

The dccpaper bundle: Classes for submissions to IJDC and IDCC

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Abstract

This is the documentation for the [dccpaper](#) bundle, consisting of the following classes:

- `ijdc-v14`, which corresponds to the template used by the International Journal of Digital Curation, beginning with volume 14.
- `ijdc-v9`, which corresponds to the template used by the International Journal of Digital Curation for volumes 9 and 13 inclusive.
- `idcc`, which corresponds to the template used for the International Digital Curation Conference, beginning with IDCC15.

The version to which it relates is v2.0, last revised 2020-01-15.

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.

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Introduction

The L^AT_EX class `ijdc-v14` produces camera-ready papers and articles suitable for inclusion in the International Journal of Digital Curation, with applicability from volume 14 onwards. This is a minor change to the template used for volumes 9–13, which remains available as `ijdc-v9`. 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 L^AT_EX 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.
- `iftex` is used to test which T_EX engine you are using. If you use LuaL^AT_EX or XeL^AT_EX you will also need `fontspec`.

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

- If using the `ijdc-v14` class or the `idcc` class for conferences from 2020, the main text font will be the first available out of Baskerville, BaskervilleF (`baskervillef`), Baskervaldx (`baskervaldx`), Baskervald (`baskervaldadf`), or the standard Computer Modern/Latin Modern. The sans-serif font will be the first available out of Lucida Sans, Go Sans (`gofonts`) or Helvetica (`helvet`).
- If using the `ijdc-v9` class or the `idcc` class for conferences up to 2019, `newtx` will be used if available in place of `mathptmx`, and `tgheros` will be used in place of `helvet`.
- `xcolor` will be used if available in place of `color`.

For referencing, you are encouraged to use either `biblatex-apa` (preferred) or `apacite`.

Loading the Classes

International Journal of Digital Curation

The class is loaded in the usual way with `\documentclass[<options>]{ijdc-v14}`. The following options are available:

paper Use this for research papers.

article Use this for general articles if you like, but you do not have to as the class defaults to this state.

editorial Use this for an editorial.

preprint Use this for a conference preprint.

International Digital Curation Conference

The class is loaded in the usual way with `\documentclass[<options>]{idcc}`. Two types of option are available. The first relates to the conference to which the submission will be made:

15, 16, 17, 18, 19, 20 Use this to select the year of the conference, e.g. **20** for 2020.

The second relates to the type of submission:

abstract Use this for research and practice paper extended abstracts. It is normally the default.

research Use this for full research papers.

practice Use this for full practice papers. This becomes the default if you select one of the options for the 2015 to 2018 conferences inclusive.

lightning Use this for lightning talk proposals.

data (Legacy.) Use this for data paper abstracts and full data papers.

poster Use this for poster proposals.

demo Use this for demonstration proposals.

bof (Legacy.) Use this for Birds of a Feather session proposals.

workshop Use this for workshop proposals.

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[{name}]{{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, for a full paper or an IDCC extended abstract, you would start as in Figure 1.

```
\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 or IDCC paper.

Please note that if submitting a poster, lightning talk or demonstration proposal to the IDCC instead of a paper, you should *not* use the `abstract` environment. Instead, start with a section headed ‘Abstract’ as in Figure 2 (for posters or lightning talks) or Figure 3 (overleaf, for demonstrations). Further guidance on how to write such submissions is given on the conference website.

If submitting a workshop proposal, please see the second document template in Appendix D.

```
\begin{document}
\maketitle

\section{Abstract}

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

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

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.

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.

```

\begin{document}
\maketitle

\begin{description}
\item[Demo Organiser(s):]~\
Name, position, organization.
\end{description}

\section{Abstract}

The text of the proposal starts here\dots

```

Figure 3. Sample code for the beginning of an IDCC demonstration proposal.

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. The top and bottom rules should be drawn with `\toprule` and `\bottomrule` respectively, with other rules drawn with `\midrule` or `\cmidrule`. 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 and appear above the table.

Table 1 on the following page demonstrates these features. The code used to produce the table is shown in Figure 4 (the `dccolumn` package was loaded in the preamble). Note the different relative positions of the table and figure captions.

Reference List and Citations

As mentioned above, you are encouraged to use either `biblatex-apa` (with `biblatex/biber`) or `apacite` (with `BibTeX`) to generate your 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}
```

Prior to the release of `biblatex-apa` v7.5, you also needed this line:

```
\DeclareLanguageMapping{british}{british-apa}
```

Include `\printbibliography` at the end of the document to print the list.

- 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 et al. (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 in the reference list, i.e. alphabetically by author, with co-authored works coming after singly-authored works, then chronologically (Borgman et al., 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.¹ 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.²

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 et al., 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.

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

² This avoids unnecessary page turning or scrolling.

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

```

\begin{table}
\caption{Papers and articles published in the IJDC in 2008 and 2009.}
\label{tab:issues}
\centering\small
\begin{tabular}{lD..{2.0}D..{2.0}D..{2.1}D..{2.1}}
\toprule
& \multicolumn{2}{c}{Frequency} & \multicolumn{2}{c}{Percentage} \\
\cmidrule(lr){2-3}\cmidrule(1){4-5}
Issue
& \multicolumn{1}{c}{Peer-reviewed} & \multicolumn{1}{c}{General}
& \multicolumn{1}{c}{Peer-reviewed} & \multicolumn{1}{c}{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 4. Code used to typeset Table 1.

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.
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- Consultative Committee for Space Data Systems. (2012). *Reference model for an Open Archival Information System (OAIS)* (Magenta Book CCSDS 650.0-M-2). <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]. Report of the Warwick Workshop, November 7–8, 2005. 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. <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*. http://www.nsf.gov/publications/pub_summ.jsp?ods_key=cise051203
- Rinaldo, C., Warnement, J., Baione, T., Kalfatovic, M. R. & Fraser, S. (2011). Retooling special collections digitisation in the age of mass scanning. *Ariadne*, 67. <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]. <ftp://ftp.itri.bton.ac.uk/reports/ITRI-04-02.pdf>

Santini, M. (2004b). *State-of-the-art on automatic genre identification* (Technical Report ITRI-04-03). Information Technology Research Institute. <ftp://ftp.itri.bton.ac.uk/reports/ITRI-04-03.pdf>

Smith, M., Barton, M., Bass, M., Branschovsky, 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

- v2.0** 2020-01-15
Added new formatting for IJDC volume 14 and IDCC 20.
- v1.8.1** 2019-10-07
Updated to work with changed L^AT_EX internals.
- v1.8** 2019-03-08
Added details of IDCC 2020.
- v1.7.1** 2018-05-14
Fixed loading of maths fonts. Reverted experimental formatting.
- v1.7** 2018-05-01
Added details of IDCC 2019, along with new formatting and submission types.
- v1.6** 2017-10-20
Added details of IDCC 2018. Allowed files to be unpacked by T_EX without compiling. Refactored some documentation commands for efficiency.
- v1.5** 2016-08-05
Added details of IDCC 2017. Slightly refactored code to convert dccpaper-base.tex into a package, dccpaper-base.sty.
- v1.4.1** 2015-06-22
Fixed bug preventing compilation in DVI mode.
- v1.4** 2015-05-22
Added details of IDCC 2016. Improved whitespace handling. Fixed bug triggered by `demo` option. Fixed missing use of `\Authfont`. Added missing DOI tweak for [biblatex-apa](#).
- v1.3.2** 2015-01-21
Removed dependence on user supplying a title. Fixed bug triggered by numbered sections.
- 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-v14.cls and ijdc-v9.cls

The type of paper is recorded in `\dccp@type`. The possible values are ‘General Article’, ‘Research Paper’ (was ‘Peer-Reviewed Paper’), 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}
```

We provide a boolean for switching formatting depending on whether this document is an IDCC proposal or not.

```
23 \newif\ifdcp@proposal
```

These four options set `\dccp@type` appropriately. The `editorial` option additionally switches page numbers to roman numerals.

```
24 \DeclareOption{editorial}{\let\dccp@type=\dccp@editorial%
25   \AtBeginDocument{% Editorials use Roman numerals for page numbers
26     \pagenumbering{roman}%
27     \renewcommand{\thelastpage}{\@roman\c@lastpage}%
28   }%
29 }
```

The `ijdc-v14` template uses the term ‘Research Paper’.

```
30 \DeclareOption{paper}{\def\dccp@type{Research Paper}}
```

The `ijdc-v9` template uses the term ‘Peer-Reviewed Paper’.

```
30 \DeclareOption{paper}{\def\dccp@type{Peer-Reviewed Paper}}
```

The `article` option is redundant, but included for symmetry with `paper`.

```
31 \DeclareOption{preprint}{\def\dccp@type{Conference Preprint}}
32 \DeclareOption{article}{\def\dccp@type{General Article}}
33 \ProcessOptions\relax
```

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

```
35 \def\dccp@publ@long{International Journal of Digital Curation}
36 \def\dccp@publ@short{IJDC}
37 \def\dccp@publ@msg{The \emph{\dccp@publ@long} is an international journal
38 committed to scholarly excellence and dedicated to the advancement of digital
39 curation across a wide range of sectors. The \dccp@publ@short\ is published by
```

```

40 the University of Edinburgh on behalf of the Digital Curation Centre. ISSN:
41 1746-8256. URL: \url{http://www.ijdc.net/}}
42 \def\dccp@titlefoot@bib{%
43   \dccp@publ@long\
44   \thedata, Vol.\ \thevolume, Iss.\ \theissue, \thepage--\thelastpage.%
45 }
46 \def\dccp@titlefoot@doi{%
47   \url{https://doi.org/\thedoi}\
48   DOI: \thedoi
49 }
50 \def\dccp@normhead@doi{doi:\thedoi}

```

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

```

51 \def\dccp@subject{\dccp@publ@long, \thedata, Vol.\ \thevolume, Iss.\ \theissue}

```

Different fonts are used depending on the volume. The `ijdc-v14` template uses Baskerville as the main text font.

```

53 \def\dccp@variant{baskerville}

```

The `ijdc-v9` template uses Times.

```

53 \def\dccp@variant{times}

```

The class is based on the `article` class, and uses A4 paper.

```

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

```

The rest of the formatting happens in the following file.

```

57 \RequirePackage{dccpaper-base}

```

idcc.cls

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 `\dccp@type`. The values can be ‘Research Paper’, ‘Practice Paper’, ‘Poster’, ‘Demonstration’, or ‘Workshop’.

```
27 \def\dccp@type@fallback{Extended Abstract}
28 \def\dccp@type{\dccp@type@fallback}
```

We provide a boolean for switching formatting depending on whether this document is an IDCC proposal or not.

```
29 \newif\ifdcc@proposal
```

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

```
30 \DeclareOption{abstract}{\def\dccp@type{Extended Abstract}}
31 \DeclareOption{research}{\def\dccp@type{Research Paper}}
32 \DeclareOption{lightning}{\def\dccp@type{Lightning Talk}\dccp@proposaltrue}
33 \DeclareOption{data}{\def\dccp@type{Data Paper}}
34 \DeclareOption{poster}{\def\dccp@type{Poster}\dccp@proposaltrue}
35 \DeclareOption{demo}{\def\dccp@type{Demonstration}\dccp@proposaltrue}
36 \DeclareOption{bof}{\def\dccp@type{Birds of a Feather}\dccp@proposaltrue}
37 \DeclareOption{workshop}{\def\dccp@type{Workshop}\dccp@proposaltrue}
38 \DeclareOption{practice}{\def\dccp@type{Practice Paper}\dccp@proposaltrue}
```

Different fonts are used depending on the year of the conference. Since 2020, Baskerville is used as the main text font. Previously, Times was used.

```
39 \def\dccp@variant{baskerville}
```

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`.

```
40 \DeclareOption{15}{%
41   \def\dccp@publ@short{IDCC15}
42   \def\dccp@publ@msg{The 10th \dccp@publ@long\ takes place on 9--12 February
43     2015 in London. URL: \url{http://www.dcc.ac.uk/events/idcc15/}}
44   \def\dccp@subject{10th \dccp@publ@long, 2015}
45   \def\dccp@type@fallback{Practice Paper}
46   \def\dccp@variant{times}
47 }
48 \DeclareOption{16}{%
49   \def\dccp@publ@short{IDCC16}
50   \def\dccp@publ@msg{The 11th \dccp@publ@long\ takes place on 22--25 February
51     2016 in Amsterdam. URL: \url{http://www.dcc.ac.uk/events/idcc16/}}
52   \def\dccp@subject{11th \dccp@publ@long, 2016}
53   \def\dccp@type@fallback{Practice Paper}
54   \def\dccp@variant{times}
55 }
56 \DeclareOption{17}{%
57   \def\dccp@publ@short{IDCC17}
58   \def\dccp@publ@msg{The 12th \dccp@publ@long\ takes place on 20--23 February
```



```

59 2017 in Edinburgh. URL: \url{http://www.dcc.ac.uk/events/idcc17/}}
60 \def\dccp@subject{12th \dccp@publ@long, 2017}
61 \def\dccp@type@fallback{Practice Paper}
62 \def\dccp@variant{times}
63 }
64 \DeclareOption{18}{%
65 \def\dccp@publ@short{IDCC18}
66 \def\dccp@publ@msg{The 13th \dccp@publ@long\ takes place on 19--22 February
67 2018 in Barcelona. URL: \url{http://www.dcc.ac.uk/events/idcc18/}}
68 \def\dccp@subject{13th \dccp@publ@long, 2018}
69 \def\dccp@type@fallback{Practice Paper}
70 \def\dccp@variant{times}
71 }
72 \DeclareOption{19}{%
73 \def\dccp@publ@short{IDCC19}
74 \def\dccp@publ@msg{The 14th \dccp@publ@long\ takes place on 4--7 February
75 2019 in Melbourne. URL: \url{http://www.dcc.ac.uk/events/idcc19/}}
76 \def\dccp@subject{14th \dccp@publ@long, 2019}
77 \def\dccp@variant{times}
78 }
79 \DeclareOption{20}{%
80 \def\dccp@publ@short{IDCC20}
81 \def\dccp@publ@msg{The 15th \dccp@publ@long\ takes place on 17--20 February
82 2020 in Dublin. URL: \url{http://www.dcc.ac.uk/events/idcc20/}}
83 \def\dccp@subject{15th \dccp@publ@long, 2020}
84 }
85 \ProcessOptions\relax

```

The `demo` option, if passed, would be passed on to the `graphics` package wreaking havoc with each and every included image. To avoid this, we clear it from the list of class options using code from Enrico Gregorio.

```

87 \def\@clearglobaloption#1{%
88 \def\@tempa{#1}%
89 \def\@tempb{\@gobble}%
90 \@for\next:=\@classoptionslist\do{%
91 \ifx\next\@tempa
92 \message{Option \next\space has been hidden from subsequent packages}%
93 \else
94 \edef\@tempb{\@tempb,\next}%
95 \fi
96 }%
97 \let\@classoptionslist\@tempb
98 \expandafter\ifx\@tempb\@gobble
99 \let\@classoptionslist\@empty
100 \fi
101 }
102 \@clearglobaloption{demo}

```

The class is based on the `article` class, and uses A4 paper.

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

The rest of the formatting happens in the following file.

```
106 \RequirePackage{dccpaper-base}
```

dccpaper-base.sty

The `dccpaper` classes are deliberately very similar. This package contains the common code.

We use British English orthography.

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

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

```
22 \RequirePackage{etoolbox,xpatch}
```

The code for setting fonts is a little complicated to cope with several variations of what people might have installed, plus the two typographical variants of the IJDC and IDCC templates. Generally speaking, we use OTF fonts with Lua \LaTeX and Xe \LaTeX , Type 1 fonts with PDF \LaTeX , and `newtxmath` for mathematics.

Please note that `newtxmath` v1.55 is incompatible with `biblatex`, but earlier and later versions (starting v1.551) are compatible.

Here is the font selection cascade when PDF \LaTeX is used. Our options are limited by the support files available through CTAN. Users of the Lucida fonts from TUG are invited to feed back on whether this works successfully or not.

```
23 \RequirePackage{iftex}
24 \ifPDFTeX
25   \RequirePackage[T1]{fontenc}
26   \ifdefstring{\dccp@variant}{baskerville}{%
27     \IfFileExists{baskervillef.sty}{
28       \RequirePackage[scaled=.95]{baskervillef}
29       \RequirePackage[baskerville,vvarbb]{newtxmath}
30     }{
31       \IfFileExists{Baskervaldx.sty}{
32         \RequirePackage[scaled=.95]{baskervaldx}
33         \RequirePackage[baskervaldx,vvarbb]{newtxmath}
34       }{
35         \IfFileExists{baskervald.sty}{
36           \RequirePackage{baskervald}
37           \RequirePackage[baskervaldx,vvarbb]{newtxmath}
38         }{}
39       }
40     }
41   \IfFileExists{lsr.pfb}{%
42     \renewcommand{\sfdefault}{hls}
43     \def\hls@scale{0.805}
44   }{%
45     \IfFileExists{GoSans.sty}{%
46       \RequirePackage[scale=.8]{GoSans}
47     }{%
48       \RequirePackage[scaled=0.82]{helvet}}}
```

49 }{%

When `newtxtext` is use, it emulates `tgheros` so all we have to do is set the scaling factor; but it also switches the monospaced font, so we have to switch it back.

```

50 \IfFileExists{newtxtext.sty}{%
51   \RequirePackage{newtxtext,newtxmath}
52 }{%
53   \RequirePackage{mathptmx}}
54 \IfFileExists{tgheros.sty}{%
55   \ifx\undefined\qhv@scale
56   \RequirePackage[scale=0.92]{tgheros}\else
57   \def\qhv@scale{0.92}\fi
58 }{%
59   \RequirePackage[scaled=0.92]{helvet}}
60 \renewcommand{\ttdefault}{cmtt}
61 }
```

Here is the font selection cascade used for `LuaATeX` and `XYTeX`. There are a few more options that come from system fonts people may have installed. We have to be a little careful when mixing OTF and Type 1 fonts.

Here is the Baskerville/Lucida selection:

```

62 \else
63   \RequirePackage{fontspec}
64   \ifdefstring{\dccp@variant}{baskerville}{%
65     \IfFontExistsTF{Baskerville}{%
66       \setmainfont{Baskerville}
67       \RequirePackage[baskerville,vvarbb]{newtxmath}
68     }{%
69       \IfFileExists{baskervillef.sty}{%
70         \setmainfont[Scale=.95]{BaskervilleF}
71         \RequirePackage[baskerville,vvarbb]{newtxmath}
72       }{%
73         \IfFileExists{Baskervaldx.sty}{%
74           \setmainfont[Scale=.95]{baskervaldx}
75           \RequirePackage[baskervaldx,vvarbb]{newtxmath}
76         }{%
77           \IfFileExists{baskervald.sty}{%
78             \RequirePackage[T1]{fontenc}
79             \RequirePackage{baskervald}
80             \RequirePackage[baskervaldx,vvarbb]{newtxmath}
81           }{}
82         }
83       }
84     }
85   \IfFontExistsTF{Lucida Sans}{%
86     \setsansfont[Scale=.805]{Lucida Sans}
87   }{
88     \IfFontExistsTF{LucidaSansOT}{%
89       \setsansfont[Scale=.805]{LucidaSansOT}
90     }{%
91       \IfFileExists{GoSans.sty}{%
92         \RequirePackage[scale=.8]{GoSans}
93       }{%
```

```

94     \@ifpackageloaded{fontenc}{}{%
95         \appto\sffamily{\fontencoding{T1}\selectfont}
96     }
97     \RequirePackage[scaled=0.82]{helvet}
98 }
99 }
100 }
101 }{%

```

Here is the Times/Helvetica selection:

```

102 \IfFileExists{newtxtext.sty}{%
103     \setmainfont{TeXGyreTermesX}
104     \RequirePackage{newtxmath}
105 }{%
106     \RequirePackage[T1]{fontenc}
107     \RequirePackage{mathptmx}
108 }
109 \IfFontExistsTF{texgyreheros-regular.otf}{%
110     \setsansfont{texgyreheros}%
111     [ Extension = .otf
112     , UprightFont = *-regular
113     , ItalicFont = *-italic
114     , BoldFont = *-bold
115     , BoldItalicFont = *-bolditalic
116     , Scale = 0.92
117     ]
118 }{%
119     \IfFileExists{newtxtext.sty}{%
120         \appto\sffamily{\fontencoding{T1}\selectfont}%
121     }{}
122     \RequirePackage[scaled=0.92]{helvet}
123 }
124 }

```

In both variants, the monospaced font is left untouched as the `fontspec` default.

Using `newtxmath` for mathematics generally works, but the package assumes certain characters will fall back to text equivalents, which works under T1 encoding but not under the TU encoding used by `fontspec`. This solution is from egreg's answer on TeX.se: <https://tex.stackexchange.com/a/394139>.

```

125 \@ifpackageloaded{newtxmath}{%
126     \DeclareSymbolFont{oldoperators}{OT1}{ntxtlf}{m}{n}
127     \SetSymbolFont{oldoperators}{bold}{OT1}{ntxtlf}{b}{n}
128     \AtBeginDocument{%
129 \DeclareMathSymbol{0}{\mathalpha}{operators}{`0}%
130 \DeclareMathSymbol{1}{\mathalpha}{operators}{`1}%
131 \DeclareMathSymbol{2}{\mathalpha}{operators}{`2}%
132 \DeclareMathSymbol{3}{\mathalpha}{operators}{`3}%
133 \DeclareMathSymbol{4}{\mathalpha}{operators}{`4}%
134 \DeclareMathSymbol{5}{\mathalpha}{operators}{`5}%
135 \DeclareMathSymbol{6}{\mathalpha}{operators}{`6}%
136 \DeclareMathSymbol{7}{\mathalpha}{operators}{`7}%
137 \DeclareMathSymbol{8}{\mathalpha}{operators}{`8}%
138 \DeclareMathSymbol{9}{\mathalpha}{operators}{`9}%

```

```

139 \DeclareMathSymbol{\Gamma}{\mathalpha}{oldoperators}{"00}%
140 \DeclareMathSymbol{\Delta}{\mathalpha}{oldoperators}{"01}%
141 \DeclareMathSymbol{\Theta}{\mathalpha}{oldoperators}{"02}%
142 \DeclareMathSymbol{\Lambda}{\mathalpha}{oldoperators}{"03}%
143 \DeclareMathSymbol{\Xi}{\mathalpha}{oldoperators}{"04}%
144 \DeclareMathSymbol{\Pi}{\mathalpha}{oldoperators}{"05}%
145 \DeclareMathSymbol{\Sigma}{\mathalpha}{oldoperators}{"06}%
146 \DeclareMathSymbol{\Upsilon}{\mathalpha}{oldoperators}{"07}%
147 \DeclareMathSymbol{\Phi}{\mathalpha}{oldoperators}{"08}%
148 \DeclareMathSymbol{\Psi}{\mathalpha}{oldoperators}{"09}%
149 \DeclareMathSymbol{\Omega}{\mathalpha}{oldoperators}{"0A}%
150 \DeclareMathSymbol{!}{\mathclose}{operators}{"21}%
151 \DeclareMathSymbol{+}{\mathbin}{operators}{"2B}%
152 \DeclareMathSymbol{:}{\mathrel}{operators}{"3A}%
153 \DeclareMathSymbol{;}{\mathpunct}{operators}{"3B}%
154 \DeclareMathSymbol{=}{\mathrel}{operators}{"3D}%
155 \DeclareMathSymbol{?}{\mathclose}{operators}{"3F}%
156 \DeclareMathDelimiter{({\mathopen}{operators}{"28}{largesymbols}{"00}%
157 \DeclareMathDelimiter{)}{\mathclose}{operators}{"29}{largesymbols}{"01}%
158 \DeclareMathDelimiter{[}{\mathopen}{operators}{"5B}{largesymbols}{"02}%
159 \DeclareMathDelimiter{]}\mathclose}{operators}{"5D}{largesymbols}{"03}%
160 \DeclareMathAccent{\acute}{\mathalpha}{operators}{"B4}%
161 \ifLuaTeX\DeclareMathAccent{\grave}{\mathalpha}{operators}{"60}\fi
162 \DeclareMathAccent{\ddot}{\mathalpha}{operators}{"A8}%
163 \DeclareMathAccent{\tildel}{\mathalpha}{oldoperators}{"7E}%
164 \DeclareMathAccent{\bar}{\mathalpha}{oldoperators}{"16}%
165 \DeclareMathAccent{\breve}{\mathalpha}{oldoperators}{"15}%
166 \DeclareMathAccent{\check}{\mathalpha}{oldoperators}{"14}%
167 \DeclareMathAccent{\hat}{\mathalpha}{oldoperators}{"5E}%
168 \DeclareMathAccent{\dot}{\mathalpha}{oldoperators}{"5F}%
169 \DeclareMathAccent{\mathring}{\mathalpha}{oldoperators}{"17}%
170 \DeclareMathSymbol{\mathdollar}{\mathord}{operators}{"24}%
171 }%
172 }
173 \fi

```

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.

```

174 \RequirePackage{graphicx}
175 \IfFileExists{xcolor.sty}%
176   {\RequirePackage{xcolor}}%
177   {\RequirePackage{color}}
178 \definecolor[named]{struct}{rgb}{0,0.5,0.5}
179 \definecolor[named]{links}{rgb}{0,0.4,0.4}

```

We will calculate some lengths later.

```

180 \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.

```
182 \let\OrigLineBreak\
183 \newdimen\RaggedParindent
184 \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.

```
186 \newcommand{\raggedyright}[1][2em]{%
187   \let\\\@centercr\@rightskip \z@ \@plus #1\relax
188   \rightskip\@rightskip
189   \leftskip\z@skip
190   \parindent\RaggedParindent}
191 \AtBeginDocument{\raggedyright}
```

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

```
193 \newcommand*{\flushleftright}{%
194   \let\\\OrigLineBreak
195   \leftskip\z@skip
196   \rightskip\leftskip
197   \parfillskip\@flushglue
198   \everypar{}}
```

Pd_fT_EX 1.40.15 introduced the facility to include dummy interword spaces to improve text extraction and reflow. It would be really, really nice if we could switch this on if available, but unfortunately it triggers a long-standing bug in MikTeX: <https://tex.stackexchange.com/q/318425>

```
200 \RequirePackage{ifpdf}
201 \newtoggle{dccp@dummyspaces}
202 \def\fixspaces{\toggletrue{dccp@dummyspaces}}
203 \def\nofixspaces{\togglefalse{dccp@dummyspaces}}
204 \AtBeginDocument{%
205   \iftoggle{dccp@dummyspaces}{%
206     \ifpdf
207     \ifdef{\pdfinterwordspaceon}{\pdfinterwordspaceon}{}%
208     \fi
209   }{}%
210 }
```

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.

```
212 \def\thecorrespondence{}
213 \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.

```
214 \newcommand*{\Authfont}{\normalfont}
215 \newcommand*{\Affilfont}{\normalfont\small}
216 \newlength{\affilsep}\setlength{\affilsep}{0pt}
217 \newlength{\authblksep}\setlength{\authblksep}{1.5\baselineskip}
```

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

```
218 \newcommand{\AuthorBlock}{} 
```

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

```
219 \newcommand{\MainAuthor}{} 
```

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

```
220 \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.

```
221 \newcounter{authors}
222 \newcounter{authorsinblock}
223 \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.

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

The new definition of the author command starts here.

```
225 \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`.

```
226 \ifnum\theauthors=0
227 \def\dccp@author{#1}%
228 \def\MainAuthor{#1}%
229 \else
230 \appto\dccp@author{, #1}%
231 \ifnum\theauthors=1%
232 \def\OtherMainAuthors{ and #1}%
233 \appto\MainAuthor{\OtherMainAuthors}%
234 \else
235 \ifnum\theauthors=2%
236 \def\OtherMainAuthors{ et al.}%
237 \fi
238 \fi
239 \fi
240 \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.

```
241 \ifnum\theauthorsinblock=0%
242 \stepcounter{block}%
243 \expandafter\def\csname block\roman{block}@auth\endcsname{\Authfont#1}%
244 \ifnum\theblock>1\appto\AuthorBlock{\quad}\fi
245 \appto\AuthorBlock{%
246 \stepcounter{block}%
247 \begin{minipage}[t]{0.45\textwidth}\centering
248 \csname block\roman{block}@auth\endcsname
249 \ifx\undefined\csname block\roman{block}@affil\endcsname
250 \else
251 \\\[\affilsep]\csname block\roman{block}@affil\endcsname
252 \fi
253 \end{minipage}%
254 \rule{0pt}{2\baselineskip}%
255 }
256 \else
```

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

```
257 \csappto{block\roman{block}@auth}{, #1}%
258 \fi
259 \stepcounter{authorsinblock}%
260 }
```


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

```
261 \newcommand{\affil}[1]{%
262   \expandafter\def\csname block\roman{block}@affil\endcsname{\Affilfont#1}%
263   \setcounter{authorsinblock}{0}%
264 }
```

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

```
266 \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`.

```
267 \let\ProperTitle=\title
268 \renewcommand{\title}[2][\empty]{
269   \ifx\empty #1%
270     \renewcommand*{\HeadTitle}{#2}%
271   \else
272     \renewcommand*{\HeadTitle}{#1}%
273   \fi%
274   \begingroup\let\footnote@gobble
275   \ProperTitle{#2}%
276   \begingroup
277   \renewcommand{\thanks}[1]{}
278   \protected@xdef\thetitle{#2}
279   \endgroup\endgroup
280 }
```

To prevent L^AT_EX throwing an error if no title is supplied, we supply a fallback value and issue a warning instead.

```
281 \def\thetitle{%
282   Please supply a title
283   \ClassWarning{dcccpaper}{%
284     Please supply a title in the preamble with \noexpand\title{}%
285   }
286 }
```

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

```
288 \xpretocmd{\date}{\begingroup\let\footnote@gobble}{}{}%
289 \xapptocmd{\date}{%
290   \begingroup
291   \renewcommand{\thanks}[1]{}
292   \protected@xdef\thedata{#1}
293   \endgroup\endgroup%
294 }{}{}%
```

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

```
295 \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`.

```
297 \newcommand*\thevolume{0}
298 \newcommand*\volume[1]{\renewcommand*\thevolume{#1}}
299 \newcommand*\theissue{0}
300 \newcommand*\issue[1]{\renewcommand*\theissue{#1}}
301 \newcommand*\thesubno{0}
302 \newcommand*\subno[1]{\renewcommand*\thesubno{#1}\fixspaces}
303 \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.

```
304 \newcounter{lastpage}
305 \setcounter{lastpage}{0}
306 \newcommand{\dol@stpage}{%
307   \if@filesw
308     \addtocounter{page}{-1}%
309     \immediate\write\@auxout%
310       {\string\setcounter{lastpage}{\the\c@page}}%
311     \stepcounter{page}%
312   \fi
313 }
314 \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.

```
316 \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.

```

317 \newcommand*{\submitted}[1]{%
318   \def\dccp@dates{\emph{Submitted} #1}}
319 \newcommand*{\received}[1]{%
320   \def\dccp@dates{\emph{Received} #1}}
321 \newcommand*{\revised}[1]{%
322   \appto\dccp@dates{%
323     \space\space\space
324     \ifdefstring{\dccp@variant}{baskerville}{~}{\textbar}%
325     \space\space\space
326     \emph{Revision received} #1}%
327   }
328 \newcommand*{\accepted}[1]{%
329   \appto\dccp@dates{%
330     \space\space\space
331     \ifdefstring{\dccp@variant}{baskerville}{~}{\textbar}%
332     \space\space\space
333     \emph{Accepted} #1}%
334   }

```

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`.

```

335 \let\dccp@conf=\empty
336 \newcommand*{\conference}[1]{%
337   \renewcommand*{\dccp@conf}{An earlier version of this paper was presented at #1.
338   }%
339 }

```

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).

```

340 \newcommand{\FixTextHeight}{%
341   \setlength\@tempdima{\textheight}%
342   \addtolength\@tempdima{-\topskip}%
343   \@tempcnta\@tempdima
344   \@tempcntb\baselineskip
345   \divide\@tempcnta\@tempcntb
346   \setlength\@tempdimb{\baselineskip}%
347   \multiply\@tempdimb\@tempcnta
348   \advance\@tempdima-\@tempdimb
349   \global\advance\footskip\@tempdima
350   \multiply\@tempdima\tw@
351   \ifdim\@tempdima>\baselineskip
352     \addtolength\@tempdimb{\baselineskip}%
353     \global\advance\footskip-\baselineskip
354   \fi
355   \addtolength\@tempdimb{\topskip}%
356   \global\textheight\@tempdimb
357 }

```

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).

```
359 \setlength{\textwidth}{150mm}
360 \setlength{\oddsidemargin}{30mm - \hoffset - 1in}
361 \setlength{\evensidemargin}{30mm - \hoffset - 1in}
```

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

```
362 \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.

```
363 \setlength{\topmargin}{15mm - \voffset - 1in}
364 \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.

```
366 \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.

```
367 \def\ps@title{%
368   \def\@oddhead{%
369     \begin{minipage}{\textwidth}%
370       \centering
371       \ifdefstring{\dccp@variant}{baskerville}{\huge\sffamily}{\LARGE\bfseries}%
372       \color{struct}%
373       \ifx\dccp@type\dccp@editorial
374         \dccp@publ@long
375       \else
376         \dccp@publ@short\space\space\textbar\space\space\emph{\dccp@type}%
377       \fi
378       \par
379     \end{minipage}%
380   }%
381   \let\@evenhead=\@oddhead
382   \let\TitleHead=\@oddhead
383   \def\@oddfoot{%
384     \begin{minipage}[b]{\textwidth}%
385       \fontsize{9pt}{11pt}\selectfont
386       \ifx\dccp@type\dccp@editorial
387         \else
```

```

388     {\centering\dccp@dates\par}
389     \bigskip
390     Correspondence should be addressed to \thecorrespondence\par
391     \bigskip
392     \fi
393     \ifx\empty\dccp@conf
394     \else
395         \dccp@conf\par
396         \bigskip
397     \fi
398     \dccp@publ@msg\par
399     \bigskip
400     \begin{minipage}[b]{\linewidth - 25mm}
401     Copyright rests with the authors. This work is released under a Creative
402     Commons Attribution 4.0 International Licence. For details please see
403     \url{http://creativecommons.org/licenses/by/4.0/}%
404     \end{minipage}\hfill
405     \begin{minipage}[b]{19mm}
406         \href{http://creativecommons.org/licenses/by/4.0/}%
407         {\includegraphics[width=\hsize]{dccpaper-by}}%
408     \end{minipage}
409     \par
410     \bigskip
411     \makebox[0pt][l]{\parbox{0.4\hsize}{%
412         \ifx\undefined\dccp@titlefoot@bib\else\dccp@titlefoot@bib\fi
413     }}\hfill
414     \makebox[0pt][c]{\normalsize\thepage}\hfill
415     \makebox[0pt][r]{\parbox{0.4\hsize}{%
416         \raggedleft\ifx\undefined\dccp@titlefoot@doi\else\dccp@titlefoot@doi\fi
417     }}%
418     \end{minipage}%
419     }%
420     \let\@evenfoot=\@oddfoot
421     \let\TitleFoot=\@oddfoot
422 }

```

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.

```
423 \pagestyle{title}
```

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

```
424 \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.

```

426 \def\ps@dccpaper{%
427     \def\@oddhead{%
428         \begin{minipage}{\textwidth}\frenchspacing
429         {%
430             \fontsize{9pt}{11pt}\selectfont
431             \ifx\undefined\dccp@normhead@doi\else\dccp@normhead@doi\fi

```

```

432     }\hfill
433     {\MainAuthor}\space\space\space
434     \textcolor{struct}{\textbar}\space\space\space
435     \thepage\par
436     \vskip6pt\color{struct}{\hrule height 1bp}\par
437     \end{minipage}
438 }%
439 \def\@evenhead{%
440     \begin{minipage}{\textwidth}
441     \thepage\space\space\space
442     \textcolor{struct}{\textbar}\space\space\space
443     {\HeadTitle}\hfill
444     {%
445         \fontsize{9pt}{11pt}\selectfont
446         \ifx\undefined\dccp@normhead@doi\else\dccp@normhead@doi\fi
447     }\par
448     \vskip6pt\color{struct}{\hrule height 1bp}\par
449     \end{minipage}
450 }%
451 \let\NormalHead=\@oddhead
452 \def\@oddfoot{\begin{minipage}[b]{\textwidth}
453     \centering\ifdefstring{\dccp@variant}{baskerville}{\sffamily}{\bfseries}%
454     \normalsize\color{struct}
455     \ifx\dccp@type\dccp@editorial
456         \dccp@publ@long
457     \else
458         \dccp@publ@short\space\space\textbar\space\space\emph{\dccp@type}%
459     \fi
460     \par
461 \end{minipage}}%
462 \let\@evenfoot=\@oddfoot
463 \let\NormalFoot=\@oddfoot
464 }
465 \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`).

```

467 \AtEndPreamble{
468     \newsavebox{\dccp@firstpagehead}
469     \sbox\dccp@firstpagehead{\normalfont\TitleHead}
470     \newsavebox{\dccp@firstpagefoot}
471     \sbox\dccp@firstpagefoot{\normalfont
472         \def\email#1{#1}\def\url#1{#1}\def\href#1#2{#2}\TitleFoot}
473     \newsavebox{\dccp@restpagehead}
474     \sbox\dccp@restpagehead{\normalfont\NormalHead}
475     \newsavebox{\dccp@restpagefoot}
476     \sbox\dccp@restpagefoot{\normalfont\NormalFoot}

```

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

```

477 \setlength{\headheight}{\ht\dccp@firstpagehead + \dp\dccp@firstpagehead}

```

```

478 \setlength{\footskip}{%
479     2\baselineskip + \ht\dccp@firstpagefoot + \dp\dccp@firstpagefoot
480 }
481 \setlength{\textheight}{%
482     \paperheight
483     - 30mm % 15mm top and bottom
484     - \headheight
485     - \headsep
486     - \footskip
487 }

```

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

```

488 \def\dccp@resetgeometry{%
489     \setlength{\headheight}{\ht\dccp@restpagehead + \dp\dccp@restpagehead}
490     \global\headheight=\headheight
491     \setlength{\footskip}{%
492         2\baselineskip + \ht\dccp@restpagefoot
493     }
494     \global\footskip=\footskip
495     \setlength{\textheight}{%
496         \paperheight
497         - 30mm % 15mm top and bottom
498         - \headheight
499         - \headsep
500         - \footskip
501     }
502     \FixTextHeight
503     \global\textheight=\textheight
504 }
505 }

```

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.

```

507 \RequirePackage{atbegshi}
508 \renewcommand{\maketitle}{%
509     \null\nobreak\vspace*{-0.528\baselineskip}%
510     \begingroup
511         \centering
512         {\Large\ifdefstring{\dccp@variant}{baskerville}{\bfseries}{\thetitle\par}
513         \vspace{0.7\baselineskip}
514         \AuthorBlock\par
515         \vspace{1.7\baselineskip}
516     \endgroup
517     \AtBeginShipoutNext{\dccp@resetgeometry}%
518 }

```

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.

```

520 \newenvironment{widequote}{%
521   \list{}{%
522     \setlength{\rightmargin}{2\parindent}%
523     \setlength{\leftmargin}{2\parindent}%
524   }%
525   \flushletright\item[]%
526 }{%
527   \endlist
528 }
529 \def\afterabstract{}
530 \renewenvironment{abstract}{%
531   \vskip1em%
532   \begin{center}%
533     {\bfseries\abstractname\vspace{-.5em}\vspace{\z@}}%
534   \end{center}%
535   \widequote\footnotesize
536 }{%
537   \endwidequote\afterabstract\newpage
538 }

```

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.

```

540 \RequirePackage{titlesec}
541 \titlespacing*{\section}{0pt}{0pt}{\baselineskip}
542 \titlespacing*{\subsection}{0pt}{0pt}{0.6\baselineskip}
543 \titlespacing{\subsubsection}{\parindent}{\baselineskip}{0pt}
544 \titlespacing{\paragraph}{\parindent}{\baselineskip}{0pt}
545 \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.

```

546 \newcounter{sectionpars}
547 \let\dccp@old@ep\everypar
548 \newtoks\everypar
549 \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.

```

550 \titleformat{\section}
551   [block]
552   {%

```



```

553 \vspace{2\baselineskip}%
554 \nobreak
555 \vspace*{-0.528\baselineskip}%
556 \setcounter{sectionpars}{0}%
557 \filcenter\normalfont\Large\bfseries
558 }
559 {\thesection}
560 {1em}
561 {}

```

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.

```

562 \titleformat{\subsection}
563 {%
564 \ifnum\thesectionpars>2%
565 \vspace{2\baselineskip}%
566 \else
567 \vspace{\baselineskip}%
568 \fi\nobreak
569 \vspace*{-0.6\baselineskip}%
570 \normalfont\normalsize\bfseries
571 }
572 {\thesubsection}
573 {1em}
574 {}
575 \titleformat{\subsubsection}
576 [block]
577 {\normalfont\normalsize\bfseries}
578 {\thesubsubsection}
579 {1em}
580 {}
581 \titleformat{\paragraph}
582 [block]
583 {\normalfont\normalsize\bfseries\itshape}
584 {\thesubsubsection}
585 {1em}
586 {}
587 \titleformat{\subparagraph}
588 [block]
589 {\normalfont\normalsize\itshape}
590 {\thesubsubsection}
591 {1em}
592 {}

```

DCC papers do not typically number their sections.

```

593 \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.

```
595 \RequirePackage{array,booktabs}
596 \renewcommand{\arraystretch}{1.25}
```

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

```
598 \RequirePackage
599 [ format=hang
600 , labelsep=period
601 , font=small
602 , labelfont=bf
603 , figureposition=bottom
604 , tableposition=top
605 ]{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.

```
607 \RequirePackage[hang,bottom]{footmisc}
608 \settowidth{\footnotemargin}{\footnotesize\textsuperscript{99}\space}
609 \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.³ This tweak needs to be done late, `\AtBeginDocument`. Note that the `newtx` superior figures are a bit lower than normal superscript text.

```
610 \AtBeginDocument{
611   \let\dccp@footnote\footnote
612   \def\dccp@next@token{\relax}%
613   \def\dccp@supercomma{\textsuperscript{,}}%
614   \IfFileExists{newtxtext.sty}%
615     {\def\dccp@supercomma{\raisebox{-0.2ex}{\textsuperscript{,}}}}%
616     {}
617
618   \newcommand\dccp@check@for@footnote{%
619     \ifx\footnote\dccp@next@token
620       \dccp@supercomma
621     \fi
622   }
623
624   \renewcommand\footnote[1]{%
625     \dccp@footnote{#1}%
626     \futurelet\dccp@next@token\dccp@check@for@footnote
627   }
628 }
```

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

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

```

630 \topsep = \z@
631 \partopsep = \z@
632 \appto{\enumerate}{\itemsep = 0.5ex plus 0.25ex minus 0.25ex}
633 \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.

```

635 \AtBeginDocument{
636   \ifpackageloaded{biblatex}{%
637     \defbibheading{bibliography}[\refname]{\section{#1}}%

```

We also move the ‘doi:’ portion of a DOI inside the hyperlink.

```

638 \DeclareFieldFormat{doi}{%
639   \ifhyperref{%
640     \href{https://doi.org/#1}{\nolinkurl{doi:#1}}%
641   }{%
642     \nolinkurl{doi:#1}%
643   }%
644 }
645 }%

```

If `apacite` is used, there are a few other adaptations we need to make.

```

646 \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.

```

647 \def\@ifauthorsunequalc@de#1{%
648   \ifF@cite
649     \@F@citefalse
650   \else
651     \ifY@cite
652       {\@BAY}%
653     \fi
654     {\@BBC}%
655   \fi
656   \edef\@cite@undefined{?}%
657   \def\BBA{\@BBA}%
658   \ifA@cite
659     %\hyper@natlinkstart{#1}% We remove this line...
660     {\csname b@citeb\APAC@extra@b@citeb\endcsname}%
661     %\hyper@natlinkend% ...and this one.
662     \ifY@cite
663       {\@BBAY}%
664     \fi
665   \fi
666   \ifY@cite
667     \hyper@natlinkstart{#1}%
668     {\csname Y@citeb\APAC@extra@b@citeb\endcsname}%

```

```

669     \hyper@natlinkend
670     \fi
671     \let\BBA\relax
672 }

```

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!)

```

673 \AfterEndPreamble{%
674   \@ifundefined{iflanguage}{%
675     \relax
676   }{%
677     \edef\APAC@tmp{nohyphenation}%
678     \ifx\languagename\APAC@tmp
679     \else
680       \edef\APAC@tmp{spanish}%
681       \ifx\languagename\APAC@tmp
682         \def\@ifauthorsunequalc@de#1{%
683           \if@F@cite
684             \@F@citefalse
685           \else
686             \if@Y@cite
687               {\@BBAY}%
688             \fi
689             {\@BBC}%
690           \fi
691           \edef\@cite@undefined{?}%
692           \def\BBA{\@BBA}%
693           \@ifundefined{spanishe@\@citeb\APAC@extra@b@citeb}%
694             {}% skip
695             {{% Use `e' instead of `y' in Spanish
696               \global\let\oldBBA\BBA
697               \global\def\BBA{e\global\let\BBA\oldBBA}%
698             }}%
699           \if@A@cite
700             %\hyper@natlinkstart{#1}% We remove this line...
701             {\csname b@\@citeb\APAC@extra@b@citeb\endcsname}%
702             %\hyper@natlinkend% ...and this one.
703           \if@Y@cite
704             {\@BBAY}%
705           \fi
706         \fi
707         \if@Y@cite
708           \hyper@natlinkstart{#1}%
709           {\csname Y@\@citeb\APAC@extra@b@citeb\endcsname}%
710           \hyper@natlinkend
711         \fi
712         \let\BBA\relax
713       }%
714     \fi

```

```
715     \fi
716   }%
```

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

```
717     \urlstyle{APACrm}
718   }%
```

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`.

```
719     \newcommand{\doi}[1]{\href{https://doi.org/#1}{\nolinkurl{doi:#1}}}%
720     \renewcommand{\doiprefix}{\unskip}%
721   }{}%
722 }%
```

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.

```
723 \ifx\undefined\bibitemsep
724 \else
725   \setlength{\bibitemsep}{1em plus 1ex minus 1ex}%
726 \fi
727 }
```

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.

```
728 \PassOptionsToPackage{numberedbib}{apacite}
```

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

```
730 \RequirePackage
731 [ colorlinks=true
732   , linkcolor=black
733   , anchorcolor=black
734   , citecolor=links
735   , filecolor=black
736   , menucolor=black
737   , runcolor=black
738   , urlcolor=links
739 ]{hyperref}
```

Links should be in roman type, not monospaced.

```
740 \urlstyle{rm}
```

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

```
741 \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.

```
742 \AtBeginDocument{%
743   \hypersetup
744   { pdftitle={\thetitle}
745     , pdfauthor={\dccp@author}
746     , pdfsubject={\dccp@subject}
747   }
```

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

```
748 \@ifundefined{Url@force@Tilde}{\def\Url@force@Tilde{\relax}}{}%
749 \def\url@apa@dot{\mathchar"2E }%
750 \def\url@apa@comma{\mathchar"2C }%
751 \def\url@apa@questionmark{\mathchar"3F }%
752 \def\url@apa@exclamation{\mathchar"21 }%
753 \def\url@apa@hyphen{\mathchar"2D }%
754 \def\url@apa@underscore{\_ }%
755 \def\UrlBreaks{\do\@do\|do\|do\;do\>do\]do\ do\'do+\do=\do\#}%
756 \def\UrlBigBreaks{\do\/do\ do:url@hyp}%
757 \def\UrlNoBreaks{\do\(\do\[\do\{\do\<% \)}
758 \def\UrlOrds{\do\*\do\~\do\'do\"}%
759 \def\UrlSpecials{%
760   \do\.\{\mathbin}\url@apa@dot }%
761   \do\,\{\mathbin}\url@apa@comma }%
762   \do\-\{\mathbin}\url@apa@hyphen }%
763   \do\?\{\mathbin}\url@apa@questionmark }%
764   \do\!\{\mathbin}\url@apa@exclamation }%
765   \do\_ \{\mathbin}\url@apa@underscore }%
766   \do\ \{Url@space}\do\%\{Url@percent}\do\ ~M{Url@space}%
767   \Url@force@Tilde}%
768 \def\Url@OTnonTT{\do\<\langle\do\>\{\mathbin{\rangle}}\do
769   \_ \{\mathbin}\_ \do\| \{\mid\do\{ \{\lbrace\do\} \{\mathbin{\rbrace}}\do
770   \ \{\mathbin{\backslash}\}UrlTildeSpecial}
771 }
```

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 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).

```

773 \begingroup
774 \catcode`\\"=12
775 \catcode`\&=12
776 \catcode`\#=12
777 \catcode`\<=12
778 \catcode`\>=12
779 \catcode`\_ =12

```

We construct the XMP packet as the document begins.

```

780 \AtBeginDocument{%

```

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

```

781 \def\sp{\space\space\space}

```

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

```

782 \long\gdef\cc@xmp@packet{%
783 <?xpacket begin=' ' id=' '?>^^J%
784 <x:xmpmeta xmlns:x='adobe:ns:meta/'>^^J%
785 <rdf:RDF xmlns:rdf='http://www.w3.org/1999/02/22-rdf-syntax-ns#'>^^J%
786 \sp<rdf:Description rdf:about=' '^^J%
787 \sp\sp xmlns:xapRights='http://ns.adobe.com/xap/1.0/rights/'>^^J%
788 \sp\sp<xapRights:Marked>True</xapRights:Marked>^^J%
789 \sp</rdf:Description>^^J%
790 \sp<rdf:Description rdf:about=' '^^J%
791 \sp\sp xmlns:dc='http://purl.org/dc/elements/1.1/'>^^J%
792 \sp\sp<dc:rights>^^J%
793 \sp\sp\sp<rdf:Alt>^^J%
794 \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%
795 \sp\sp\sp</rdf:Alt>^^J%
796 \sp\sp</dc:rights>^^J%
797 \sp</rdf:Description>^^J%
798 \sp<rdf:Description rdf:about=' '^^J%
799 \sp\sp xmlns:cc='http://creativecommons.org/ns#'>^^J%
800 \sp\sp<cc:license rdf:resource='http://creativecommons.org/licenses/by/4.0/'>^^J%
      %
801 \sp</rdf:Description>^^J%
802 </rdf:RDF>^^J%
803 </x:xmpmeta>^^J%
804 <?xpacket end='r'?>^^J%
805 }%
806 }
807 \endgroup

```

Different workflows require the XMP packet to be embedded in different ways.

Pd_fT_EX can inject objects into PDFs natively.

```

808 \newcommand*{\ccxmp@embed@packet@pdftex}{%
809   \bgroup
810   \pdfcompresslevel=0
811   \immediate\pdfobj stream attr {%
812     /Type /Metadata
813     /Subtype /XML
814   }{\cc@xmp@packet}%
815   \pdfcatalog {/Metadata \the\pdflastobj\space 0 R}%
816   \egroup
817 }

```

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

```

818 \newcommand*{\ccxmp@embed@packet@pdfmark}{%
819   \pdfmark{%
820     pdfmark=/NamespacePush
821   }%
822   \pdfmark{%
823     pdfmark=/OBJ,
824     Raw={/_objdef \string{ccxmp@packet\string} /type /stream}%
825   }%
826   \pdfmark{%
827     pdfmark=/PUT,
828     Raw={\string{ccxmp@packet\string}
829       2 dict begin
830         /Type /Metadata def
831         /Subtype /XML def
832         currentdict
833       end
834     }%
835   }%
836   \pdfmark{%
837     pdfmark=/PUT,
838     Raw={\string{ccxmp@packet\string} (\cc@xmp@packet)}%
839   }%
840   \pdfmark{%
841     pdfmark=/Metadata,
842     Raw={\string{Catalog\string} \string{ccxmp@packet\string}}%
843   }%
844   \pdfmark{%
845     pdfmark=/NamespacePop
846   }%
847 }

```

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`.

```

848 \def\ccxmp@count@spaces#1 {%
849   \def\ccxmp@one@token{#1}%
850   \ifx\ccxmp@one@token\@empty

```



```

851 \advance\@tempcnta by -1
852 \else
853 \advance\@tempcnta by 1
854 \expandafter\ccxmp@count@spaces
855 \fi
856 }

```

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`.

```

857 \newcommand*\ccxmp@count@non@spaces}[1]{%
858 \def\ccxmp@one@token{#1}%
859 \ifx\ccxmp@one@token\@empty
860 \else
861 \advance\@tempcnta by 1
862 \expandafter\ccxmp@count@non@spaces
863 \fi
864 }

```

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

```

865 \newcommand*\ccxmp@string@len}[1]{%
866 \@tempcnta=0
867 \expandafter\ccxmp@count@spaces#1 {} %
868 \expandafter\ccxmp@count@non@spaces#1{}%
869 }

```

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

```

870 \newcommand*\ccxmp@embed@packet@dvipdfm){%
871 \ccxmp@string@len{\ccxmp@packet}%
872 \special{pdf: object @ccxmp@packet
873 <<
874 /Type /Metadata
875 /Subtype /XML
876 /Length \the\@tempcnta
877 >>
878 stream^^J\ccxmp@packet endstream%
879 }%
880 \special{pdf: docview
881 <<
882 /Metadata @ccxmp@packet
883 >>
884 }%
885 }

```

X_YTeX creates PDFs with Xdvi_Ypdfmx, which supports a simpler `\special` for inserting objects that does not require us to count characters.

```

886 \newcommand*\ccxmp@embed@packet@xetex){%
887 \special{pdf:stream @ccxmp@packet (\ccxmp@packet)

```

```
888 <<
889   /Type /Metadata
890   /Subtype /XML
891 >>
892 }%
893 \special{pdf:put @catalog
894 <<
895   /Metadata @ccxmp@packet
896 >>
897 }%
898 }
```

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.

```
899 \AtBeginDocument{%
900   \begingroup
901   \def\ccxmp@driver{hpdftex}%
902   \ifx\ccxmp@driver\Hy@driver
903     \ccxmp@embed@packet@pdftex
904   \else
905     \def\ccxmp@driver{hdvipdfm}%
906     \ifx\ccxmp@driver\Hy@driver
907       \ccxmp@embed@packet@dvipdfm
908     \else
909       \def\ccxmp@driver{hxdetex}%
910       \ifx\ccxmp@driver\Hy@driver
911         \ccxmp@embed@packet@xdetex
912       \else
913         \@ifundefined{pdfmark}{}{%
914           \ccxmp@embed@packet@pdfmark
915         }%
916       \fi
917     \fi
918   \fi
919 \endgroup
920 }
```

Appendix C: Installation

Managed way

The latest stable release of the dccpaper bundle has been packaged for TeX Live and MiKTeX. If you are running TeX Live and have `tlmgr` installed, you can install the bundle simply by running `tlmgr install dccpaper`. If you are running MiKTeX, 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 source` generates the derived files
 - `README.md`
 - `ijdc-v9.cls`
 - `idcc.cls`
 - `dccpaper-base.sty`
 - `dccpaper-apacite.bib`
 - `dccpaper-biblatex.bib`
- Running `make` generates the above files and also `dccpaper.pdf`.
- Running `make inst` installs the files in the user's TeX tree.
- Running `make install` installs the files in the local TeX tree.

Manual way

1. Run `tex dccpaper.dtx` to generate the source files.
2. Compile `dccpaper.dtx` with (any version of) LaTeX and Biber to generate the documentation. Due to a dependency on the markdown package, you will need either to use LuaLaTeX or to enable shell escape.
3. Move the files to your TeX tree as follows:
 - `source/latex/dccpaper`: `dccpaper.dtx`, `dccpaper.ins`
 - `tex/latex/dccpaper`: `ijdc-v9.cls`, `idcc.cls`, `dccpaper-base.sty`, `dccpaper-by.eps`, `dccpaper-by.pdf`
 - `doc/latex/dccpaper`: `dccpaper.pdf`, `dccpaper-apacite.bib`, `dccpaper-biblatex.bib`, `README.md`
4. You may then have to update your installation's file name database before TeX and friends can see the files.

Appendix D: Sample Documents

The following code demonstrates how to use `dccpaper` to write an IDCC conference paper.

```
1 \documentclass[research,15]{idcc}
2
3 \title{How to write a conference paper}
4 \author{First Author}
5 \affil{First Author's Affiliation}
6 \author{Second Author}
7 \affil{Second Author's Affiliation}
8 \correspondence{Your Name, Institution, Postal address. Email: \email{ab@example.
   com}}
9
10 \submitted{1 October 2014}
11
12 \usepackage[style=apa]{biblatex}
13 \addbibresource{references.bib}
14
15 \begin{document}
16 \maketitle
17
18 \begin{abstract}
19 Text of the abstract\dots
20 \end{abstract}
21
22 \section{Introduction}
23
24 The text of the introduction starts here\dots
25
26 \section{Conclusions}
27
28 The text of the conclusions starts here\dots
29
30 \section{Acknowledgements}
31
32 Any acknowledgements should be placed here\dots
33
34 \printbibliography
35 \end{document}
```

If submitting a workshop proposal to the IDCC, there is a specific set of information you need to include. The following code provides the bare bones of the template you will need to fill out, but please refer to the corresponding Word template for guidance on how to complete it.

```

1 \documentclass[workshop,19]{idcc}
2
3 \title{Getting your workshop accepted}
4 \author{First Author}
5 \affil{First Author's Affiliation}
6 \author{Second Author}
7 \affil{Second Author's Affiliation}
8 \correspondence{Your Name, Institution, Postal address. Email: \email{ab@example.
   com}}
9
10 \submitted{1 July 2018}
11
12 \usepackage[style=apa]{biblatex}
13 \addbibresource{references.bib}
14
15 \begin{document}
16 \begin{description}
17 \item[Workshop Organiser(s):]~\\
18 Name, position, organization.
19
20 \item[Workshop title:]~\\
21 Title.
22
23 \item[Brief description:]~\\
24 60 words or fewer.
25
26 \item[Long description:]~\\
27 About 500 words.
28
29 \item[Room layout/workshop style:]~\\
30 Cabaret, classroom, boardroom, other.
31
32 \item[Minimum/maximum number of delegates:]~\\
33 Minimum for viability, maximum for workability.
34
35 \item[Number of speakers:]~\\
36 Number.
37
38 \item[Equipment requirements:]~\\
39 Projectors, sound, flipcharts, whiteboards etc.
40
41 \item[Workshop length:]~\\
42 Half day or full day.
43
44 \item[Funding model:]~\\
45 Fully funded, part funded (subsidised) or delegate fee.
46 \end{description}
47 \end{document}

```

Appendix E: Licence

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),⁴ 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.eps⁵ distributed by Creative Commons. The image is a trademark of Creative Commons and is subject to the Creative Commons trademark policy.⁶

This work is “maintained” (as per LPPL maintenance status) by Alex Ball.⁷

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

⁴ LaTeX Project Public License (LPPL): <http://www.latex-project.org/lppl.txt>

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