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# dcm.sty: An Infrastructure for marking up Dublin Core Metadata in L<sup>A</sup>T<sub>E</sub>X documents\*

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March 20, 2019

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\*Version v0.3 (last revised 2019/03/20)

EdN:1  
EdN:2

# 1 Introduction

The `dcm` package allows mark up Dublin Core Metadata [DCM03] in  $\LaTeX$  documents so that it can be harvested by automated tools or exported to PDF<sup>1</sup>. This package allows to attribute authorship to arbitrary text fragments.<sup>2</sup>

## 2 The User Interface

### 2.1 Package Options

`showmeta` The `dcm` package takes a single option: `showmeta`. If this is set, then the metadata keys are shown (see [Koh16] for details and customization options).

### 2.2 The DC Metadata Block

`DCmetadata` The `dcm` provides the environment `DCmetadata` for Dublin Core Metadata Blocks. `DCmetadata` defines local macros for the specifying the relevant Dublin Core metadata fields and takes an optional argument that specifies the presentation of the metadata block, see Figure 1 for an example which would generate the title block for the `dcm` package. Let us now come to the macros themselves

`\DCMcreators`  
`\DCMcontributors` The `\DCMcreators` and `\DCMcontributors` macros are used to specify the authors and contributors to a text fragments. These macros take one argument, the authorship of a document specified in terms of `ids` of persons specified via `\WAperson` before. They can occur multiply in a metadata block.

`\DCMtitle` The `\DCMtitle` macro takes one argument, the  
`\DCMshorttitle` The `\DCMshorttitle` macro takes one argument, the  
`\DCMsubject` The `\DCMsubject` macro takes one argument, the  
`\DCMdescription` The `\DCMdescription` macro takes one argument, the  
`\DCMpublisher` The `\DCMpublisher` macro takes one argument, the  
`\DCMdate` The `\DCMdate` macro takes one argument, the  
`\DCMtype` The `\DCMtype` macro takes one argument, the  
`\DCMidentifier` The `\DCMidentifier` macro takes two arguments, the first one is the identification system, and the second one the identifier string itself.

`\DCMsource` The `\DCMsource` macro takes one argument, the  
`\DCMlanguage` The `\DCMlanguage` macro takes one argument, the  
`\DCMrelation` The `\DCMrelation` macro takes one argument, the  
`\DCMrights` The `\DCMrights` macro takes one argument, the  
`\DCMlicense` The `\DCMlicense` macro takes one argument, the  
`\DCMabstract` The `\DCMabstract` macro takes one argument, the  
`\DCMlicensenotice` The `\DCMlicensenotice` macro takes one argument, the  
`\DCMcopyrightnotice` The `\DCMcopyrightnotice` macro takes one argument, the  
`\DCMcclicense` The `\DCMcclicense` macro  
`\attribution`

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<sup>1</sup>EDNOTE: This still needs to be implemented, see <http://www.wlug.org.nz/PdfLatexNotes> for details

<sup>2</sup>EDNOTE: continue

```
\noncommercial
\sharealike
\noderivativeworks
```

```
\begin{DCmetadata}[maketitle]
\DCMtitle{An Infrastructure for marking up Dublin Core Metadata in
{\LaTeX} documents\thanks{Version {\fileversion}
(last revised {\filedate})}}
\DCMcreators{miko,jdoe}
\DCMdate{\today}
\DCMcopyrightnotice{2008}{Michael Kohlhase}
\DCMlicense{Copyright (c) 2008 Michael Kohlhase, all rights
reserved. This file is released under the LaTeX Project Public
License (LPPL)}
\DCMabstract{The {\texttt{dcm}} package allows mark up Dublin
Core Metadata in {\LaTeX} documents that can be harvested by
automated tools or exported to PDF, while at the same time
generating conventional title information.}
\end{DCmetadata}
```

**Example 1:** The DC Metadata block for the dcm package documentation

## 2.3 DCM Metadata Block Styles

The `DCmetadata` environment takes an optional argument that specifies the style the metadata block is rendered in. The `dcm` package supplies two styles: `maketitle` and `titlepage`. The former uses the `\maketitle` macro from the calling class to assemble a title, whereas the latter builds a title page from scratch. The title block of this documentation has been created by the `maketitle` style.

To add a further metadata block style  $\langle sty \rangle$ , we simply have to supply a `\dcm@ $\langle sty \rangle$ @block` macro that expands to the intended presentation. This macro does not take any arguments, but can use the internal token registers defined by the `DCmetadata` environment. Generally, for any of the metadata commands `\DCM $\langle md \rangle$`  defined in `?user.dcm.mdblock?` there is a token register `\dcm@ $\langle md \rangle$`  that contains the value specified in the key.

## 2.4 Configuration

The `dcm` package provides a set of macros that customize (e.g. for multiple languages) the generated content.

```
\dcm@abstract@heading
\dcm@creators@heading
\dcm@contributors@connector
\dcm@chapter@heading
\dcm@section@heading
\dcm@subsection@heading
\dcm@subsubsection@heading
```

Macro	Default
<code>\dcm@abstract@heading</code>	Abstract
<code>\dcm@creators@heading</code>	Author(s)
<code>\dcm@contributors@connector</code>	with contributions from
<code>\dcm@chapter@heading</code>	Chapter
<code>\dcm@section@heading</code>	Section
<code>\dcm@subsection@heading</code>	Subsection
<code>\dcm@subsubsection@heading</code>	Subsubsection

### 3 Limitations

In this section we document known limitations. If you want to help alleviate them, please feel free to contact the package author. Some of them are currently discussed in the `sTeX` GitHub repository [sTeX].

1. none reported yet

## 4 The Implementation

### 4.1 Package Options

The first step is to declare (a few) package options that handle whether certain information is printed or not. They all come with their own conditionals that are set by the options.

```

1 <*package>
2 \DeclareOption*{\PassOptionsToPackage{\CurrentOption}{rdfmeta}}
3 \PassOptionsToPackage{\CurrentOption}{workaddress}}
4 \ProcessOptions
```

The first measure is to ensure that the `KeyVal` package is loaded (in the right version). For `LATEXML` we also initialize the package inclusions.

```

5 \RequirePackage{workaddress}
6 \RequirePackage[sectioning]{rdfmeta}
```

### 4.2 The DC Metadata Block

Then we make an environment for defining the metadata. Note that since we have defined the `omdoc:metadata` element to auto-open and auto-close, we do not have to (and should not for that matter) supply it in the `DCmetadata` element.

`DCmetadata`

```

7 \newenvironment{DCmetadata}[1][{}]{
8 {\def\@style{#1}}% to set the way things are presented.
9 {\@ifundefined{dcm@\@style}{@block}%
10 {\message{style {\@style} not defined}}%
11 {\csname dcm@\@style @block\endcsname}}
```

Here come the constructors, most of them are relatively straightforward

```
\DCMcreators the \DCMcreators macro checks whether all ids are defined.
12 \def\DCMcreators#1{\@for\@I:=#1\do{\wa@ref1{person}\@I{id}}
13 \gdef\dcm@creators{#1}}

\DCMcontributors the \DCMcontributors macro also checks whether all ids are defined.
14 \def\DCMcontributors#1{\@for\@I:=#1\do{\wa@ref1{person}\@I{id}}%
15 \def\dcm@contributors{#1}}

\DCMtitle
16 \def\DCMtitle#1{\def\dcm@title{#1}\providecommand{\dcm@shorttitle}{#1}}

\DCMsubtitle
17 \def\dcm@subtitle{}
18 \def\DCMsubtitle#1{\def\dcm@subtitle{#1}}

\DCMshorttitle
19 \def\dcm@shorttitle{}
20 \def\DCMshorttitle#1{\def\dcm@shorttitle{#1}}

\DCMsubject
21 \def\DCMsubject#1{\def\dcm@subject{#1}}

\DCMdescription
22 \long\def\DCMdescription#1{\long\def\dcm@description{#1}}

\DCMpublisher
23 \def\DCMpublisher#1{\def\dcm@publisher{#1}}

\DCMdate the \DCMdate uses \today as a default3
24 \def\dcm@date{\today}
25 \def\DCMdate#1{\def\dcm@date{#1}}

\DCMtype
26 \def\DCMtype#1{\def\dcm@type{#1}}

\DCMidentifier
27 \def\DCMidentifier#1#2{\def\dcm@scheme{#1}\def\dcm@identifier{#2}}

\DCMsource
28 \def\DCMsource#1{\def\dcm@source{#1}}

\DCMlanguage
29 \def\DCMlanguage#1{\def\dcm@language{#1}}
```

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<sup>3</sup>EDNOTE: @DEYAN: do that in latexml

EdN:3

```

\DCMrelation
30 \def\DCMrelation#1{\def\dcm@relation{#1}}

\DCMrights
31 \def\DCMrights#1{\long\def\dcm@rights{#1}}

\DCMlicense
32 \def\DCMlicense#1{\def\dcm@license{#1}}

\DCMlicensenotice here we have a default
33 \def\dcm@license{All rights reserved}
34 \def\DCMlicensenotice#1{\long\def\dcm@license{\[1ex]License: #1}}

\DCMcopyrightnotice
35 \def\DCMcopyrightnotice#1#2{\DCMrights{Copyright {copyright} #1: #2}}

\cclicense
36 \def\cclicense#1{\def\attribution{\def\dcm@by{yes}}
37 \def\noncommercial{\def\dcm@nc{yes}}
38 \def\sharealike{\def\dcm@sharealike{yes}}
39 \def\noderivativeworks{\def\dcm@derivatives{no}}}

\DCMabstract
40 \long\def\DCMabstract#1{\long\def\dcm@abstract{#1}}

```

### 4.3 DCM Block Styles

We now define various commonly used styles.

```

\dcm@titlepage@block This style builds up a title page from scratch
41 \def\dcm@titlepage@block{\begin{titlepage}
42 \null\vfil\vskip 60\p@
43 \begin{center}
44 \ifx\dcm@title\@empty
45 \PackageWarning{dcm}{No title specified}{\LARGE Add title here\par}
46 \else\LARGE \dcm@title \par\fi
47 \ifx\dcm@subtitle\@empty
48 \vskip 3em\LARGE \dcm@subtitle \par\vskip 3em
49 \else\large\lineskip .75em\WAauthorblock\dcm@creators\vskip 1.5em\fi
50 \ifx\dcm@date\@empty
51 \PackageWarning{dcm}{No date specified}{\large\today\par}
52 \else{\large\dcm@date\par}\vskip 2em\fi
53 \end{center}\vskip2em
54 \ifx\dcm@abstract\@empty
55 \PackageWarning{dcm}{No Abstract specified}\else
56 \begin{quote}\textbf\dcm@abstract@heading:\dcm@abstract\end{quote}\fi
57 \vskip 2em\par\vfil\noindent
58 {\small\noindent\dcm@rights\dcm@license}
59 \end{titlepage}}

```

`\dcm@maketitle@block` This style makes use of the title facility of the document class.

```
60 \def\dcm@maketitle@block{\def\@title{\dcm@title\ifx\dcm@subtitle\empty\else\newline\dcm@subtitl
61 \def\@author{\WAauthorblock\dcm@creators}%
62 \def\@date{\dcm@date}\maketitle}
```

## 4.4 Dealing with ISO Dates

The first step is to build a macro for making ISO dates.

```
63 \def\ISOtimestamp{\count1=\time\divide\count1 by 60 % hours
64 \count2=\count1\multiply\count2 by 60% minutes in \count1 hours
65 \count3=\time\advance\count3 by -\count2 % minutes
66 \the\year -\ifnum\month>9\else0\fi\the\month-\ifnum\day>9\else0\fi\the\day
67 T\ifnum\count1>9\else0\fi\the\count1:\ifnum\count3>9\else0\fi\the\count3:00Z}
```

## 4.5 Configuration

```
68 \def\dcm@abstract@heading{Abstract}
69 \def\dcm@creators@heading{Author(s)}
70 \def\dcm@contributors@connector{with contributions from}
71 \def\dcm@chapter@heading{Chapter}
72 \def\dcm@section@heading{Section}
73 \def\dcm@subsection@heading{Subsection}
74 \def\dcm@subsubsection@heading{Subsubsection}
75 \def\dcm@paragraph@heading{Paragraph}
76 \</package>
```

## References

- [DCM03] The DCMI Usage Board. *DCMI Metadata Terms*. DCMI Recommendation. Dublin Core Metadata Initiative, 2003. URL: <http://dublincore.org/documents/dcmi-terms/>.
- [Koh16] Michael Kohlhase. *metakeys.sty: A generic framework for extensible Metadata in L<sup>A</sup>T<sub>E</sub>X*. Tech. rep. Comprehensive T<sub>E</sub>X Archive Network (CTAN), 2016. URL: <http://mirror.ctan.org/macros/latex/contrib/stex/sty/metakeys/metakeys.pdf>.
- [sTeX] *KWARC/sTeX*. URL: <https://github.com/KWARC/sTeX> (visited on 05/15/2015).