

# L<sup>A</sup>T<sub>E</sub>X News

Issue 17, December 2005

## Project licence news

The L<sup>A</sup>T<sub>E</sub>X Project Public License has been updated slightly so that it is now version 1.3c. In the warranty section the phrase “unless required by applicable law” has been reinstated, having got lost at some point. Also, it now contains three clarifications: of the difference between “maintained” and “author-maintained”; of the term “Base Interpreter”; and when clause 6b and 6d shall not apply.

Following requests, we now also provide the text of the licence as a L<sup>A</sup>T<sub>E</sub>X document (in the file `lpp1.tex`). This file can be processed either as a stand-alone document or it can be included (without any modification) into another L<sup>A</sup>T<sub>E</sub>X document, e.g., as an appendix, using `\input` or `\include`.

## New guide on font encodings

Way back in 1995 work was started on a guide to document the officially allocated L<sup>A</sup>T<sub>E</sub>X font encoding names. However, for one reason or another this guide (named *L<sup>A</sup>T<sub>E</sub>X font encodings*) was, until now, not added to the distribution. It describes the major 7-bit and 8-bit font encodings used in the L<sup>A</sup>T<sub>E</sub>X world and explains the restrictions required of conforming text font encodings. It also lists all the ‘encoding specific commands’ (the LICR or L<sup>A</sup>T<sub>E</sub>X Internal Character Representation) for characters supported by the encodings OT1 and T1.

When the file `encguide.tex` is processed by L<sup>A</sup>T<sub>E</sub>X, it will attempt to typeset an encoding table for each encoding it describes. For this to be possible, L<sup>A</sup>T<sub>E</sub>X must be able to find `.tfm` files for a representative example font for each encoding. If L<sup>A</sup>T<sub>E</sub>X cannot find such a file then a warning is issued and the corresponding table is omitted.

## Robust commands in math

The font changing commands in text-mode have been robust commands for years, but the same has not been true for the math versions such as `\mathbf`. While the math-mode commands worked correctly in section heads, they could cause problems in other places such as index entries. With this release, these math-mode commands are now robust in the same way as their text-mode counterparts.

## Updates of required packages

Several of the packages in the tools bundle have been updated for this release.

The `xspace` package has some new features. One is an interface for adding and removing the exceptions it knows about and another is that it works with active characters. These remove problems of incompatibility with the `babel` system.

In *L<sup>A</sup>T<sub>E</sub>X News 16* we announced that some packages might begin to take advantage of  $\epsilon$ -T<sub>E</sub>X extensions on systems where these are available: and the latest version of `xspace` does just that. Note also that `fixltx2e` will make use of the facilities in  $\epsilon$ -T<sub>E</sub>X whenever these are present (see below).

The `calc` package has also been given an update with a few extra commands. The commands `\maxof` and `\minof`, each with two brace-delimited arguments, provide the usual numeric max and min operations. The commands `\settototalheight` and `\totalheightof` work like `\settoheight` and `\heightof`. There are also some internal improvements to make `calc` work with some more primitive T<sub>E</sub>X constructs, such as `\ifcase`.

The `varioref` package has acquired a few more default strings but there are still a number of languages for which good strings are still missing.

The `showkeys` package has also been updated slightly to work with more recent developments in `varioref`. Also, it now provides an easy way to define the look of the printed labels with the command `\showkeyslabelformat`.

## Work on L<sup>A</sup>T<sub>E</sub>X fixes

The package known as `fixltx2e` has three new additions. A new command `\textsubscript` has been added as a complement to the command `\textsuperscript` in the kernel. Secondly, a new form of `\DeclareMathSizes` that allows all of its arguments to have a dimension suffix. This means you can now use expressions such as `\DeclareMathSizes{9.5dd}{9.5dd}{7.4dd}{6.6dd}`.

The third new addition is the robust command `\TextOrMath` which takes two arguments and executes one of them when typesetting in text or math mode respectively. This command also takes advantage of  $\epsilon$ -T<sub>E</sub>X extensions if available; more specifically, when the  $\epsilon$ -T<sub>E</sub>X extensions are available, it does not destroy kerning between previous letters and the text to be

typeset. The command is also used internally in `fixltx2e` to resolve a problem with `\fnsymbol`.

Also, further work has been done on reimplementing the command `\addpenalty`, which is used internally in several places: we hope it is an improvement!

## The graphics bundle

The graphics bundle now supports the `dvipdfmx` post-processor and Jonathan Kew's XETEX program. By support we mean that the graphics packages recognize the new options `xetex` and `dvipdfmx` but we do not distribute the respective driver files.

This leads elegantly to a description of the new policy concerning such driver files in the graphics bundle. Most driver files for our graphics packages are maintained by the developers of the associated post-processor or T<sub>E</sub>X programs. The teams developing these packages are working very hard: their rapid development offers a stark contrast to the current schedule of L<sup>A</sup>T<sub>E</sub>X releases. It is therefore no longer practical for the L<sup>A</sup>T<sub>E</sub>X Team to be responsible for distributing the latest versions of these driver files.

Therefore the installation files for graphics have been split: there is now `graphics.ins` to install the package files and `graphics-drivers.ins` for the driver files (located in `drivers.dtx`). There is no need to install all those provided in the file `drivers.dtx`.

Please also note that, as requested by the maintainers of PStricks, we have removed the package `pstcol` as current versions of PStricks make it obsolete.

## Future development

The title of this section is a little misleading as it actually describes *current* development. In 1998 the `expl3` bundle of packages was put on CTAN to demonstrate a possible L<sup>A</sup>T<sub>E</sub>X3 programming environment. These packages have been lying dormant for some time while the L<sup>A</sup>T<sub>E</sub>X Project Team were preoccupied by other things such as developing the experimental packages `xor`, `template`, etc., (and also writing that indispensable and encyclopaedic volume, *The L<sup>A</sup>T<sub>E</sub>X Companion – 2nd edition*).

In October 2004 work on this code base was resumed with the goal of some day turning it into a kernel for L<sup>A</sup>T<sub>E</sub>X3. This work can now also make full use of the widely accepted  $\epsilon$ -T<sub>E</sub>X extensions. Currently two areas are central to this work.

- Extending the kernel code of L<sup>A</sup>T<sub>E</sub>X3.
- Converting the experimental packages such as `xor`, `template` to use the new syntax internally.

Beware! Development of `expl3` is happening so fast that the descriptions above might be out of date when you read this! If you wish to see what's going on then go to <http://www.latex-project.org/code.html> where you can download fully working code (we hope!).