to the template used for the International Digital Curation Conference, beginning with IDCC15.

The version to which it relates is v1.3.1, last revised 2014-10-14.

The code for this bundle is maintained at <https://github.com/DigitalCurationCentre/dccpaper>.

Versions of the templates are also available that target Microsoft Word and LibreOffice/OpenOffice.org.

Please note that the DOI attached to this document is fake and should not be used for identification purposes.

*Received* 4 July 2013 | *Revision received* 10 December 2013 | *Accepted* 1 January 2014

Correspondence should be addressed to Alex Ball, UKOLN, University of Bath, Claverton Down, Bath BA2 7AY.  
Email: [a.ball@ukoln.ac.uk](mailto:a.ball@ukoln.ac.uk)

The *International Journal of Digital Curation* is an international journal committed to scholarly excellence and dedicated to the advancement of digital curation across a wide range of sectors. The IJDC is published by the University of Edinburgh on behalf of the Digital Curation Centre. ISSN: 1746-8256. URL: <http://www.ijdc.net/>

Copyright rests with the authors. This work is released under a Creative Commons Attribution 4.0 International Licence. For details please see <http://creativecommons.org/licenses/by/4.0/>



## Introduction

The  $\LaTeX$  class `ijdc-v9` produces camera-ready papers and articles suitable for inclusion in the International Journal of Digital Curation, with applicability from volume 9 onwards. The similar `idcc` class can be used for submissions to the International Digital Curation Conference, beginning with the 2015 conference. This document explains how to use these classes.

## Dependencies

Certain aspects of the template design have been implemented using third-party packages, aside from those that are required parts of the  $\LaTeX$  system. Therefore you should ensure that you have these packages installed on your system before attempting to use the class.

- `atbegshi` is used for switching geometry between pages.
- Tables in your document must be formatted according to the design principles promoted and supported by the `booktabs` package.
- `caption` is used to format the figure and table captions.
- `etoolbox` is used behind the scenes for patching commands.
- `footmisc` is used to format the footnotes.
- `titlesec` is used to format the section headings.

In some cases the class prefers to use packages that are not part of the base installation (but are nevertheless commonly available in  $\TeX$  distributions), but will fall back to their base equivalents if necessary.

- `newtx` will be used if available in place of `times`.
- `xcolor` will be used if available in place of `color`.

For referencing, you are encouraged to use either `biblatex` using the styles provided by `biblatex-apa` (preferred), or `apacite`.

## Loading the classes

The class is loaded in the usual way with `\documentclass[<options>]{ijdc-v9}` or `\documentclass[<options>]{idcc}`.

The following options are available for `ijdc-v9`:

`paper` Use this for peer-reviewed papers.

`article` Use this for general (non-peer-reviewed) articles if you like, but you do not have to as the class defaults to this state.

**editorial** Use this for an editorial.

Two types of option are available for idcc. The first relates to the type of submission:

**research** Use this for full research papers.

**practice** Use this for extended abstracts of practice papers, and full practice papers.  
The class defaults to this state, making this option even more optional than normal.

**data** Use this for data paper abstracts and full data papers.

**poster** Use this for poster abstracts.

**demo** Use this for demonstration proposals.

**bof** Use this for Birds of a Feather session abstracts.

**workshop** Use this for workshop proposals.

The second type of option relates to the conference to which the submission will be made:

**15** Use this for the 2015 conference.

## Preamble commands

The following commands should be given in the preamble to fill out the document metadata.

The following command should be used in all submissions.

**\title**[*{short version}*]{*{full version}*} The long version of the title is shown on the cover page of the submission, while the short version appears in the (even page) headers.

The following commands should be given in general articles and IDCC submissions. They should *not* be given in peer-reviewed IJDC papers until after the peer review process is complete.

**\author**{*{name}*} The name of one author. Repeat the command for each additional author.

It is customary in IJDC and IDCC papers to group authors by institution. Within each institution, the authors are ordered by the level of contribution (or alphabetically where this is equal), and the institutional groups are ordered by the level of contribution of the first author in the group (or alphabetically by first author where this is equal). A different convention may be used if appropriate.

**\affil**{*{name}*} The affiliation (institution, company) of the immediately preceding author(s). This command may be repeated as necessary.

`\correspondence{<name, postal address.> Email: \email{<email address>}}` Name, address and email address of the corresponding author. This information appears in the footer of the cover page.

If an IJDC submission is a reworked conference paper (that has not already been formally published), for reasons of transparency the name of the conference should be given.

`\conference{<name of conference>}` The conference at which the earlier version of the paper was presented, e.g. ‘the 10th International Digital Curation Conference’.

For IDCC papers, authors are invited to record the date on which they made their submission.

`\submitted{<date>}` The date on which the initial submission was made to the conference by the authors.

Some additional commands are used by the editorial team when preparing a submission for publication. Though authors would not normally need to use them, here they are for completeness.

`\received{<date>}` The date on which the initial submission was received by the editorial team (IJDC papers only).

`\revised{<date>}` The date on which the latest revision was received by the editorial team.

`\accepted{<date>}` The date on which the submission was accepted for publication.

`\subno{<number>}` The submission number allocated by the IJDC Open Journal System.

`\volume{<number>}` The number of the IJDC volume in which the submission will be published.

`\issue{<number>}` The number of the IJDC issue in which the submission will be published.

`\date{<year>}` The year in which the submission will be published.

## Document body

When it comes to writing the body of the submission, the template should allow you to use the usual  $\LaTeX$  markup without much adaptation. So, for example, you would start as in Figure 1.

Please note that if submitting an abstract or proposal to the IDCC instead of a full paper, you should *not* use the `abstract` environment. Instead, start with a section headed ‘Abstract’ as in Figure 2. Further guidance on how to write such submissions is given on the conference website.

IJDC and IDCC papers follow the formatting conventions specified by the American Psychological Association (APA, 2010), with a few minor changes. There are some instances where this affects how you write your submission.

```
\begin{document}
\maketitle

\begin{abstract}
Text of the abstract\dots
\end{abstract}

\section{Introduction}

The text of the introduction starts here\dots
```

**Figure 1.** Sample code for the beginning of an IJDC submission.

```
\begin{document}
\maketitle

\section{Abstract}

The text of the abstract or proposal starts here\dots
```

**Figure 2.** Sample code for the beginning of an IDCC abstract or proposal.

## Headings

Five levels of heading are defined (`\section` down to `\subparagraph`) but most authors only need the first one or two levels. `\section` and `\subsection` headings should be written in title case, that is, with Each Significant Word Given an Initial Capital, while the remaining headers should be written in sentence case as if running text. Do not end your heading names with full stops/periods.

## Quotations

Quotations should be put in a quote environment, wrapped in inverted commas, with the citation placed in parentheses at the end.

‘Cras porttitor dictum lacus. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos hymenaeos. In consectetur, diam at volutpat elementum, libero lectus pulvinar sem.’ (Borgman, 2007)

## Tables

- Table text should be in the `\small` font size.
- Tables should not use vertical lines to separate columns, and ideally should not use horizontal lines to separate rows in the body of the table; white space and text alignment should be sufficient. See the documentation of the `booktabs` package for more information.

- Text in the body of tables should normally be left-aligned. Numeric data should be aligned at the decimal point among itself but centred with respect to the heading; the D column type from the dcolumn package and the S column type from the siunitx package are particularly useful for this.
- Where decked (subdivided) headings are used, there should be a border beneath the upper-level heading (column spanner) indicating to which of the lower-level headings it applies.
- Empty cells can either be left blank or represented by an em dash. A blank cell indicates non-applicability, while an em dash signifies that the data was not collected or has been omitted.
- Captions should end in a full stop/period.

Table 1 demonstrates these features. The code used to produce the table is shown in Figure 3 (note that the siunitx package was loaded in the preamble).

**Table 1.** Papers and articles published in the IJDC in 2008 and 2009.

Issue	Frequency		Percentage	
	Peer-reviewed	General	Peer-reviewed	General
3(1)	9	7	56.3	43.8
3(2)	5	7	41.7	58.3
4(1)	10	4	71.4	28.6
4(2)	8	6	57.1	42.9
4(3)	3	15	16.7	83.3

Note the different relative positions of the table and figure captions.

## Reference List and Citations

To use biblatex for your reference list, add the following to your preamble:

```
\usepackage[style=apa]{biblatex}
\addbibresource{<bib file>.bib}
\DeclareLanguageMapping{british}{british-apa}
```

and include `\printbibliography` at the end of the document.

To use apacite for your reference list, add the following to your preamble:

```
\usepackage{apacite}
\bibliographystyle{apacite}
```

and include `\bibliography{<bib file>}` at the end of the document.

In-text citations are given parenthetically in author–date format. If author forms part of the narrative, as with Rinaldo, Warnement, Baione, Kalfatovic and Fraser (2011), only the date is added in parenthesis, otherwise both author and date are given (Smith et al., 2003). Where multiple citations are given at once, the order should be the same as

```

\begin{table}
\caption{Papers and articles published in the IJDC in 2008 and 2009.}
\label{tab:issues}
\sisetup{table-number-alignment=center,table-figures-integer=2,%
  table-figures-decimal=0}%
\centering\small
\begin{tabular}{lSSS[table-figures-decimal=1]%
  S[table-figures-decimal=1]}
\toprule
& \multicolumn{2}{c}{Frequency} & \multicolumn{2}{c}{Percentage} \\
\cmidrule(lr){2-3}\cmidrule(1){4-5}
Issue & {Peer-reviewed} & {General} & {Peer-reviewed} & {General} \\
\midrule
3(1) & 9 & 7 & 56.3 & 43.8 \\
3(2) & 5 & 7 & 41.7 & 58.3 \\
4(1) & 10 & 4 & 71.4 & 28.6 \\
4(2) & 8 & 6 & 57.1 & 42.9 \\
4(3) & 3 & 15 & 16.7 & 83.3 \\
\bottomrule
\end{tabular}
\end{table}

```

**Figure 3.** Code used to typeset Table 1.

in the reference list, i.e. alphabetically by author, with co-authored works coming after singly-authored works, then chronologically (Borgman, Wallis & Enyedy, 2006; Digital Curation Centre, 2005; Mazairac & Beetz, *in press*; Santini, 2004a, 2004b; Smith et al., 2003; Witten & Frank, 2005). Please consult the documentation of the package you are using for how to achieve this.

Please do not cite entire websites through the reference list mechanism. Instead, provide the title of the website (in English) and the URL in a footnote.<sup>1</sup> If the title of the website is not clear from the visible pages, the contents of the HTML title element may be used. Other explanatory notes, whether about the body text or cited items, should also be given as footnotes rather than as endnotes or reference list annotations.<sup>2</sup>

Please provide digital object identifiers (DOIs) for referenced items where available.

The data underlying the results presented in the submission should be placed in an appropriate custodial environment and cited (Waterton, Watson & Norton, 2013), with the reference placed in the reference list. The biblatex-apa package provides a data entry type which should be used for datasets; the entrysubtype value should be ‘Data set’ or similar. If using apacite, use the misc entry type with a type value of ‘Data set’ or similar.

<sup>1</sup> Digital Curation Centre: <http://www.dcc.ac.uk/>

<sup>2</sup> This avoids unnecessary page turning or scrolling.

## Acknowledgements

Any acknowledgements should be placed in a section immediately before the references.

## References

- American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.
- Borgman, C. L. (2007). *Scholarship in the digital age: Information, infrastructure, and the Internet*. Cambridge, MA: MIT Press.
- Borgman, C. L., Wallis, J. C. & Enyedy, N. (2006). Building digital libraries for scientific data: An exploratory study of data practices in habitat ecology. In J. Gonzalo, C. Thanos, M. F. Verdejo & R. C. Carrasco (Eds.), *Lecture Notes in Computer Science: Vol. 4172. Research and Advanced Technology for Digital Libraries* (pp. 170–183). doi:10.1007/11863878\_15
- Consultative Committee for Space Data Systems. (2012). *Reference model for an Open Archival Information System (OAIS)* (Magenta Book No. CCSDS 650.0-M-2). Retrieved from <http://public.ccsds.org/publications/archive/650x0m2.pdf>
- Digital Curation Centre. (2005). *Digital curation and preservation: Defining the research agenda for the next decade*. Report of the Warwick Workshop, November 7–8, 2005. Retrieved from [http://www.dcc.ac.uk/webfm\\_send/346](http://www.dcc.ac.uk/webfm_send/346)
- Esanu, J., Davidson, J., Ross, S. & Anderson, W. (2004). Selection, appraisal, and retention of digital scientific data: Highlights of an ERPANET/CODATA workshop. *Data Science Journal*, 3, 227–232. Retrieved from <http://www.jstage.jst.go.jp/browse/dsj>
- Mazairac, W. & Beetz, J. (in press). BIMQL: An open query language for building information models. *Advanced Engineering Informatics*. doi:10.1016/j.aei.2013.06.001
- National Science Foundation, Blue-Ribbon Advisory Panel on Cyberinfrastructure. (2003). *Revolutionizing science and engineering through cyberinfrastructure*. Retrieved from [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=cise051203](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=cise051203)
- Rinaldo, C., Warnement, J., Baione, T., Kalfatovic, M. R. & Fraser, S. (2011, July). Retooling special collections digitisation in the age of mass scanning. *Ariadne*, 67. Retrieved from <http://www.ariadne.ac.uk/issue67/rinaldo-et-al/>
- Santini, M. (2004a). *A shallow approach to syntactic feature extraction for genre classification*. Paper presented at the Seventh Annual Colloquium for the UK Special Interest Group for Computational Linguistics, Birmingham, UK. Retrieved from <ftp://ftp.itri.bton.ac.uk/reports/ITRI-04-02.pdf>



- Santini, M. (2004b). *State-of-the-art on automatic genre identification* (Technical Report No. ITRI-04-03). Information Technology Research Institute. Retrieved from <ftp://ftp.itri.bton.ac.uk/reports/ITRI-04-03.pdf>
- Smith, M., Barton, M., Bass, M., Branschofsky, M., McClellan, G., Stuve, D. & Walker, J. H. (2003). DSpace: An open source dynamic digital repository. *D-Lib Magazine*, 9(1). doi:10.1045/january2003-smith
- Waterton, C., Watson, N. & Norton, L. (2013). *Understanding and acting in Loweswater, 2007–2010* [Data set]. Colchester, UK: UK Data Archive. doi:10.5255/UKDA-SN-7359-1
- Witten, I. H. & Frank, E. (2005). *Data mining: Practical machine learning tools and techniques* (2nd ed.). San Francisco, CA: Morgan Kaufmann.

## Appendix A: Change History

### **v1.3.1** 2014-10-14

Fixed typographical error relating to details of IDCC 2015.

### **v1.3** 2014-08-07

Added documentation of `\conference` command. Improved display of footnotes, footnote markers and `itemize/enumerate` lists. Fixed a bug in the handling of author information. Fixed and improved how the transition from first to subsequent page geometry is achieved. Updated the details of IDCC 2015.

### **v1.2** 2014-04-11

Added implementation, installation and licence sections to the Appendix of the documentation. Moved the majority of the file postamble information to the README, and synchronized the latter with the GitHub version. Improved the adaptation of `apacite` referencing to the house style.

### **v1.1** 2014-03-06

Refactored the source for distribution through CTAN, and to allow the addition of the `idcc` class.

### **v1.0** 2013-12-18

First public release of `ijdc-v9` class.

## Appendix B: Implementation

### ijdc-v9.cls

```

1 %%
2 %% This is file 'ijdc-v9.cls',
3 %% generated with the docstrip utility.
4 %%
5 %% The original source files were:
6 %%
7 %% dccpaper.dtx (with options: 'ijdc9')
8 %%
9 %% -----
10 %% The dccpaper bundle: Classes for submissions to IJDC and IDCC
11 %% Author: Alex Ball
12 %% E-mail: a.ball@ukoln.ac.uk
13 %% License: Released under the LaTeX Project Public License v1.3c or later
14 %% See: http://www.latex-project.org/lppl.txt
15 %% -----
16 %%
17 \def\Version{2014/10/14 v1.3.1}
18 \NeedsTeXFormat{LaTeX2e}[1999/12/01]
19 \ProvidesClass{ijdc-v9}
20 [\Version\space Class for submissions to the International Journal of Digital
   Curation, volume 9 onwards.]

```

The type of paper is recorded in `\dccp@type`. The possible values are `GeneralArticle`, `Peer-ReviewedPaper`, or `Editorial`. The latter is provided through the constant `\dccp@editorial` so we can test for it later with ease.

```

21 \def\dccp@type{General Article}
22 \def\dccp@editorial{Editorial}

```

These three options set `\dccp@type` appropriately. The `editorial` option additionally switches page numbers to roman numerals. The `article` option is redundant, but included for symmetry.

```

23 \DeclareOption{editorial}{\let\dccp@type=\dccp@editorial%
24 \AtBeginDocument{% Editorials use Roman numerals for page numbers
25 \pagenumbering{roman}%
26 \renewcommand{\thelastpage}{\@roman\c@lastpage}%
27 }%
28 }
29 \DeclareOption{paper}{\def\dccp@type{Peer-Reviewed Paper}}
30 \DeclareOption{article}{\def\dccp@type{General Article}}
31 \ProcessOptions\relax

```

These definitions are used to fill out the headers and footers. They include some details that are defined in `dccpaper-base.tex` and provided by the user: `\thedatae`, `\thevolume`, `\theissue`, `\thelastpage`, `\thedoi`.

```

33 \def\dccp@publ@long{International Journal of Digital Curation}
34 \def\dccp@publ@short{IJDC}
35 \def\dccp@publ@msg{The \emph{\dccp@publ@long} is an international journal
36 committed to scholarly excellence and dedicated to the advancement of digital
37 curation across a wide range of sectors. The \dccp@publ@short\ is published by
38 the University of Edinburgh on behalf of the Digital Curation Centre. ISSN:
39 1746-8256. URL: \url{http://www.ijdc.net/}}
40 \def\dccp@titlefoot@bib{%
41   \dccp@publ@long\
42   \thedate, Vol.\ \thevolume, Iss.\ \theissue, \thepage--\thelastpage.%
43 }
44 \def\dccp@titlefoot@doi{%
45   \url{http://dx.doi.org/\thedoi}\
46   DOI: \thedoi
47 }
48 \def\dccp@normhead@doi{doi:\thedoi}

```

`\dccp@subject` will be used for the PDF subject, and will specify the journal and the issue.

```

49 \def\dccp@subject{\dccp@publ@long, \thedate, Vol.\ \thevolume, Iss.\ \theissue}

```

The rest of the formatting happens in the following file.

```

51 \input{dccpaper-base}
52 %%
53 %% Copyright (C) 2014 Digital Curation Centre, University of Edinburgh
54 %% <info@dcc.ac.uk>
55 %%
56 %% End of file 'ijdc-v9.cls'.

```

## idcc.cls

```

1  %%
2  %% This is file 'idcc.cls',
3  %% generated with the docstrip utility.
4  %%
5  %% The original source files were:
6  %%
7  %% dccpaper.dtx (with options: 'idcc')
8  %%
9  %% -----
10 %% The dccpaper bundle: Classes for submissions to IJDC and IDCC
11 %% Author: Alex Ball
12 %% E-mail: a.ball@ukoln.ac.uk
13 %% License: Released under the LaTeX Project Public License v1.3c or later
14 %% See: http://www.latex-project.org/lppl.txt
15 %% -----
16 %%
17 \def\Version{2014/10/14 v1.3.1}
18 \NeedsTeXFormat{LaTeX2e}[1999/12/01]
19 \ProvidesClass{idcc}

```

```
20 [\Version\space Class for submissions to the International Digital Curation
    Conference.]
```

These definitions are used to fill out the headers and footers. The ones for `\dccp@publ@short` and `\dccp@publ@msg` are a fallback, defined here but ordinarily overridden using a package option.

```
21 \def\dccp@publ@long{International Digital Curation Conference}
22 \def\dccp@publ@short{IDCC}
23 \def\dccp@publ@msg{The \dccp@publ@long\ takes place on [TBC] in [TBC]. URL:
24 \url{http://www.dcc.ac.uk/events/international-digital-curation-conference-idcc}}
```

`\dccp@subject` will be used for the PDF subject. The value here is again a fallback, ordinarily overridden using a package option.

```
25 \def\dccp@subject{\dccp@publ@long}
```

Paper type is recorded in `\def\dccp@type`. The values can be `Research_Paper`, `Practice_Paper`, `Poster`, `Demonstration`, or `Workshop`.

```
27 \def\dccp@type{Practice Paper}
```

These options set the value of `\def\dccp@type` appropriately. The `practice` option is redundant, but included for symmetry.

```
28 \DeclareOption{research}{\def\dccp@type{Research Paper}}
29 \DeclareOption{data}{\def\dccp@type{Data Paper}}
30 \DeclareOption{poster}{\def\dccp@type{Poster}}
31 \DeclareOption{demo}{\def\dccp@type{Demonstration}}
32 \DeclareOption{bof}{\def\dccp@type{Birds of a Feather}}
33 \DeclareOption{workshop}{\def\dccp@type{Workshop}}
34 \DeclareOption{practice}{\def\dccp@type{Practice Paper}}
```

The details for each conference are slightly different, so they each have an associated option for overriding the fallback definitions for `\dccp@publ@short`, `\dccp@publ@msg` and `\dccp@subject`.

```
35 \DeclareOption{15}{%
36   \def\dccp@publ@short{IDCC15}
37   \def\dccp@publ@msg{The 10th \dccp@publ@long\ takes place on 9--12 February
38   2015 in London. URL: \url{http://www.dcc.ac.uk/events/idcc15/}}
39   \def\dccp@subject{10th \dccp@publ@long, 2015}
40 }
41 \ProcessOptions\relax
```

The rest of the formatting happens in the following file.

```
43 \input{dccpaper-base}
44 %%
45 %% Copyright (C) 2014 Digital Curation Centre, University of Edinburgh
46 %% <info@dcc.ac.uk>
47 %%
48 %% End of file 'idcc.cls'.
```

**dccpaper-base.tex**

```

1 %%
2 %% This is file 'dccpaper-base.tex',
3 %% generated with the docstrip utility.
4 %%
5 %% The original source files were:
6 %%
7 %% dccpaper.dtx (with options: 'base')
8 %%
9 %% -----
10 %% The dccpaper bundle: Classes for submissions to IJDC and IDCC
11 %% Author: Alex Ball
12 %% E-mail: a.ball@ukoln.ac.uk
13 %% License: Released under the LaTeX Project Public License v1.3c or later
14 %% See: http://www.latex-project.org/lppl.txt
15 %% -----
16 %%
17 \def\Version{2014/10/14 v1.3.1}
18 \ProvidesFile{dccpaper-base.tex}
19 [\Version\space Common class code for IJDC and IDCC papers.]

```

The dccpaper classes are deliberately very similar. This file contains the common code. All the classes are based on the article class, and use A4 paper.

```
20 \LoadClass[a4paper,12pt,twoside]{article}
```

We use British English orthography.

```
22 \RequirePackage[british]{babel}
```

The macro patching commands from etoolbox come in useful for handling author and date information, and also for compatibility with apacite.

```
23 \RequirePackage{etoolbox}
```

The dccpaper classes use Times as the main text font. We prefer newtx as it provides support for mathematics, but the standard times package will do. In case they are needed, we also provide Helvetica for the sans serif font and Computer Modern Teletype for the monospaced.

```

24 \RequirePackage[T1]{fontenc}
25 \IfFileExists{newtxtext.sty}%
26   {\RequirePackage{newtxtext,newtxmath}}%
27   {\RequirePackage{times}}
28 \RequirePackage[scaled=0.92]{helvet}
29 \renewcommand{\ttdefault}{cmtt}

```

We will need support for included graphics and colour. The structural elements are a medium turquoise, while the links are slightly darker to make them easier to read on screen.

```

30 \RequirePackage{graphicx}
31 \IfFileExists{xcolor.sty}%
32   {\RequirePackage{xcolor}}%
33   {\RequirePackage{color}}
34 \definecolor[named]{struct}{rgb}{0,0.5,0.5}
35 \definecolor[named]{links}{rgb}{0,0.4,0.4}

```

We will calculate some lengths later.

```

36 \RequirePackage{calc}

```

Ragged right text is easier to read on screen, but fully justified text looks better. The `\raggedyright` layout from Peter Wilson’s memoir class (2005/09/25 v1.618) is an excellent compromise. The code below replicates it.

First we save the original definitions of `\` and `\parindent` as `\OrigLineBreak` and `\RaggedParindent` respectively.

```

38 \let\OrigLineBreak\
39 \newdimen\RaggedParindent
40 \setlength{\RaggedParindent}{\parindent}

```

The `\raggedyright` layout more or less lays text out as with full justification, but then lets the shorter lines relax a bit from the right margin. It is the default for DCC papers.

```

42 \newcommand{\raggedyright}[1][2em]{%
43   \let\\\@centercr\@rightskip \z@ \@plus #1\relax
44   \rightskip\@rightskip
45   \leftskip\z@skip
46   \parindent\RaggedParindent}
47 \AtBeginDocument{\raggedyright}

```

The `\flushleftright` layout restores full justification, in case it is needed.

```

49 \newcommand*{\flushleftright}{%
50   \let\\\OrigLineBreak
51   \leftskip\z@skip
52   \rightskip\leftskip
53   \parfillskip\@flushglue
54   \everypar{}}

```

The classes have some special metadata requirements. We start with the author information.

The macro `\thecorrespondence` is used in the title page footer for the name, postal address and email address of the corresponding author.

```

56 \def\thecorrespondence{}
57 \newcommand*{\correspondence}[1]{\def\thecorrespondence{#1}}

```

The handling of authors here is inspired by Patrick W Daly's `authblk`, (2001/02/27 1.3), and defines the familiar user commands. Authors are presented in blocks, one affiliation but perhaps several authors per block.

We make the presentation of the author information configurable (just in case) with some hooks and lengths:

- `\Authfont` is the font used for author names;
- `\Affilfont` is the font used for affiliations;
- `\affilsep` is the line spacing between author names and affiliations;
- `\authblksep` is the line spacing between author name/affiliation blocks.

```
58 \newcommand*{\Authfont}{\normalfont}
59 \newcommand*{\Affilfont}{\normalfont\small}
60 \newlength{\affilsep}\setlength{\affilsep}{0pt}
61 \newlength{\authblksep}\setlength{\authblksep}{1.5\baselineskip}
```

The `\AuthorBlock` command will be used to collect all the author information.

```
62 \newcommand{\AuthorBlock}{}
```

The `\MainAuthor` command collects abbreviated author information for use in the headers.

```
63 \newcommand{\MainAuthor}{}
```

The `\dccp@author` command, meanwhile, collects a full list of authors for the PDF metadata.

```
64 \newcommand{\dccp@author}{}
```

We define counters for

- the total number of authors defined;
- the number of authors in the current block;
- the number of blocks defined.

```
65 \newcounter{authors}
66 \newcounter{authorsinblock}
67 \newcounter{block}
```

The `block` counter will increase once in the preamble, and again when the information is typeset, so we need to reset it at the beginning of the document.

```
68 \AtBeginDocument{\setcounter{block}{0}}
```

The new definition of the author command starts here.



```
69 \renewcommand{\author}[1]{%
```

If this is the first or second `\author` command, we add the name to our abbreviated list of authors. Otherwise, we replace the name of the second and subsequent authors with `et al.` in that list.

At the same time, we use a simpler technique to populate `\dccp@author`.

```
70 \ifnum\theauthors=0
71   \def\dccp@author{#1}%
72   \def\MainAuthor{#1}%
73 \else
74   \appto\dccp@author{, #1}%
75   \ifnum\theauthors=1%
76     \def\OtherMainAuthors{ and #1}%
77     \appto\MainAuthor{\OtherMainAuthors}%
78   \else
79     \ifnum\theauthors=2%
80       \def\OtherMainAuthors{ et al.}%
81     \fi
82   \fi
83 \fi
84 \stepcounter{authors}%
```

Each block has its author names collected in a macro like `\blocki@auth`, and its affiliation collected in a macro like `\blocki@affil` (the `i` is a serial number).

If this is the first author in a block, we need to create the block and add it to `\AuthorBlock`; second and subsequent blocks are preceded by a `\quad` of space.

```
85 \ifnum\theauthorsinblock=0%
86   \stepcounter{block}%
87   \expandafter\def\csname block\roman{block}@auth\endcsname{#1}%
88   \ifnum\theblock>1\appto\AuthorBlock{\quad}\fi
89   \appto\AuthorBlock{%
90     \stepcounter{block}%
91     \begin{minipage}[t]{0.45\textwidth}\centering
92     \csname block\roman{block}@auth\endcsname
93     \ifx\undefined\csname block\roman{block}@affil\endcsname
94     \else
95       \[\affilsep\csname block\roman{block}@affil\endcsname
96     \fi
97     \end{minipage}%
98     \rule{0pt}{2\baselineskip}%
99   }
100 \else
```

Otherwise we just add the name to the right `\blocki@auth`-style macro.

```
101   \csappto{block\roman{block}@auth}{, #1}%
102   \fi
103   \stepcounter{authorsinblock}%
104 }
```

The `\affil` command adds an affiliation to the current block and closes it by resetting the `authorsinblock` counter.

```

105 \newcommand{\affil}[1]{%
106   \expandafter\def\csname block\roman{block}@affil\endcsname{\Affilfont#1}%
107   \setcounter{authorsinblock}{0}%
108 }

```

The `\HeadTitle` collects the abbreviated title for use in the headers.

```

110 \newcommand*{\HeadTitle}{}

```

We wrap the normal `\title` command with code to populate `\HeadTitle` with the optional argument if provided, or the mandatory one otherwise. We also provide a persistent `\thetitle` macro, stripped of any `\thanks`.

```

111 \let\ProperTitle=\title
112 \renewcommand{\title}[2] [\empty]{
113   \ifx\empty #1%
114     \renewcommand*{\HeadTitle}{#2}%
115   \else
116     \renewcommand*{\HeadTitle}{#1}%
117   \fi%
118   \begingroup\let\footnote@gobble
119   \ProperTitle{#2}%
120   \begingroup
121   \renewcommand{\thanks}[1]{}
122   \protected@xdef\thetitle{#2}
123   \endgroup\endgroup
124 }

```

We make `\thedata` persistent, borrowing the technique used in Peter Wilson's memoir class (2005/09/25 v1.618).

```

126 \pretocmd{\date}{\begingroup\let\footnote@gobble}{}{}%
127 \apptocmd{\date}{%
128   \begingroup
129   \renewcommand{\thanks}[1]{}
130   \protected@xdef\thedata{#1}
131   \endgroup\endgroup%
132 }{}{}

```

We ensure `\thedata` is defined using a dummy date.

```

133 \date{20xx}

```

IJDC articles have extra bibliographic information:

- `\volume` sets the volume number, `\thevolume`;
- `\issue` sets the issue number, `\theissue`;
- `\subno` sets the submission number, `\thesubno`.

These numbers are used to build the DOI, `\thedoi`.

```

135 \newcommand*{\thevolume}{0}
136 \newcommand*{\volume}[1]{\renewcommand*{\thevolume}{#1}}
137 \newcommand*{\theissue}{0}
138 \newcommand*{\issue}[1]{\renewcommand*{\theissue}{#1}}
139 \newcommand*{\thesubno}{0}
140 \newcommand*{\subno}[1]{\renewcommand*{\thesubno}{#1}}
141 \newcommand*{\thedoi}{10.2218/ijdc.v\thevolume i\theissue .\thesubno}

```

They also display the page range. The following code was borrowed from Peter Wilson's memoir class (2005/09/25 v1.618). It defines a counter `lastpage` which, on the second run, will contain the number of the last page.

```

142 \newcounter{lastpage}
143 \setcounter{lastpage}{0}
144 \newcommand{\dol@stpage}{%
145   \if@filesw
146     \addtocounter{page}{-1}%
147     \immediate\write\@auxout%
148       {\string\setcounter{lastpage}{\the\c@page}}%
149     \stepcounter{page}%
150   \fi
151 }
152 \AtBeginDocument{\AtEndDocument{\clearpage\dol@stpage}}

```

DCC papers display some important dates. We collect these in `\dccp@dates`, initially setting the value to something sensible for papers in draft.

```

154 \def\dccp@dates{\emph{Draft from} \today}

```

Several types of date can be added:

- `\submitted` for when the authors submitted the paper (intended for IDCC papers).
- `\received` for when the paper was received by the editorial board (intended for IJDC papers).
- `\revised` for when the most recent version was received by the editorial board.
- `\accepted` for when the paper was accepted by the editorial board.

```

155 \newcommand*{\submitted}[1]{%
156   \def\dccp@dates{\emph{Submitted} #1}}
157 \newcommand*{\received}[1]{%
158   \def\dccp@dates{\emph{Received} #1}}
159 \newcommand*{\revised}[1]{%
160   \appto\dccp@dates{%
161     \space\space\space\textbar\space\space\space
162     \emph{Revision received} #1}%
163   }
164 \newcommand*{\accepted}[1]{%
165   \appto\dccp@dates{%
166     \space\space\space\textbar\space\space\space
167     \emph{Accepted} #1}%
168   }

```

IJDC papers need to say if they had a previous life as a conference paper. This statement goes in `\dccp@conf`, which is initially empty. The user command for setting this text is `\conference`.

```
169 \let\dccp@conf=\empty
170 \newcommand*{\conference}[1]{%
171   \renewcommand*{\dccp@conf}{An earlier version of this paper was presented at
      #1.}%
172 }
```

The macro `\FixTextHeight` will be useful when switching from the first page geometry to the regular geometry for the rest of the paper. It is based on code from Hideo Umeki's geometry package (2002/07/08 v3.2).

```
174 \newcommand{\FixTextHeight}{%
175   \setlength\@tempdima{\textheight}%
176   \addtolength\@tempdima{-\topskip}%
177   \@tempcnta\@tempdima
178   \@tempcntb\baselineskip
179   \divide\@tempcnta\@tempcntb
180   \setlength\@tempdimb{\baselineskip}%
181   \multiply\@tempdimb\@tempcnta
182   \advance\@tempdima-\@tempdimb
183   \global\advance\footskip\@tempdima
184   \multiply\@tempdima\tw@
185   \ifdim\@tempdima>\baselineskip
186     \addtolength\@tempdimb{\baselineskip}%
187     \global\advance\footskip-\baselineskip
188   \fi
189   \addtolength\@tempdimb{\topskip}%
190   \global\textheight\@tempdimb
191 }
```

The width of the textblock (on all pages) is 150mm, which on A4 paper implies margins of 30mm each. (Making both horizontal margins the same in a two-sided context makes the paper more pleasant to read on screen).

```
193 \setlength{\textwidth}{150mm}
194 \setlength{\oddsidemargin}{30mm - \hoffset - 1in}
195 \setlength{\evensidemargin}{30mm - \hoffset - 1in}
```

It is rare to have marginal notes, but in case we ever do, we centre them in the margin.

```
196 \setlength{\marginparwidth}{30mm - 2\marginparsep}
```

We also want a distance of 15mm from the top of the page to the top of the header, and two blank lines between the bottom of the header and the top of the textblock.

```
197 \setlength{\topmargin}{15mm - \voffset - 1in}
198 \setlength{\headsep}{2\baselineskip}
```

IJDC editorials have slightly different headers and footers. This requires testing for `\dccp@editorial` if it exists. In case it doesn't, we provide it.

```
200 \providecommand{\dccp@editorial}{Editorial}
```

The height of the footer can vary a lot. To keep it a fixed distance from the bottom of the page rather than the top, we need to vary the `\textheight` accordingly. This means we need to measure the height of the footer. (The header is more predictable but we may as well measure it while we are at it).

Here we define the header and footer of the title page (i.e. the title page style), making sure we save them to auxiliary macros `\TitleHead` and `\TitleFoot` so we can measure them.

```
201 \def\ps@title{%
202   \def\@oddhead{%
203     \begin{minipage}{\textwidth}%
204     \centering
205     \LARGE\bfseries\color{struct}%
206     \ifx\dccp@type\dccp@editorial
207       \dccp@publ@long
208     \else
209       \dccp@publ@short\space\space\textbar\space\space\emph{\dccp@type}%
210     \fi
211     \par
212   \end{minipage}%
213 }%
214 \let\@evenhead=\@oddhead
215 \let\TitleHead=\@oddhead
216 \def\@oddfoot{%
217   \begin{minipage}[b]{\textwidth}%
218   \fontsize{9pt}{11pt}\selectfont
219   \ifx\dccp@type\dccp@editorial
220   \else
221     {\centering\dccp@dates\par}
222     \bigskip
223     Correspondence should be addressed to \thecorrespondence\par
224     \bigskip
225   \fi
226   \ifx\empty\dccp@conf
227   \else
228     \dccp@conf\par
229     \bigskip
230   \fi
231   \dccp@publ@msg\par
232   \bigskip
233   \begin{minipage}[b]{\linewidth - 25mm}
234   Copyright rests with the authors. This work is released under a Creative
235   Commons Attribution 4.0 International Licence. For details please see
236   \url{http://creativecommons.org/licenses/by/4.0/}%
237   \end{minipage}\hfill
238   \begin{minipage}[b]{19mm}
239     \href{http://creativecommons.org/licenses/by/4.0/}%
240     {\includegraphics[width=\hsize]{dccpaper-by}}%
241   \end{minipage}
242   \par
243   \bigskip
244   \makebox[0pt][l]{\parbox{0.4\hsize}{%

```

```

245     \ifx\undefined\dccp@titlefoot@bib\else\dccp@titlefoot@bib\fi
246   }}\hfill
247   \makebox[0pt][c]{\normalsize\thepage}\hfill
248   \makebox[0pt][r]{\parbox{0.4\hsize}{%
249     \raggedleft\ifx\undefined\dccp@titlefoot@doi\else\dccp@titlefoot@doi\fi
250   }}%
251   \end{minipage}%
252 }%
253 \let\@evenfoot=\@oddfoot
254 \let\TitleFoot=\@oddfoot
255 }

```

We set the normal page style to title here so that `\TitleHead` and `\TitleFoot` are defined, but we will override it with the dccpaper page style later.

```

256 \pagestyle{title}

```

The first page should use the title page style, however.

```

257 \AtBeginDocument{\thispagestyle{title}}

```

Here are the normal headers and footers (i.e. the dccpaper page style). We save them to `\NormalHead` and `\NormalFoot`, again so we can measure them.

```

259 \def\ps@dccpaper{%
260   \def\@oddhead{%
261     \begin{minipage}{\textwidth}\frenchspacing
262     {%
263       \fontsize{9pt}{11pt}\selectfont
264       \ifx\undefined\dccp@normhead@doi\else\dccp@normhead@doi\fi
265     }\hfill
266     {\MainAuthor}\space\space\space
267     \textcolor{struct}{\textbar}\space\space\space
268     \thepage\par
269     \vskip6pt\color{struct}{\hrule height 1bp}\par
270   \end{minipage}
271 }%
272 \def\@evenhead{%
273   \begin{minipage}{\textwidth}
274     \thepage\space\space\space
275     \textcolor{struct}{\textbar}\space\space\space
276     {\HeadTitle}\hfill
277     {%
278       \fontsize{9pt}{11pt}\selectfont
279       \ifx\undefined\dccp@normhead@doi\else\dccp@normhead@doi\fi
280     }\par
281     \vskip6pt\color{struct}{\hrule height 1bp}\par
282   \end{minipage}
283 }%
284 \let\NormalHead=\@oddhead
285 \def\@oddfoot{\begin{minipage}[b]{\textwidth}
286   \centering\bfseries\normalsize\color{struct}
287   \ifx\dccp@type\dccp@editorial
288     \dccp@publ@long
289   \else

```

```

290     \dccp@publ@short\space\space\textbar\space\space\emph{\dccp@type}%
291     \fi
292     \par
293     \end{minipage}}%
294     \let\@evenfoot=\@oddfoot
295     \let\NormalFoot=\@oddfoot
296 }
297 \pagestyle{dccpaper}

```

We need to wait until the author has supplied the necessary information before we can do our measuring and set the remainder of the geometry, so we do it at the end of the preamble. First we put our saved macros into boxes we can measure (i.e. `\dccp@firstpagehead`, `\dccp@firstpagefoot`, `\dccp@restpagehead`, `\dccp@restpagefoot`).

```

299 \AtEndPreamble{
300   \newsavebox{\dccp@firstpagehead}
301   \sbox\dccp@firstpagehead{\normalfont\TitleHead}
302   \newsavebox{\dccp@firstpagefoot}
303   \sbox\dccp@firstpagefoot{\normalfont
304     \def\email#1{#1}\def\url#1{#1}\def\href#1#2{#2}\TitleFoot}
305   \newsavebox{\dccp@restpagehead}
306   \sbox\dccp@restpagehead{\normalfont\NormalHead}
307   \newsavebox{\dccp@restpagefoot}
308   \sbox\dccp@restpagefoot{\normalfont\NormalFoot}

```

We can now set the geometry of the title page...

```

309   \setlength{\headheight}{\ht\dccp@firstpagehead + \dp\dccp@firstpagehead}
310   \setlength{\footskip}{%
311     2\baselineskip + \ht\dccp@firstpagefoot + \dp\dccp@firstpagefoot
312   }
313   \setlength{\textheight}{%
314     \paperheight
315     - 30mm % 15mm top and bottom
316     - \headheight
317     - \headsep
318     - \footskip
319   }

```

... and provide a macro that will reset the geometry for the remaining pages.

```

320   \def\dccp@resetgeometry{%
321     \setlength{\headheight}{\ht\dccp@restpagehead + \dp\dccp@restpagehead}
322     \global\headheight=\headheight
323     \setlength{\footskip}{%
324       2\baselineskip + \ht\dccp@restpagefoot
325     }
326     \global\footskip=\footskip
327     \setlength{\textheight}{%
328       \paperheight
329       - 30mm % 15mm top and bottom
330       - \headheight
331       - \headsep
332       - \footskip

```

```

333   }
334   \FixTextHeight
335   \global\textheight=\textheight
336 }
337 }

```

The `\maketitle` command is redefined to the correct formatting. At the end it sets a hook that will reset the geometry when the first page is shipped out, i.e. with effect from the second page. It is here rather than at the end of the abstract in case the abstract itself spills over to the second page.

```

339 \RequirePackage{atbegshi}
340 \renewcommand{\maketitle}{%
341   \null\nobreak\vspace*{-0.528\baselineskip}%
342   \begingroup
343     \centering
344     {\Large\thetitle\par}
345     \vspace{0.7\baselineskip}
346     \AuthorBlock\par
347     \vspace{1.7\baselineskip}
348   \endgroup
349   \AtBeginShipoutNext{\dccp@resetgeometry}%
350 }

```

The abstract environment is redefined in terms of an environment `widequote`, which mimics the `quote` environment, but is a bit wider. We also provide a hook, `\afterabstract`, so that if some annotation needs to be appended to the title page after the abstract, we can do that.

```

352 \newenvironment{widequote}{%
353   \list{}{%
354     \setlength{\rightmargin}{2\parindent}%
355     \setlength{\leftmargin}{2\parindent}%
356   }%
357   \flushletright\item[]%
358 }{%
359   \endlist
360 }
361 \def\afterabstract{}
362 \renewenvironment{abstract}{%
363   \vskip1em%
364   \begin{center}%
365     {\bfseries\abstractname\vspace{- .5em}\vspace{\z@}}%
366   \end{center}%
367   \widequote\footnotesize
368 }{%
369   \endwidequote\afterabstract\newpage
370 }

```

We use the `titlesec` package to give headings the correct formatting. The settings below try to space out headings so they occupy an integer number of normal lines (an attempt at grid typesetting). They are a little complicated because we want it to work even if the heading appears at the top of the page.



```

372 \RequirePackage{titlesec}
373 \titlespacing*{\section}{0pt}{0pt}{\baselineskip}
374 \titlespacing*{\subsection}{0pt}{0pt}{0.6\baselineskip}
375 \titlespacing{\subsubsection}{\parindent}{\baselineskip}{0pt}
376 \titlespacing{\paragraph}{\parindent}{\baselineskip}{0pt}
377 \titlespacing{\subparagraph}{\parindent}{\baselineskip}{0pt}

```

An unfortunate side effect of spacing headings like this is that if a `\subsection` immediately follows a `\section` it forms an unsightly gap. To remedy this, we count how many paragraphs there have been since the last `\section`. Note that as we do not normally number the sections, an automatic reset of the `sectionpars` counter within the `section` counter won't work.

```

378 \newcounter{sectionpars}
379 \let\dccp@old@ep\everypar
380 \newtoks\everypar
381 \dccp@old@ep{\the\everypar\stepcounter{sectionpars}}

```

We need to manually reset `sectionpars` when `\section` is called. Also, the normal font size is 12pt/14.5pt, while `\Large` is 17pt/22pt; so the `\Large` line height = 1.5172 × normal line height. Nevertheless it seems to work better if we let the heading eat 0.528`\baselineskip` into the 2`\baselineskip` of padding above it.

```

382 \titleformat{\section}
383 [block]
384 {%
385   \vspace{2\baselineskip}%
386   \nobreak
387   \vspace*{-0.528\baselineskip}%
388   \setcounter{sectionpars}{0}%
389   \filcenter\normalfont\Large\bfseries
390 }
391 {\thesection}
392 {\quad}
393 {}

```

The others use a `\normalsize` font so that makes life easier. The format for `\subsection` command includes conditional spacing: if the `sectionpars` counter equals 2, this means the heading immediately follows a `\section`, so less white space is needed.

```

394 \titleformat{\subsection}
395 {%
396   \ifnum\thesectionpars>2%
397     \vspace{2\baselineskip}%
398   \else
399     \vspace{\baselineskip}%
400   \fi\nobreak
401   \vspace*{-0.6\baselineskip}%
402   \normalfont\normalsize\bfseries
403 }
404 {\thesubsection}
405 {\quad}

```

```

406 {}
407 \titleformat{\subsubsection}
408 [block]
409 {\normalfont\normalsize\bfseries}
410 {\thesubsubsection}
411 {\quad}
412 {}
413 \titleformat{\paragraph}
414 [block]
415 {\normalfont\normalsize\bfseries\itshape}
416 {\thesubsubsection}
417 {\quad}
418 {}
419 \titleformat{\subparagraph}
420 [block]
421 {\normalfont\normalsize\itshape}
422 {\thesubsubsection}
423 {\quad}
424 {}

```

DCC papers do not typically number their sections.

```

425 \setcounter{secnumdepth}{0}

```

To help with the display of tables we load the `array` and `booktabs` packages. As we don't like lines between rows in the table body, we stretch them out a bit so that white space does the job instead.

```

427 \RequirePackage{array,booktabs}
428 \renewcommand{\arraystretch}{1.25}

```

We use the `caption` package to give captions the right format.

```

430 \RequirePackage
431 [ format=hang
432 , labelsep=period
433 , font=small
434 , labelfont=bf
435 , figureposition=bottom
436 , tableposition=top
437 ]{caption}

```

Footnotes should be set right up against the left margin. They should be set hung and in the same half-ragged style as the main text. They should also, for neatness, be at the bottom of the page regardless of how short it is. The `footmisc` package helps here.

```

439 \RequirePackage[hang,bottom]{footmisc}
440 \settowidth{\footnotemargin}{\footnotesize\textsuperscript{99}\space}
441 \renewcommand{\footnotelayout}{\raggedyright}

```

Also, if multiple footnotes are set at once, the markers should be separated with superscript commas. The `footmisc` package should help here but its solution is clobbered by `hyperref`. So after a footnote is set, we check to see if the next token is also a

footnote, and if so, slip a comma in before it.<sup>3</sup> This tweak needs to be done late, `\AtBeginDocument`. Note that the newtx superior figures are a bit lower than normal superscript text.

```

442 \AtBeginDocument{
443   \let\dccp@footnote\footnote
444   \def\dccp@next@token{\relax}%
445   \def\dccp@supercomma{\textsuperscript{,}}%
446   \IfFileExists{newtxtext.sty}%
447     {\def\dccp@supercomma{\raisebox{-0.2ex}{\textsuperscript{,}}}}%
448     {}
449
450   \newcommand\dccp@check@for@footnote{%
451     \ifx\footnote\dccp@next@token
452       \dccp@supercomma
453     \fi
454   }
455
456   \renewcommand\footnote[1]{%
457     \dccp@footnote{#1}%
458     \futurelet\dccp@next@token\dccp@check@for@footnote
459   }
460 }

```

By default lists are quite loose. These settings help to tighten them.

```

462 \topsep = \z@
463 \partopsep = \z@
464 \appto{\enumerate}{\itemsep = 0.5ex plus 0.25ex minus 0.25ex}
465 \appto{\itemize}{\itemsep = 0.5ex plus 0.25ex minus 0.25ex}

```

A DCC paper should either be using biblatex or apacite for references.

If biblatex is used, we need to ensure that the reference list heading is a normal section rather than a starred one so it appears in the PDF bookmarks.

```

467 \AtBeginDocument{
468   \@ifpackageloaded{biblatex}{%
469     \defbibheading{bibliography}[\refname]{\section{#1}}%
470   }%

```

If apacite is used, we can do the same with a package option (see below). But there are a few other adaptations we need to make.

```

471 \@ifpackageloaded{apacite}{%

```

With hyperref loaded, apacite makes the whole of a citation a link to the reference list item. We patch `\@ifauthorsunequalc@de` so only the year portion gets linked.

```

472   \def\@ifauthorsunequalc@de#1{%
473     \if@F@cite
474       \@F@citefalse
475     \else

```

<sup>3</sup> This solution was provided at <http://tex.stackexchange.com/q/40072>

```

476     \if@Y@cite
477         {\@BAY}%
478     \fi
479     {\@BBC}%
480 \fi
481 \edef\@cite@undefined{?}%
482 \def\BBA{\@BBA}%
483 \if@A@cite
484     %\hyper@natlinkstart{#1}% We remove this line...
485     {\csname b@\@citeb\APAC@extra@b@citeb\endcsname}%
486     %\hyper@natlinkend% ...and this one.
487     \if@Y@cite
488         {\@BBAY}%
489     \fi
490 \fi
491 \if@Y@cite
492     \hyper@natlinkstart{#1}%
493     {\csname Y@\@citeb\APAC@extra@b@citeb\endcsname}%
494     \hyper@natlinkend
495 \fi
496 \let\BBA\relax
497 }

```

The Spanish language support file defines a different version of `\@ifauthorsunequalc@de`, which might override the patch we have just introduced. So we employ the same test that `apacite` uses when deciding whether to load that file; if successful, we patch the Spanish version. Note that as `apacite` loads language support files `\AtBeginDocument`, we have to do our thing after that, `\AfterEndPreamble`.

(Note that as we set the language to British English earlier, this should never be needed, but we try to be resilient to tinkering!)

```

498 \AfterEndPreamble{%
499     \@ifundefined{iflanguage}{%
500         \relax
501     }{%
502         \edef\APAC@tmp{nohyphenation}%
503         \ifx\languagename\APAC@tmp
504         \else
505             \edef\APAC@tmp{spanish}%
506             \ifx\languagename\APAC@tmp
507                 \def\@ifauthorsunequalc@de#1{%
508                     \if@F@cite
509                         \@F@citefalse
510                     \else
511                         \if@Y@cite
512                             {\@BAY}%
513                         \fi
514                         {\@BBC}%
515                     \fi
516                 \edef\@cite@undefined{?}%
517                 \def\BBA{\@BBA}%
518                 \@ifundefined{spanishe@\@citeb\APAC@extra@b@citeb}%
519                     {}% skip
520                     {% Use 'e' instead of 'y' in Spanish
521                 \global\let\oldBBA\BBA

```

```

522     \global\def\BBA{e\global\let\BBA\oldBBA}%
523     }%
524     \if@A@cite
525     %%\hyper@natlinkstart{#1}% We remove this line...
526     {\csname b@\@citeb\APAC@extra@b@citeb\endcsname}%
527     %%\hyper@natlinkend% ...and this one.
528     \if@Y@cite
529         {\@BBAY}%
530     \fi
531 \fi
532 \if@Y@cite
533     \hyper@natlinkstart{#1}%
534     {\csname Y@\@citeb\APAC@extra@b@citeb\endcsname}%
535     \hyper@natlinkend
536 \fi
537 \let\BBA\relax
538 }%
539 \fi
540 \fi
541 }%

```

Another thing apacite does `\AtBeginDocument` is set the URL style to monospaced. So we reset it back to normal roman type `\AfterEndPreamble`.

```

542     \urlstyle{APACrm}
543 }%

```

We pre-empt apacite's `\providecommand` of `\doi` with our own definition that includes the doi URI scheme label in the link, remembering to remove the one inserted by `\doiprefix`.

```

544     \newcommand{\doi}[1]{\href{http://dx.doi.org/#1}{\nolinkurl{doi:#1}}}%
545     \renewcommand{\doiprefix}{\unskip}%
546 }{}%
547 }%

```

Both biblatex and apacite use `\bibitemsep` for the space between bibliography items. Just in case they haven't been loaded, though, we protect our setting of that length with an `\ifx` test.

```

548     \ifx\undefined\bibitemsep
549     \else
550         \setlength{\bibitemsep}{1em plus 1ex minus 1ex}%
551     \fi
552 }

```

As mentioned above, if apacite is used, we can use a package option to ensure that the reference list heading appears in the PDF bookmarks.

```

553 \PassOptionsToPackage{numberedbib}{apacite}

```

We, of course, use hyperref for enhancing the PDF with working links, bookmarks, metadata, etc.

```

555 \usepackage
556 [ colorlinks=true
557   , linkcolor=black
558   , anchorcolor=black
559   , citecolor=links
560   , filecolor=black
561   , menucolor=black
562   , runcolor=black
563   , urlcolor=links
564 ]{hyperref}

```

Links should be in roman type, not monospaced.

```

565 \urlstyle{rm}

```

We provide an `\email` command for displaying the email address of the corresponding author.

```

566 \newcommand*{\email}[1]{\href{mailto:#1}{#1}}

```

Once the user has had a chance to provide the metadata, we can add it to the PDF metadata.

```

567 \AtBeginDocument{%
568   \hypersetup
569   { pdftitle={\thetitle}
570     , pdfauthor={\dccp@author}
571     , pdfsubject={\dccp@subject}
572   }

```

The APA has its own style for line breaks in URLs. The `apacite` package provides the code for this, but in case `biblatex` is used instead, we repeat the settings (from 2013/07/21 v6.03) here.

```

573 \ifundefined{Url@force@Tilde}{\def\Url@force@Tilde{\relax}}{}%
574 \def\url@apa@dot{\mathchar"2E }%
575 \def\url@apa@comma{\mathchar"2C }%
576 \def\url@apa@questionmark{\mathchar"3F }%
577 \def\url@apa@exclamation{\mathchar"21 }%
578 \def\url@apa@hyphen{\mathchar"2D }%
579 \def\url@apa@underscore{\_ }%
580 \def\UrlBreaks{\do\@do\|\do\|do\;do\>\do\]\do\)\do\'do+\do=\do\#}%
581 \def\UrlBigBreaks{\do\/\do\:\do@url@hyp}%
582 \def\UrlNoBreaks{\do\(\do\[\do\{\do\<% }% }%
583 \def\UrlOrds{\do*\do~\do\'do\}%
584 \def\UrlSpecials{%
585   \do\.\{\mathbin}\url@apa@dot }%
586   \do\,\{\mathbin}\url@apa@comma }%
587   \do\-\{\mathbin}\url@apa@hyphen }%
588   \do\?\{\mathbin}\url@apa@questionmark }%
589   \do\!\{\mathbin}\url@apa@exclamation }%
590   \do\_ \{\mathbin}\url@apa@underscore }%
591   \do\ {Url@space}\do\%{Url@percent}\do\~M{Url@space}%

```

```

592 \Url@force@Tilde}%
593 \def\Url@OTnonTT{\do\<\langle\do\>\mathbin{\rangle}}\do
594 \_ {\mathbin{\_}}\do\|{\mid}\do\{{\lbrace}\do\}\{\mathbin{\rbrace}}\do
595 \{\mathbin{\backslash}\}\UrlTildeSpecial}
596 }

```

We now embed the Creative Commons licence information in the PDF using an XMP packet. To do this, we employ the same technique as Scott Pakin's hyperxmp (2014/01/02 v2.4). In order to avoid a bug whereby Adobe Acrobat confuses the XMP author information and the regular author information, though, we *only* embed the licence information.

We need to make sure that any characters to appear verbatim in the XMP packet are treated as ordinary characters and not active ones. The likely active characters are symbols and punctuation, so should be treated as other (category 12).

```

598 \begingroup
599 \catcode'\ "=12
600 \catcode'\&=12
601 \catcode'\#=12
602 \catcode'\<=12
603 \catcode'\>=12
604 \catcode'\_ =12

```

We construct the XMP packet as the document begins.

```
605 \AtBeginDocument{%
```

For convenience we define `\sp` to be a level of indent, translating to three spaces.

```
606 \def\sp{\space\space\space}
```

The text of the XMP packet is recorded in `\cc@xmp@packet`. We use `^^J` to break lines.

```

607 \long\gdef\cc@xmp@packet{%
608 <?xpacket begin='' id=''?>^^J%
609 <x:xmpmeta xmlns:x='adobe:ns:meta/'>^^J%
610 <rdf:RDF xmlns:rdf='http://www.w3.org/1999/02/22-rdf-syntax-ns#'>^^J%
611 \sp<rdf:Description rdf:about=''>^^J%
612 \sp\sp xmlns:xapRights='http://ns.adobe.com/xap/1.0/rights/'>^^J%
613 \sp\sp<xapRights:Marked>True</xapRights:Marked>^^J%
614 \sp</rdf:Description>^^J%
615 \sp<rdf:Description rdf:about=''>^^J%
616 \sp\sp xmlns:dc='http://purl.org/dc/elements/1.1/'>^^J%
617 \sp\sp<dc:rights>^^J%
618 \sp\sp\sp<rdf:Alt>^^J%
619 \sp\sp\sp\sp<rdf:li xml:lang='x-default'>This work is licensed under a Creative
Commons Attribution 4.0 International Licence.</rdf:li>^^J%
620 \sp\sp\sp</rdf:Alt>^^J%
621 \sp\sp</dc:rights>^^J%
622 \sp</rdf:Description>^^J%
623 \sp<rdf:Description rdf:about=''>^^J%
624 \sp\sp xmlns:cc='http://creativecommons.org/ns#'>^^J%

```

```

625 \sp\sp<cc:license rdf:resource='http://creativecommons.org/licenses/by/4.0/'>^^J
626 \sp</rdf:Description>^^J%
627 </rdf:RDF>^^J%
628 </x:xmpmeta>^^J%
629 <?xpacket end='r'?>^^J%
630 }%
631 }
632 \endgroup

```

Different workflows require the XMP packet to be embedded in different ways. PdfTeX can inject objects into PDFs natively.

```

633 \newcommand*{\ccxmp@embed@packet@pdftex}{%
634 \bgroup
635 \pdfcompresslevel=0
636 \immediate\pdfobj stream attr {%
637 /Type /Metadata
638 /Subtype /XML
639 }{\cc@xmp@packet}%
640 \pdfcatalog {/Metadata \the\pdflastobj\space 0 R}%
641 \egroup
642 }

```

The `\pdfmark` command defined by hyperref is respected by tools such as Dvipdf, Dvips, Dvipsone, etc.

```

643 \newcommand*{\ccxmp@embed@packet@pdfmark}{%
644 \pdfmark{%
645 pdfmark=/NamespacePush
646 }%
647 \pdfmark{%
648 pdfmark=/OBJ,
649 Raw={/_objdef \string{ccxmp@packet\string} /type /stream}%
650 }%
651 \pdfmark{%
652 pdfmark=/PUT,
653 Raw={\string{ccxmp@packet\string}
654 2 dict begin
655 /Type /Metadata def
656 /Subtype /XML def
657 currentdict
658 end
659 }%
660 }%
661 \pdfmark{%
662 pdfmark=/PUT,
663 Raw={\string{ccxmp@packet\string} (\cc@xmp@packet)}%
664 }%
665 \pdfmark{%
666 pdfmark=/Metadata,
667 Raw={\string{Catalog\string} \string{ccxmp@packet\string}}%
668 }%
669 \pdfmark{%
670 pdfmark=/NamespacePop

```



```
671 }%
672 }
```

Dvipdfm has its own `\special` command for inserting PDF objects, but it is a bit basic and requires advance knowledge of how long (in characters) the object is.

The `\ccxmp@count@spaces` macro counts the number of spaces in its parameter through a process of iteration, adding this figure to `\@tempcnta`.

```
673 \def\ccxmp@count@spaces#1 {%
674   \def\ccxmp@one@token{#1}%
675   \ifx\ccxmp@one@token\@empty
676     \advance\@tempcnta by -1
677   \else
678     \advance\@tempcnta by 1
679     \expandafter\ccxmp@count@spaces
680   \fi
681 }
```

The `\ccxmp@count@non@spaces` command counts the number of non-spaces in its argument through a process of iteration, adding this figure to `\@tempcnta`.

```
682 \newcommand*{\ccxmp@count@non@spaces}[1]{%
683   \def\ccxmp@one@token{#1}%
684   \ifx\ccxmp@one@token\@empty
685   \else
686     \advance\@tempcnta by 1
687     \expandafter\ccxmp@count@non@spaces
688   \fi
689 }
```

The `\ccxmp@string@len` command sets `\@tempcnta` to the number of characters (spaces + non-spaces) in its argument.

```
690 \newcommand*{\ccxmp@string@len}[1]{%
691   \@tempcnta=0
692   \expandafter\ccxmp@count@spaces#1 {} %
693   \expandafter\ccxmp@count@non@spaces#1{}%
694 }
```

So now, finally, is the command for embedding the packet using Dvipdfm.

```
695 \newcommand*{\ccxmp@embed@packet@dvipdfm}{%
696   \ccxmp@string@len{\ccxmp@packet}%
697   \special{pdf: object @ccxmp@packet
698     <<
699     /Type /Metadata
700     /Subtype /XML
701     /Length \the\@tempcnta
702     >>
703     stream^^J\ccxmp@packet endstream%
704   }%
705   \special{pdf: docview
706     <<
707     /Metadata @ccxmp@packet
```

```

708     >>
709   }%
710 }

```

X<sub>Y</sub>TeX creates PDFs with Xdvipdfmx, which supports a simpler `\special` for inserting objects that does not require us to count characters.

```

711 \newcommand*{\ccxmp@embed@packet@xetex}{%
712   \special{pdf:stream @ccxmp@packet (\cc@xmp@packet)
713     <<
714       /Type /Metadata
715       /Subtype /XML
716     >>
717   }%
718   \special{pdf:put @catalog
719     <<
720       /Metadata @ccxmp@packet
721     >>
722   }%
723 }

```

We rely on `hyperref` to tell us how the PDF will be generated (after all, it may not be done in the current pass) and use the respective technique to embed the XMP packet.

```

724 \AtBeginDocument{%
725   \begingroup
726   \def\ccxmp@driver{hpdfetex}%
727   \ifx\ccxmp@driver\Hy@driver
728     \ccxmp@embed@packet@pdftex
729   \else
730     \def\ccxmp@driver{hdvipdfm}%
731     \ifx\ccxmp@driver\Hy@driver
732       \ccxmp@embed@packet@dvipdfm
733     \else
734       \def\ccxmp@driver{hxetex}%
735       \ifx\ccxmp@driver\Hy@driver
736         \ccxmp@embed@packet@xetex
737       \else
738         \@ifundefined{pdfmark}{}{%
739           \ccxmp@embed@packet@pdfmark
740         }%
741       \fi
742     \fi
743   \fi
744 \endgroup
745 }
746 %%
747 %% Copyright (C) 2014 Digital Curation Centre, University of Edinburgh
748 %% <info@dcc.ac.uk>
749 %%
750 %% End of file 'dccpaper-base.tex'.

```

## Appendix C: Installation

### Managed way

The latest stable release of the dccpaper bundle has been packaged for T<sub>E</sub>X Live and MiK<sub>T</sub>E<sub>X</sub>. If you are running T<sub>E</sub>X Live and have tlmgr installed, you can install the bundle simply by running `tlmgr install dccpaper`. If you are running MiK<sub>T</sub>E<sub>X</sub>, you can install the bundle by running `mpm --install=dccpaper`. Both tlmgr and mpm have GUI versions that you might find friendlier.

### Automated way

A makefile is provided which you can use with the Make utility:

- Running `make` generates the derived files
  - README
  - dccpaper.pdf
  - ijdc-v9.cls
  - idcc.cls
  - dccpaper-base.tex
  - dccpaper-apacite.bib
  - dccpaper-biblatex.bib
- Running `make inst` installs the files in the user's T<sub>E</sub>X tree.
- Running `make install` installs the files in the local T<sub>E</sub>X tree.

### Manual way

1. Compile `dccpaper.dtx` just as you would a normal L<sup>A</sup>T<sub>E</sub>X file. Bear in mind the documentation requires the biblatex package and the Biber tool rather than regular Bib<sub>T</sub>E<sub>X</sub>. As well as the usual PDF (or DVI) and auxiliary files, several others are generated.
2. Rename `README.txt` to `README` (if you like).
3. Move the files to your T<sub>E</sub>X tree as follows:
  - `source/latex/dccpaper`: `dccpaper.dtx`, `dccpaper.ins`
  - `tex/latex/dccpaper`: `ijdc-v9.cls`, `idcc.cls`, `dccpaper-base.tex`, `dccpaper-by.eps`, `dccpaper-by.pdf`
  - `doc/latex/dccpaper`: `dccpaper.pdf`, `dccpaper-apacite.bib`, `dccpaper-biblatex.bib`, `README`
4. You may then have to update your installation's file name database before T<sub>E</sub>X and friends can see the files.

## Appendix D: Licence

Copyright © 2014 Digital Curation Centre, University of Edinburgh.

This work consists of the image files dccpaper-by.eps and dccpaper-by.pdf, the documented LaTeX file dccpaper.dtx and a Makefile.

The text files contained in this work may be distributed and/or modified under the conditions of the [LaTeX Project Public License \(LPPL\)](#), either version 1.3c of this license or (at your option) any later version.

The image files distributed with this bundle derive from the file [by.eps](#) distributed by Creative Commons. The image is a trademark of Creative Commons and is subject to the [Creative Commons trademark policy](#).

This work is “maintained” (as per LPPL maintenance status) by [Alex Ball](#).

The file dccpaper.pdf, generated by this work, is licensed as shown on page 1.