

# A do-it-yourself thebibliography in CON<sub>T</sub><sub>E</sub>X<sub>T</sub>

## abstract

Moving from L<sup>A</sup>T<sub>E</sub>X to CON<sub>T</sub><sub>E</sub>X<sub>T</sub> is not really simple but to return from CON<sub>T</sub><sub>E</sub>X<sub>T</sub> to L<sup>A</sup>T<sub>E</sub>X would have been equally hard were it not for a publication by Berend de Boer in MAPS 24 explaining how to do L<sup>A</sup>T<sub>E</sub>X things in CON<sub>T</sub><sub>E</sub>X<sub>T</sub>. Only one thing was missing, a do-it-yourself thebibliography. Hans Hagen had a solution which is described below.

## keywords

non-guru, L<sup>A</sup>T<sub>E</sub>X, CON<sub>T</sub><sub>E</sub>X<sub>T</sub>, bibliography, citation command.

## An elaborate introduction

Like many, this author started writing papers in L<sup>A</sup>T<sub>E</sub>X using the documentclass ‘article’. This gave great satisfaction by the pleasure of seeing things ‘in print’ even before the contribution was published.

So, why turn to CON<sub>T</sub><sub>E</sub>X<sub>T</sub>?

Of course, CON<sub>T</sub><sub>E</sub>X<sub>T</sub> is modern, and extremely powerful, and monolithic, and still T<sub>E</sub>X. On the other hand CON<sub>T</sub><sub>E</sub>X<sub>T</sub> is different enough to require some adaptation. The fact is, I needed CON<sub>T</sub><sub>E</sub>X<sub>T</sub> for another reason and liked it so well that going back to the earlier system seemed undesirable. This became unnecessary as a recent contribution to the MAPS by Berend de Boer<sup>2</sup> appeared easing scientific paper writing authors into moving from L<sup>A</sup>T<sub>E</sub>X to CON<sub>T</sub><sub>E</sub>X<sub>T</sub>. This came as a great and wonderful help to me just in time.

When doing my first paper in CON<sub>T</sub><sub>E</sub>X<sub>T</sub>, however, I realized that one thing was missing: a tool for the literature references. There appeared to be no obvious replacement for `\begin{thebibliography}{99}`. But one can be constructed, and below I demonstrate the use of the simple solution that Hans Hagen (the author of CON<sub>T</sub><sub>E</sub>X<sub>T</sub>) suggested.

B<sub>I</sub>B<sub>T</sub><sub>E</sub>X is now also available for CON<sub>T</sub><sub>E</sub>X<sub>T</sub> thanks to Taco Hoekwater<sup>6</sup>. Thus, although bibliographies can be included in your publication through it, it is my personal preference to maintain my literature data base as a file of `\bibitem`'s. For each paper a relevant list of references is extracted from this file and copied into the `\begin{thebibliography}{99}` ... `\end{thebibliography}` section, and often the paper is written with several new references which are only later added to the `\bibitem` data base. In this way the full list of authors, full title and complete reference are incorporated in the text file of the paper, and there is no need to rely on another much larger file not available elsewhere. This arrangement appeared to be quite flexible when working with co-authors outside of my institute.

Thanks to the bibliography solution presented here I can continue this habit and all I have to do in the paper is change every `\bibitem{key}` to `\item[key]`. This is quite doable, even manually, when one realizes that writing an average manuscript may take from three weeks to three months whereas changing a typical 30-item bibliography takes three minutes.

## A bibliography implementation in CON<sub>T</sub>E<sub>X</sub>T

The implementation is as easy as it is in L<sup>A</sup>T<sub>E</sub>X. The bibliography in the manuscript is an enumeration packed in a section. A section without a number is a subject. In `\subject[litrefs]{...}` the subject is referred to via its logical name `litrefs`. In the example below the section is also typeset in two columns with a vertical rule between the columns using the `\setup` command of CON<sub>T</sub>E<sub>X</sub>T. If you rather had two columns without a vertical rule you'd type `\setupcolumns[rule=off]`. Note that logical parameters are between square brackets, text parameters are between curly braces. Thus: `\setupcolumns[rule=on]` and `\subject{Bibliography}`. This quickly becomes second nature. The `\startitemize` has a parameter `[n]` which specifies a numbered list of items when printed. The bracketed reference just following `\item` is used in the text of the manuscript. Here is the complete specification.

```
%-----
\subject[litrefs]{Bibliography}
\setupcolumns[rule=on,balance=yes]
\startcolumns

\startitemize[n]
  \item[lit:Bos] Bos WJW, van Goudoever J, van Montfrans GA,
van den Meiracker AH, Wesseling KH: Reconstruction of brachial
artery pressure from noninvasive finger pressure measurement.
Circulation 1996; {\bf 94}:1870||1875.
  \item[lit:Boer] de Boer B: \LaTeX\ in proper \CONTEXT. MAPS
2000; {\bf 24}:65||92.
  \item[lit:Dol] Dol W, Frambach E: 4\TeX\ for Windows, fifth
edition. ISBN 90||76669||01||5
  \item[lit:Gizdulich1] Gizdulich P, Imholz BPM, van den
Meiracker AH, Parati G, Wesseling KH: Finapres tracking of
systolic pressure and baroreflex sensitivity improved by waveform
filtering. J Hypertens 1996; {\bf 14}:243||250.
  \item[lit:Gizdulich2] Gizdulich P, Prentza A, Wesseling KH:
Models of brachial to finger pulse wave distortion and pressure
decrement. Cardiovasc Res 1997; {\bf 33}:698||705.
  \item[lit:Hoekwater] Hoekwater T: \CONTEXT\ Publication module,
the user documentation. Proceedings Euro\TeX 2001; 61||73.
  \item[lit:Lamport] Lamport L: \LaTeX\ : a document preparation
system. Addison||Wesley 1994, 2nd edition.
  \item[lit:Penaz] Pe\{v\{n}\}'{a}z J: Photoelectric measurement
of blood pressure, volume and flow in the finger. Digest 10th Int
Conf Med Biol Engng. Dresden, 1973; p 104 (abstract).
  \item[lit:Wesseling4] Wesseling KH, de Wit B, van der Hoeven
GMA, van Goudoever J, Settels JJ: Physiological, calibrating finger
vascular physiology for Finapres. Homeostasis 1995; {\bf
36}:67||82.
  \stopitemize
\stopcolumns
%-----
```

Below you can see what this looks like in print.

## Bibliography

1. Bos WJW, van Goudoever J, van Montfrans GA, van den Meiracker AH, Wesseling KH: Reconstruction of brachial artery pressure from non-invasive finger pressure measurement. *Circulation* 1996; **94**:1870–1875.
2. de Boer B: L<sup>A</sup>T<sub>E</sub>X in proper CONTEXt. *MAPS* 2000; **24**:65–92.
3. Dol W, Frambach E: 4T<sub>E</sub>X for Windows, fifth edition. ISBN 90–76669–01–5
4. Gizdulich P, Imholz BPM, van den Meiracker AH, Parati G, Wesseling KH: Finapres tracking of systolic pressure and baroreflex sensitivity improved by waveform filtering. *J Hypertens* 1996; **14**:243–250.
5. Gizdulich P, Prentza A, Wesseling KH: Models of brachial to finger pulse wave distortion and pressure decrement. *Cardiovasc Res* 1997; **33**:698–705.
6. Hoekwater T: CONTEXt Publication module, the user documentation. *Proceedings EuroT<sub>E</sub>X2001*; 61–73.
7. Lamport L: L<sup>A</sup>T<sub>E</sub>X : a document preparation system. Addison–Wesley 1994, 2nd edition.
8. Peñáz J: Photoelectric measurement of blood pressure, volume and flow in the finger. *Digest 10th Int Conf Med Biol Engng. Dresden, 1973*; p 104 (abstract).
9. Wesseling KH, de Wit B, van der Hoeven GMA, van Goudoever J, Settels JJ: Physiological, calibrating finger vascular physiology for Finapres. *Homeostasis* 1995; **36**:67–82.

## The citations

Given the bibliography in this form it is now possible to put citations in the manuscript. In many cases a citation is made by placing a small number high up in the text line, corresponding to the bibliography entry number, like: Knuth<sup>3</sup>. This is achieved by defining a command near the top of the manuscript as follows:

```
\def\Lit[#1]{\unskip\high{\in[lit:#1]}}
```

This defines that a citation is made by typing `\Lit` with one parameter. Typically, you would define your personal commands to begin with a capital letter (here ‘L’) to avoid possible conflict with proprietary CONTEXt commands which are all lower case. Thus, if you rather used the command `\cite` then don’t but use `\Cite` instead. The `\unskip` causes the number to immediately follow any preceding text. The `\high` raises the text between braces that follows. The `\in` makes the reference to the logical item between brackets. This item is `lit:#1`. Thus the internal reference in the bibliography enumeration, for example `lit:Penaz` should be used as `\Lit[Penaz]` without adding `lit:.` This is a safeguard to assure that reference is indeed made to an item in the bibliography and not to a spurious ‘Penaz’ elsewhere.

Below follows a piece of text from a User’s Guide in which the system is used.

```
%-----
Some technology developed for the Portapres ambulatory finger
blood pressure recorder is also included. For references see
\at{page}[litrefs].
```

```
\startitemize[n,packed,broad]
```

```

\item Continuous monitoring of the finger arterial pressure
waveform with the volume-clamp method of Pe\v{n}'{a}z
\Lit[Penaz] and the Physioical criteria of Wesseling
\Lit[Wesseling4], as in Finapres.
\item Reconstruction of brachial artery pressure waveform and
level from finger pressure via generalized waveform inverse
modeling \Lit[Gizdulich1]\high{,}\Lit[Gizdulich2].
\item Automatic individual Riva-Rocci arm cuff
return-to-flow pressure level calibration. \Lit[Bos]
\stopitemize
%-----

```

In printed form this looks like:

Some technology developed for the Portapres ambulatory finger blood pressure recorder is also included. For references see page 53.

1. Continuous monitoring of the finger arterial pressure waveform with the volume-clamp method of Peñáz<sup>8</sup> and the Physioical criteria of Wesseling<sup>9</sup>, as in Finapres.
2. Reconstruction of brachial artery pressure waveform and level from finger pressure via generalized waveform inverse modeling.<sup>4,5</sup>
3. Automatic individual Riva-Rocci arm cuff return-to-flow pressure level calibration.<sup>1</sup>

### But why stop here?

Once put on the right track other needs could perhaps be fulfilled. In the above you noticed the rather awkward solution for two references separated by a comma. Also, some journals like to contract a range of comma separated references like “3,4,5,6” to “3-6”. What we need in addition to `\Lit[]` is a `\Lits[][]` with the significance of Lit plus separator. It took me four trials (and three errors) to come up with a working definition:

```
\def\Lits[#1][#2]{\unskip\high{\in[lit:#1]}\high{#2}}
```

Examples of its use are:

```
Applications of \type{\Lits} are \Lits[Hoekwater][,]\Lit[Penaz] or
\Lits[Bos][-]\Lit[Hoekwater]
```

which looks as follows after processing by ConT<sub>E</sub>Xt:

Applications of `\Lits` are<sup>6,8</sup> or<sup>1-6</sup>

I am nearly certain that the definition for `\Lits[][]` as given above, although working, can be programmed in better ways by someone who really understands programming in T<sub>E</sub>X and ConT<sub>E</sub>Xt. Sometimes, however, it is important to have something that works when you need it.

### Conclusion

I must admit that I would not have found this solution myself even though it is clearly stated in the “L<sup>A</sup>T<sub>E</sub>X User’s Guide and Reference Manual”<sup>7</sup> (section 4.3.2 Doing It Yourself) that the `\begin{thebibliography}` is an enumerated list. Even then, creating the `\def\Lit` definition—however simple in hindsight, would not easily have crossed the

mind of this CONTEXt user. Yet, it cannot be called difficult since the process is very clearly explained in the book “4TEX for Windows”<sup>3</sup> (section 16.15 Programming)<sup>1</sup>. The advantage is that the form of the citation is out in the open and can be adapted to your personal requirements quite easily, if need be with a little trial and error.

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1. This book remains extremely useful as a compact introduction and reference to TEX even though 4TEX itself is no longer available