RefTEX User Manual

Support for LaTeX labels, references, and citations with GNU Emacs
Edition 3.43, December 1998

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This is edition 3.43 of the *RefTEX User Manual* for **RefTEX** version 3.43, December 1998.

1 Introduction

RefTEX is a specialized package for support of labels, references, and citations in LaTeX. **RefTEX** wraps itself round 3 LaTeX macros: `\label`, `\ref`, and `\cite`. Using these macros usually requires looking up different parts of the document and searching through BibTeX database files. **RefTEX** automates these time–consuming tasks almost entirely. It also provides functions to display the structure of a document and to move around in this structure quickly.

Don't be discouraged by the size of this manual, which covers **RefTEX** in great depth. All you need to know to use **RefTEX** can be summarized on a single page (see Section 1.4 [RefTeX in a Nutshell], page 2). You can go back later to other parts of this document when needed.

See Section 6.10 [Imprint], page 26, for information about who to contact for help, bug reports or suggestions.

1.1 Installation

RefTEX is bundled and pre–installed with Emacs since version 20.2.

Users of earlier Emacs distributions (including Emacs 19) can get a copy of the **RefTEX** distribution from the maintainers web-page. See Section 6.10 [Imprint], page 26, for more information.

1.2 Environment

RefTEX needs to access all files which are part of a multifile document, and the BibTeX database files requested by the `\bibliography` command. To find these files, **RefTEX** will require a search path, i.e., a list of directories to check. Normally this list is stored in the environment variables `TEXINPUTS` and `BIBINPUTS` which are also used by **RefTEX**. However, on some systems these variables do not contain the full search path. If **RefTEX** does not work for you because it cannot find some files, read Section 6.6 [Finding Files], page 19.

1.3 Entering RefTEX Mode

To turn **RefTEX** Mode on and off in a particular buffer, use *`M-x reftex-mode`*. To turn on **RefTEX** Mode for all LaTeX files, add the following lines to your '`.emacs`' file:

```
(add-hook 'LaTeX-mode-hook 'turn-on-reftex)   ; with AUCTeX LaTeX mode
(add-hook 'latex-mode-hook 'turn-on-reftex)   ; with Emacs latex mode
```

1.4 RefTEX in a Nutshell

1. **Table of Contents**
   Typing *C-c =* (`reftex-toc`) will show a table of contents of the document. From that buffer, you can jump quickly to every part of your document. Press *?* to get help.
2. **Labels and References**
   RefTEX distinguishes labels for different environments. It knows about all standard environments (and many others), and can be configured to recognize any additional labeled environments you have defined yourself (variable `reftex-label-alist`).

   Creating Labels
   Type *C-c (* (`reftex-label`) to insert a label at point. **RefTEX** will either
   - derive a label from context (default for section labels)
   - prompt for a label string (default for figures and tables) or
   - insert a simple label made of a prefix and a number (all other environments)

   This is configurable with the variable `reftex-insert-label-flags`.

   Referencing Labels
   To make a reference, type *C-c)* (`reftex-reference`). This shows an outline of the document with all labels of a certain type (figure, equation,...) and some label context. Selecting a label inserts a `\ref{`*label*`}` macro into the original buffer.
3. **Citations**
   Typing *C-c [* (`reftex-citation`) will let you specify a regular expression to search in current BibTeX database files (as specified in the `\bibliography` command) and pull out a list of matches for you to choose from. The list is *formatted* and sorted. The selected article is referenced as '`\cite{`*key*`}`' (see variable `reftex-cite-format`).
4. **Viewing Cross-References**
   When point is on the *key* argument of a cross–referencing macro (`\label`, `\ref`, `\cite`, `\bibitem`, `\index`, and variations) or inside a BibTeX database entry, you can press *C-c &* (`reftex-view-crossref`) to display corresponding locations in the document and associated BibTeX database files.
   When the enclosing macro is `\cite` or `\ref` and no other message occupies the echo area, information about the citation or label will automatically be displayed.
5. **Multifile Documents**
   Multifile Documents are fully supported. **RefTEX** provides cross-referencing information from all parts of the document, and across document borders ('`xr.sty`').
6. **Document Parsing**
   RefTEX needs to parse the document in order to find labels and other information. It does it automatically once and updates its list internally when `reftex-label` is used. To enforce reparsing, call any of the commands described above with a raw *C-u* prefix, or press the *r* key in the label selection buffer or the table of contents buffer.
7. **Useful Settings**
   To make **RefTEX** faster for large documents, and to integrate with AUCTeX, try these:

   ```
   (setq reftex-enable-partial-scans t)
   (setq reftex-save-parse-info t)
   (setq reftex-use-multiple-selection-buffers t)
   (setq reftex-plug-into-AUCTeX t)
   ```

2 Table of Contents

Pressing the keys *C-c =* pops up a buffer showing the table of contents of the document. By default, this '`*toc*`' buffer shows only the sections of a document. Using the *l* and *c* keys you can have all labels defined in the document and some context of the label definition displayed as well.

With the cursor in any of the lines denoting a location in the document, simple key strokes will display the corresponding part in another window, jump to that location, or perform other actions.

Here is a list of special commands in the '`*toc*`' buffer. A summary of this information is always available by pressing *?*.

0-9, - Prefix argument.

c Toggle the display of label context in the '`*toc*`' buffer. The default for this flag can be set with the variable `reftex-toc-include-context`.

f Toggle follow mode. When follow mode is active, the other window will always show the location corresponding to the line in the '`*toc*`' buffer at point. This is similar to pressing ⟨SPC⟩ after each cursor motion. The default for this flag can be set with the variable `reftex-toc-follow-mode`. Note that only context in files already visited is shown. **RefTeX** will not visit a file just for follow mode. See, however, the variable `reftex-revisit-to-follow`.

g Rebuild the '`*toc*`' buffer. This does *not* rescan the document.

i Toggle the display of the file borders of a multifile document in the '`*toc*`' buffer. The default for this flag can be set with the variable `reftex-toc-include-file-boundaries`.

l Toggle the display of labels '`*toc*`' buffer. The default for this flag can be set with the variable `reftex-toc-include-labels`.

n Goto next entry in the table of context.

p Goto previous entry in the table of context.

q Hide the '`*toc*`' buffer, return to the position where `reftex-toc` was last called.

Q Kill the '`*toc*`' buffer, return to the position where `reftex-toc` was last called.

r Reparse the LaTeX document and rebuild the '`*toc*`' buffer. When `reftex-enable-partial-scans` is non-nil, rescan only the file this location is defined in, not the entire document.

R Reparse the *entire* LaTeX document and rebuild the '`*toc*`' buffer.

x Switch to the '`*toc*`' buffer of an external document. When the current document is using the `xr` package (see Section 3.6 [xr (LaTeX package)], page 12), **RefTEX** will switch to one of the external documents.

. Show calling point in another window. This is the point from where `reftex-toc` was last called.

⟨SPC⟩ Show the corresponding location in another window. This command does *not* select that other window.

⟨TAB⟩ Goto the location in another window.

⟨RET⟩ Go to the location and hide the '`*toc*`' buffer. This will restore the window configuration before `reftex-toc` (*C-c =*) was called.

mouse-2 Clicking with mouse button 2 on a line has the same effect as ⟨RET⟩. See also variable `reftex-highlight-selection`, Section 8.9 [Options (Fontification)], page 41.

In order to define additional commands for the '`*toc*`' buffer, the keymap `reftex-toc-map` may be used.

The section macros recognized by **RefTEX** are all LaTeX section macros (from `\part` to `\subsubparagraph`) and the commands `\addchap` and `\addsec` from the KOMA-Script classes. Additional macros can be configured with the variable `reftex-section-levels`.

3 Labels and References

LaTeX provides a powerful mechanism to deal with cross–references in a document. When writing a document, any part of it can be marked with a label, like '`\label{mark}`'. LaTeX records the current value of a certain counter when a label is defined. Later references to this label (like '`\ref{mark}`') will produce the recorded value of the counter.

Labels can be used to mark sections, figures, tables, equations, footnotes, items in enumerate lists etc. LaTeX is context sensitive in doing this: A label defined in a figure environment automatically records the figure counter, not the section counter.

Several different environments can share a common counter and therefore a common label category. E.g. labels in both `equation` and `eqnarray` environments record the value of the same counter—the equation counter.

3.1 Creating Labels

In order to create a label in a LaTeX document, press *C-c (* (`reftex-label`). Just like LaTeX, **RefTEX** is context sensitive and will figure out the environment it currently is in and adapt the label to that environment. A label usually consists of a short prefix indicating the type of the label and a unique mark. **RefTEX** has 3 different modes to create this mark.

1. A label can be derived from context. This means, **RefTEX** takes the context of the label definition and constructs a label from that[1]. This works best for section labels, where the section heading is used to construct a label. In fact, **RefTEX**'s default settings use this method only for section labels. You will be asked to confirm the derived label, or edit it.
2. We may also use a simple unique number to identify a label. This is mostly useful for labels where it is difficult to come up with a very good descriptive name. **RefTEX**'s default settings use this method for equations, enumerate items and footnotes. The author of **RefTEX** tends to write documents with many equations and finds it impossible to come up with good names for each of them. These simple labels are inserted without query, and are therefore very fast. Good descriptive names are not really necessary as **RefTEX** will provide context to reference a label (see Section 3.2 [Referencing Labels], page 6).
3. The third method is to ask the user for a label. This is most useful for things which are easy to describe briefly and do not turn up too frequently in a document. **RefTEX** uses this for figures and tables. Of course, one can enter the label directly by typing the full '`\label{mark}`'. The advantage of using `reftex-label` anyway is that **RefTEX** will know that a new label has been defined. It will then not be necessary to rescan the document in order to access this label later.

If you want to change the way certain labels are created, check out the variable `reftex-insert-label-flags` (see Section 8.3 [Options (Creating Labels)], page 32).

[1] Note that the context may contain constructs which are illegal in labels. **RefTEX** will therefore strip the accent from accented Latin-1 characters and remove everything else which is not legal in labels. This mechanism is safe, but may not be satisfactory for non-western languages. Check the following variables if you need to change things: `reftex-translate-to-ascii-function`, `reftex-derive-label-parameters`, `reftex-label-illegal-re`, `reftex-abbrev-parameters`.

If you are using AUCTeX to write your LaTeX documents, you can set it up to delegate the creation of labels to **RefTEX**. See Section 6.8 [AUCTeX], page 22, for more information.

3.2 Referencing Labels

Referencing Labels is really at the heart of **RefTEX**. Press *C-c)* in order to reference a label (reftex-reference). This will start a selection process and finally insert the complete '`\ref{label}`' into the buffer.

First, **RefTEX** will determine the label category which is required. Often that can be figured out from context. For example, if you write '`As shown in eq.`' and the press *C-c)*, **RefTEX** knows that an equation label is going to be referenced. If it cannot figure out what label category is needed, it will query for one.

You will then be presented with a label selection menu. This is a special buffer which contains an outline of the document along with all labels of the given label category. In addition, next to the label there will be one line of context of the label definition, which is some text in the buffer near the label definition. Usually this is sufficient to identify the label. If you are unsure about a certain label, pressing ⟨SPC⟩ will show the label definition point in another window.

In order to reference a label, move to cursor to the correct label and press ⟨RET⟩.
Here is a list of special commands in the selection buffer. A summary of this information is always available from the selection process by pressing *?*.

0-9,- Prefix argument.

b Jump back to the position where you last left the selection buffer. Normally this should get you back to the last referenced label.

c Toggle the display of the one-line label definition context in the selection buffer.

f Toggle follow mode. When follow mode is active, the other window will always display the full context of the current label. This is similar to pressing ⟨SPC⟩ after each cursor motion. Note that only context in files already visited is shown. **RefTeX** will not visit a file just for follow mode. See, however, the variable `reftex-revisit-to-follow`.

g Update the menu. This will rebuilt the menu from the internal label list, but not reparse the document (see *r*).

i Toggle the display of the file borders of a multifile document in the selection buffer.

l Use the last referenced label again. This is equivalent to moving to that label and pressing ⟨RET⟩.

n Go to next label.

p Go to previous label.

q Exit the selection process without inserting any reference into the buffer.

r Reparse the document to update the information on all labels and rebuild the menu. If the variable `reftex-enable-partial-scans` is non-`nil` and your document is a multifile document, this will reparse only a part of the document (the file in which the label at point was defined).

R

Reparse the *entire* document.

s

Switch the label category. After prompting for another label category, a menu for that category will be shown.

t

Toggle the display of the table of contents in the selection buffer.

v

Toggle between `\ref` and `\vref` macro for references. The `\vref` macro is defined in the `varioref` LaTeX package. With this key you can force **RefTeX** to insert a `\vref` macro. The current state of this flag is displayed in the mode line of the selection buffer.

x

Reference a label from an external document. With the LaTeX package `xr` it is possible to reference labels defined in another document. This key will switch to the label menu of an external document and let you select a label from there (see Section 3.6 [xr], page 12).

.

Show insertion point in another window. This is the point from where you called `reftex-reference`.

⟨TAB⟩

Enter a label with completion. This may also be a label which does not yet exist in the document.

⟨SPC⟩

Show the surroundings of the definition of the current label in another window. See also the *f* key.

⟨RET⟩

Insert a reference to the label at point into the buffer from which the selection process was started.

mouse-2

Clicking with mouse button 2 on a label will accept it like ⟨RET⟩ would. See also variable `reftex-highlight-selection`, Section 8.10 [Options (Misc)], page 43.

#

Toggle the display of a label counter in the selection buffer.

%

Toggle the display of labels hidden in comments in the selection buffers. Sometimes, you may have commented out parts of your document. If these parts contain label definitions, **RefTeX** can still display and reference these labels.

?

Show a summary of the available keys.

C-c C-n

Goto next section heading (like outline mode).

C-c C-p

Goto previous section heading (like outline mode).

Several of these keys toggle certain settings. The default value for these flags can be preset by configuring the variable `reftex-label-menu-flags` (see Section 8.4 [Options (Referencing Labels)], page 34). In order to define additional commands for the selection process, the keymap `reftex-select-label-map` may be used.

3.3 Builtin Label Environments

RefTEX needs to be aware of the environments which can be referenced with a label (i.e. which carry their own counters). By default, **RefTEX** recognizes all labeled environments and macros discussed in *The LaTeX Companion by Goossens, Mittelbach & Samarin, Addison-Wesley 1994.*. These are:

- figure, figure*, table, table*, equation, eqnarray, enumerate, the \footnote macro (this is the LaTeX core stuff)
- align, gather, multline, flalign, alignat, xalignat, xxalignat, subequations (from AMS-LaTeX's 'amsmath.sty' package)
- the \endnote macro (from 'endnotes.sty')
- Beqnarray ('fancybox.sty')
- floatingfig ('floatfig.sty')
- longtable ('longtable.sty')
- figwindow, tabwindow ('picinpar.sty')
- SCfigure, SCtable ('sidecap.sty')
- sidewaysfigure, sidewaystable ('rotating.sty')
- subfigure, subfigure*, the \subfigure macro ('subfigure.sty')
- supertabular ('supertab.sty')
- wrapfigure ('wrapfig.sty')

If you want to use other labeled environments, defined with \newtheorem, **RefTEX** needs to be configured to recognize them (see Section 3.4 [Defining Label Environments], page 8).

3.4 Defining Label Environments

RefTEX can be configured to recognize additional labeled environments and macros. This is done with the variable reftex-label-alist (see Section 8.2 [Options (Defining Label Environments)], page 30). If you are not familiar with Lisp, you should use the custom library to configure this rather complex variable. To do this, use

```
M-x customize-variable ⟨RET⟩ reftex-label-alist ⟨RET⟩
```

Here we will discuss a few examples, in order to make things clearer. It can also be instructive to look at the constant reftex-label-alist-builtin which contains the entries for all the builtin environments and macros (see Section 3.3 [Builtin Label Environments], page 8).

3.4.1 Theorem and Axiom Environments

Suppose you are using \newtheorem in LaTeX in order to define two new environments, theorem and axiom

```
\newtheorem{axiom}{Axiom}
\newtheorem{theorem}{Theorem}
```

to be used like this:

```
\begin{axiom}
\label{ax:first}
  ....
\end{axiom}
```

So we need to tell **RefTeX** that `theorem` and `axiom` are new labeled environments which define their own label categories. We can either use Lisp to do this (e.g. in '`.emacs`') or use the custom library. With Lisp it would look like this

```
(setq reftex-label-alist
   '(("axiom"   ?a "ax:"  "~\\ref{%s}" nil ("axiom"   "ax."))
     ("theorem" ?h "thr:" "~\\ref{%s}" t   ("theorem" "theor." "th."))))
```

The type indicator characters `?a` and `?h` are used for prompts when **RefTeX** queries for a label type. `?h` was chosen for `theorem` since `?t` is already taken by `table`. Note that also `?s`, `?f`, `?e`, `?i`, `?n` are already used for standard environments.

The labels for Axioms and Theorems will have the prefixes '`ax:`' and '`thr:`', respectively. See Section 6.8 [AUCTeX], page 22, for information on how AUCTeX can use **RefTeX** to automatically create labels when a new environment is inserted into a buffer.

The '`~\ref{%s}`' is a format string indicating how to insert references to these labels.

The next item indicates how to grab context of the label definition.

- `t` means to get it from a default location (from the beginning of a `\macro` or after the `\begin` statement). `t` is *not* a good choice for eqnarray and similar environments.
- `nil` means to use the text right after the label definition.
- For more complex ways of getting context, see the variable `reftex-label-alist` (see Section 8.2 [Options (Defining Label Environments)], page 30).

The strings at the end of each entry are used to guess the correct label type from the word before point when creating a reference. E.g. if you write: '`As we have shown in Theorem`' and then press *C-c)*, **RefTeX** will know that you are looking for a theorem label and restrict the menu to only these labels without even asking.

To do the same configuration with `customize`, you need to click on the `[INS]` button twice to create two templates and fill them in like this:

```
Reftex Label Alist: [Hide]
[INS] [DEL] Package or Detailed   : [Value Menu] Detailed:
            Environment or \macro : [Value Menu] String: axiom
            Type specification    : [Value Menu] Char  : a
            Label prefix string   : [Value Menu] String: ax:
            Label reference format: [Value Menu] String: ~\ref{%s}
            Context method        : [Value Menu] After label
            Magic words:
              [INS] [DEL] String: axiom
              [INS] [DEL] String: ax.
              [INS]
[INS] [DEL] Package or Detailed   : [Value Menu] Detailed:
            Environment or \macro : [Value Menu] String: theorem
            Type specification    : [Value Menu] Char  : h
            Label prefix string   : [Value Menu] String: thr:
            Label reference format: [Value Menu] String: ~\ref{%s}
            Context method        : [Value Menu] Default position
            Magic words:
              [INS] [DEL] String: theorem
              [INS] [DEL] String: theor.
              [INS] [DEL] String: th.
              [INS]
```

Depending on how you would like the label insertion and selection for the new environments to work, you might want to add the letters ‘`a`’ and ‘`h`’ to some of the flags in the variables `reftex-insert-label-flags` (see Section 8.3 [Options (Creating Labels)], page 32) and `reftex-label-menu-flags` (see Section 8.4 [Options (Referencing Labels)], page 34).

3.4.2 Quick Equation Macro

Suppose you would like to have a macro for quick equations. It could be defined like this:

```
\newcommand{\quickeq}[1]{\begin{equation} #1 \end{equation}}
```

and used like this:

```
Einstein's equation is \quickeq{E=mc^2 \label{eq:einstein}}.
```

We need to tell **RefTeX** that any label defined in the argument of the `\quickeq` is an equation label. Here is how to do this with lisp:

```
(setq reftex-label-alist '(("\\quickeq{}" ?e nil nil 1 nil)))
```

The first element in this list is now the macro with empty braces as an *image* of the macro arguments. `?e` indicates that this is an equation label, the different `nil` elements indicate to use the default values for equations. The ‘`1`’ as the fifth element indicates that the context of the label definition should be the 1st argument of the macro.

Here is again how this would look in the customization buffer:

```
Reftex Label Alist: [Hide]
[INS] [DEL] Package or Detailed   : [Value Menu] Detailed:
            Environment or \macro : [Value Menu] String: \quickeq{}
            Type specification    : [Value Menu] Char  : e
            Label prefix string   : [Value Menu] Default
            Label reference format: [Value Menu] Default
            Context method        : [Value Menu] Macro arg nr: 1
            Magic words:
              [INS]
```

3.4.3 Figure Wrapping Macro

Suppose you want to make figures not directly with the figure environment, but with a macro like

```
\newcommand{\myfig}[5][tbp]{%
  \begin{figure}[#1]
    \epsimp[#5]{#2}
    \caption{#3}
    \label{#4}
```

```
       \end{figure}}
```

which would be called like

```
     \myfig[htp]{filename}{caption text}{label}{1}
```

Now we need to tell **RefTeX** that the 4th argument of the `\myfig` macro *is itself* a figure label, and where to find the context.

```
     (setq reftex-label-alist
           '(("\\myfig[]{}{}{*}{}" ?f nil nil 3)))
```

The empty pairs of brackets indicate the different arguments of the `\myfig` macro. The '`*`' marks the label argument. `?f` indicates that this is a figure label which will be listed together with labels from normal figure environments. The `nil` entries for prefix and reference format mean to use the defaults for figure labels. The '`3`' for the context method means to grab the 3rd macro argument - the caption.

As a side effect of this configuration, `reftex-label` will now insert the required naked label (without the `\label` macro) when point is directly after the opening parenthesis of a `\myfig` macro argument.

Again, here the configuration in the customization buffer:

```
     [INS] [DEL] Package or Detailed   : [Value Menu] Detailed:
                 Environment or \macro : [Value Menu] String: \myfig[]{}{}{*}{}
                 Type specification    : [Value Menu] Char  : f
                 Label prefix string   : [Value Menu] Default
                 Label reference format: [Value Menu] Default
                 Context method        : [Value Menu] Macro arg nr: 3
                 Magic words:
                   [INS]
```

3.4.4 Adding Magic Words

Sometimes you don't want to define a new label environment or macro, but just change the information associated with a label category. Maybe you want to add some magic words, for another language. Changing only the information associated with a label category is done by giving `nil` for the environment name and then specify the items you want to define. Here is an example which adds German magic words to all predefined label categories.

```
     (setq reftex-label-alist
       '((nil ?s nil nil nil ("Kapitel" "Kap." "Abschnitt" "Teil"))
         (nil ?e nil nil nil ("Gleichung" "Gl."))
         (nil ?t nil nil nil ("Tabelle"))
         (nil ?f nil nil nil ("Figur" "Abbildung" "Abb."))
         (nil ?n nil nil nil ("Anmerkung" "Anm."))
         (nil ?i nil nil nil ("Punkt"))))
```

3.4.5 Using `\eqref`

Another case where one only wants to change the information associated with the label category is to change the macro which is used for referencing the label. When working with the AMS-LaTeX stuff, you might prefer `\eqref` for doing equation references. Here is how to do this:

```
(setq reftex-label-alist '((nil ?e nil "~\\eqref{%s}" nil nil)))
```

RefTEX has also a predefined symbol for this special purpose. The following is equivalent to the line above.

```
(setq reftex-label-alist '(AMSTeX))
```

Note that this is automatically done by the 'amsmath.el' style file of AUCTeX (see Section 6.8.2 [Style Files], page 23)—so if you use AUCTeX, this configuration will not be necessary.

3.4.6 Putting it all together

When you have to put several entries into reftex-label-alist, just put them after each other in a list, or create that many templates in the customization buffer. Here is a lisp example which uses several of the entries described above:

```
(setq reftex-label-alist
  '(("axiom"   ?a "ax:"  "~\\ref{%s}" nil ("axiom"   "ax."))
    ("theorem" ?h "thr:" "~\\ref{%s}" t   ("theorem" "theor." "th."))
    ("\\quickeq{}" ?e nil nil 1 nil)
    AMSTeX
    ("\\myfig[]{}{}{*}{}" ?f nil nil 3)))
```

3.5 Reference Info

When point is idle on the argument of a \ref macro, the echo area will display some information about the label referenced there. Note that the information is only displayed if the echo area is not occupied by a different message.

RefTEX can also display the label definition corresponding to a \ref macro, or all reference locations corresponding to a \label macro. See Chapter 5 [Viewing Cross-References], page 17, for more information.

3.6 xr: Cross-Document References

The LaTeX package xr makes it possible to create references to labels defined in external documents. The preamble of a document using xr will contain something like this:

```
\usepackage{xr}
\externaldocument[V1-]{volume1}
\externaldocument[V3-]{volume3}
```

and we can make references to any labels defined in these external documents by using the prefixes 'V1-' and 'V3-', respectively.

RefTEX can be used to create such references as well. Start the referencing process normally, by pressing *C-c)*. Select a label type if necessary. When you see the label selection buffer, pressing *x* will switch to the label selection buffer of one of the external documents. You may then select a label as before and **RefTEX** will insert it along with the required prefix.

For this kind of inter-document cross–references, saving of parsing information and the use of multiple selection buffers can mean a large speed-up (see Section 6.7 [Optimizations], page 20).

3.7 `varioref`: Variable Page References

`varioref` is a frequently used LaTeX package to create cross–references with page information. When you want to make a reference with the `\vref` macro, just press the *v* key in the selection buffer to toggle between the `\ref` and `\vref` (see Section 3.2 [Referencing Labels], page 6). The mode line of the selection buffer shows the current status of this switch. If you find that you almost always use `\vref`, you may want to make it the default by customizing the variable `reftex-vref-is-default`.

4 Citations

Citations in LaTeX are done with the `\cite` macro or variations of it. The argument of the macro is a citation key which identifies an article or book in either a BibTeX database file or in an explicit `thebibliography` environment in the document. **RefTEX**'s support for citations helps to select the correct key quickly.

4.1 Creating Citations

In order to create a citation, press *C-c [*. **RefTEX** then prompts for a regular expression which will be used to search through the database and present the list of matches to choose from in a selection process similar to that for selecting labels (see Section 3.2 [Referencing Labels], page 6).

The regular expression uses an extended syntax: '`&&`' defines a logic `and` for regular expressions. For example '`Einstein&&Bose`' will match all articles which mention Bose-Einstein condensation, or which are co-authored by Bose and Einstein. When entering the regular expression, you can complete on known citation keys.

RefTEX prefers to use BibTeX database files specified with a `\bibliography` macro to collect its information. Just like BibTeX, it will search for the specified files in the current directory and along the path given in the environment variable `BIBINPUTS`. If you do not use BibTeX, but the document contains an explicit `thebibliography` environment, **RefTEX** will collect its information from there. Note that in this case the information presented in the selection buffer will just be a copy of relevant `\bibitem` entries, not the structured listing available with BibTeX database files.

In the selection buffer, the following keys provide special commands. A summary of this information is always available from the selection process by pressing *?*.

0-9,- Prefix argument.

`a` Accept all entries in the selection buffer and create a single `\cite` macro referring to them.

A Accept all entries in the selection buffer and create a `\cite` macro for each of it.

f Toggle follow mode. When follow mode is active, the other window will always display the full database entry of the current article. This is equivalent to pressing ⟨SPC⟩ after each cursor motion. With BibTeX entries, follow mode can be rather slow.

g Start over with a new regular expression. The full database will be rescanned with the new expression (see also *r*).

n Go to next article.

p Go to previous article.

q Exit the selection process without inserting a citation into the buffer.

r Refine the current selection with another regular expression. This will *not* rescan the entire database, but just the already selected entries.

`.` Show insertion point in another window. This is the point from where you called `reftex-citation`.

⟨TAB⟩ Enter a citation key with completion. This may also be a key which does not yet exist.

⟨SPC⟩ Show the database entry corresponding to the article at point, in another window. See also the *f* key.

⟨RET⟩ Insert a citation referencing the article at point into the buffer from which the selection process was started.

mouse-2 Clicking with mouse button 2 on a citation will accept it like ⟨RET⟩ would. See also variable `reftex-highlight-selection`, Section 8.10 [Options (Misc)], page 43.

? Show a summary of the available keys.

In order to define additional commands for this selection process, the keymap `reftex-select-bib-map` may be used.

4.2 Citation Styles

The standard LaTeX macro `\cite` works well with numeric or simple key citations. To deal with the more complex task of author-year citations as used in many natural sciences, a variety of packages has been developed which define derived forms of the `\cite` macro. **RefTEX** can be configured to produce these citation macros as well by setting the variable `reftex-cite-format`. For the most commonly used packages (`natbib`, `harvard`, `chicago`) this may be done from the menu, under `Ref->Citation Styles`. Since there are usually several macros to create the citations, executing `reftex-citation` (*C-c [*) starts by prompting for the correct macro. For the Natbib style, this looks like this:

```
SELECT A CITATION FORMAT

[^M]   \cite{%l}
[t]    \citet{%l}
[T]    \citet*{%l}
[p]    \citep{%l}
[P]    \citep*{%l}
[e]    \citep[e.g.][]{%l}
[s]    \citep[see][]{%l}
[a]    \citeauthor{%l}
[A]    \citeauthor*{%l}
[y]    \citeyear{%l}
```

Following the most generic of these packages, `natbib`, the builtin citation packages always accept the *t* key for a *textual* citation (like: `Jones et al. (1997) have shown...`) as well as the *p* key for a parenthetical citation (like: `As shown earlier (Jones et al, 1997)`).

To make one of these styles the default, customize the variable `reftex-cite-format` or put into '`.emacs`':

```
(setq reftex-cite-format 'natbib)
```

You can also use AUCTeX style files to automatically set the citation style based on the `usepackage` commands in a given document. See Section 6.8.2 [Style Files], page 23, for information on how to set up the style files correctly.

4.3 Citation Info

When point is idle on the argument of a `\cite` macro, the echo area will display some information about the article cited there. Note that the information is only displayed if the echo area is not occupied by a different message.

RefTEX can also display the `\bibitem` or BibTeX database entry corresponding to a `\cite` macro, or all citation locations corresponding to a `\bibitem` or BibTeX database entry. See Chapter 5 [Viewing Cross-References], page 17, for more information.

4.4 Chapterbib and Bibunits

`chapterbib` and `bibunits` are two LaTeX packages which produce multiple bibliographies in a document. This is no problem for **RefTEX** as long as all bibliographies use the same BibTeX database files. If they do not, it is best to have each document part in a separate file (as it is required for `chapterbib` anyway). Then **RefTEX** will still scan the locally relevant databases correctly. If you have multiple bibliographies within a *single file*, this may or may not be the case.

4.5 Citations outside LaTeX

The command `reftex-citation` can also be executed outside a LaTeX buffer. This can be useful to reference articles in the mail buffer and other documents. You should *not* enter `reftex-mode` for this, just execute the command. The list of BibTeX files will in this case be taken from the variable `reftex-default-bibliography`. Setting the variable `reftex-cite-format` to the symbol `locally` does a decent job of putting all relevant information about a citation directly into the buffer. Here is the lisp code to add the *C-c [* binding to the mail buffer. It also provides a local binding for `reftex-cite-format`.

```
(add-hook
 'mail-setup-hook
 (lambda ()
   (define-key mail-mode-map "\C-c["
     (lambda ()
       (interactive)
       (require 'reftex)
       (let ((reftex-cite-format 'locally))
         (reftex-citation))))))
```

5 Viewing Cross–References

RefTEX can display cross–referencing information. This means, if two document locations are linked, **RefTEX** can display the matching location(s) in another window. The `\label` and `\ref` macros are one way of estabishing such a link. Also, a `\cite` macro is linked to the corresponding `\bibitem` macro or a BibTeX database entry.

The feature is invoked by pressing *C-c &* (`reftex-view-crossref`) while point is on the *key* argument of a macro involved in cross–referencing. You can also click with *S-mouse-2* on the macro argument. Here is what will happen for individual classes of macros:

`\ref` Display the corresponding label definition. All usual variants[1] of the `\ref` macro are active for cross–reference display. This works also for labels defined in an external document when the current document refers to them through the `xr` interface (see Section 3.6 [xr (LaTeX package)], page 12).

`\label` Display a document location which references this label. Pressing *C-c &* several times moves through the entire document and finds all locations. Not only the `\label` macro but also other macros with label arguments (as configured with `reftex-label-alist`) are active for cross–reference display.

`\cite` Display the corresponding BibTeX database entry or `\bibitem`. All usual variants[2] of the `\cite` macro are active for cross–reference display.

`\bibitem` Display a document location which cites this article. Pressing *C-c &* several times moves through the entire document and finds all locations.

BibTeX *C-c &* is also active in BibTeX buffers. All locations in a document where the database entry at point is cited will be displayed. On first use, **RefTEX** will prompt for a buffer which belongs to the document you want to search. Subsequent calls will use the same document, unless you break this link with a prefix argument to *C-c &*.

`\index` Display other locations in the document which are marked by the same index entry. The standard `\index` macro as well as many variants[3] will be recognized.

While the display of cross reference information for citations and labels is hard–coded within **RefTEX**, the '`\index`' stuff is configured in the variable `reftex-view-crossref-macros`. You can customize this variable to add other sets of macros for which the display of cross–referencing information can be useful.

[1] all macros that either start or end with '`ref`'

[2] all macros that either start or end with '`cite`'

[3] all macros which contain either '`index`' or '`idx`' in their name

6 All the Rest

6.1 RefTeX's Menu

RefTeX installs a `Ref` menu in the menu bar on systems which support this. From this menu you can access all of **RefTeX**'s commands and a few of its options. There is also a `Customize` submenu which can be used to access **RefTeX**'s entire set of options.

6.2 Default Keybindings

Here is a summary of the available keybindings.

C-c =	`reftex-toc`
C-c (	`reftex-label`
C-c)	`reftex-reference`
C-c [	`reftex-citation`
C-c &	`reftex-view-crossref`
S-mouse-2	`reftex-mouse-view-crossref`

Note that the *S-mouse-2* binding is only provided if this key is not already used by some other package. **RefTeX** will not override an existing binding to *S-mouse-2*.

The above keys were chosen to avoid interfering with AUCTeX's settings. Personally, I also bind some functions in the users *C-c* map for easier access:

C-c t	`reftex-toc`
C-c l	`reftex-label`
C-c r	`reftex-reference`
C-c c	`reftex-citation`
C-c v	`reftex-view-crossref`
C-c s	`reftex-search-document`
C-c g	`reftex-grep-document`

If you want to copy these as well, set in your '`.emacs`' file:

```
(setq reftex-extra-bindings t)
```

Changing and adding to **RefTeX**'s keybindings is best done in the hook `reftex-load-hook`. For information on the keymaps which should be used to add keys, see Section 8.11 [Keymaps and Hooks], page 43.

6.3 Faces

RefTeX uses faces when available to structure the selection and table of contents buffers. It does not create its own faces, but uses the ones defined in '`font-lock.el`'. Therefore, **RefTeX** will use faces only when `font-lock` is loaded. This seems to be reasonable because people who like faces will very likely have it loaded. If you wish to turn off fontification or change the involved faces, see Section 8.9 [Options (Fontification)], page 41.

6.4 Multifile Documents

The following is relevant when working with documents spread over many files:

- **RefTEX** has full support for multifile documents. You can edit parts of several (multifile) documents at the same time without conflicts. **RefTEX** provides functions to run `grep`, `search` and `query-replace` on all files which are part of a multifile document.
- All files belonging to a multifile document should have a File Variable (`TeX-master` for AUCTeX or `tex-main-file` for the standard Emacs LaTeX mode) set to the name of the master file. See the documentation of your (La)TeX mode and section "File Variables" in *The GNU Emacs Manual*.
- The context of a label definition must be found in the same file as the label itself in order to be processed correctly by **RefTEX**. The only exception is that section labels referring to a section statement outside the current file can still use that section title as context.

6.5 Language Support

Some parts of **RefTEX** are language dependent. The default settings work well for English. If you are writing in a different language, the following hints may be useful:

- The mechanism to derive a label from context includes the abbreviation of words and omission of unimportant words. These mechanisms may have to be changed for other languages. See the variables `reftex-derive-label-parameters` and `reftex-abbrev-parameters`.
- Also, when a label is derived from context, **RefTEX** clears the context string from non-ASCII characters in order to make a legal label. If you are using a special version of TEX which allows extended characters *in labels*, then you should look at the variables `reftex-translate-to-ascii-function` and `reftex-label-illegal-re`.
- When a label is referenced, **RefTEX** looks at the word before point to guess which label type is required. These *magic words* are different in every language. For an example of how to add magic words, see Section 3.4.4 [Adding Magic Words], page 11.

6.6 Finding Files

In order to find files included in a document via `\input` or `\include`, **RefTEX** searches all directories specified in the environment variable `TEXINPUTS`. Similarly, it will search the path specified in the variables `BIBINPUTS` and `TEXBIB` for BibTeX database files.

When searching, **RefTEX** will also expand recursive path definitions (directories ending in '`//`' or '`!!`'). But it will only search and expand directories *explicitly* given in these variables. This may cause problems under the following circumstances:

- Most TeX system have a default search path for both TeX files and BibTeX files which is defined in some setup file. Usually this default path is for system files which **RefTEX** does not need to see. But if your document needs TeX files or BibTeX database files in a directory only given in the default search path, **RefTEX** will fail to find them.
- Some TeX systems do not use environment variables at all in order to specify the search path. Both default and user search path are then defined in setup files.

There are three ways to solve this problem:

- Specify all relevant directories explicitly in the environment variables. If for some reason you don't want to mess with the default variables `TEXINPUTS` and `BIBINPUTS`, define your own variables and configure **RefTEX** to use them instead:

```
(setq reftex-texpath-environment-variables '("MYTEXINPUTS"))
(setq reftex-bibpath-environment-variables '("MYBIBINPUTS"))
```

- Specify the full search path directly in **RefTEX**'s variables.

```
(setq reftex-texpath-environment-variables
      '("./inp:/home/cd/tex//:/usr/local/tex//"))
(setq reftex-bibpath-environment-variables
      '("/home/cd/tex/lit/"))
```

- Some TeX systems provide stand–alone programs to do the file search just like TeX and BibTeX. E.g. Thomas Esser's `teTeX` uses the `kpathsearch` library which provides the command `kpsewhich` to search for files. **RefTEX** can be configured to use this program. Note that the exact syntax of the `kpsewhich` command depends upon the version of that program.

```
(setq reftex-use-external-file-finders t)
(setq reftex-external-file-finders
      '(("tex" "kpsewhich -format=.tex %f")
        ("bib" "kpsewhich -format=.bib %f")))
```

6.7 Optimizations

Implementing the principle of least surprises, the default settings of **RefTEX** ensure a safe ride for beginners and casual users. However, when using **RefTEX** for a large project and/or on a small computer, there are ways to improve speed or memory usage.

- **Removing Lookup Buffers**
  RefTEX will load other parts of a multifile document as well as BibTeX database files for lookup purposes. These buffers are kept, so that subsequent use of the same files is fast. If you can't afford keeping these buffers around, and if you can live with a speed penalty, try

```
(setq reftex-keep-temporary-buffers nil)
```

- **Partial Document Scans**
  A *C-u* prefix on the major **RefTEX** commands `reftex-label` (*C-u C-c (*), `reftex-reference` (*C-u C-c)*), `reftex-citation` (*C-u C-c [*), `reftex-toc` (*C-u C-c =*), and `reftex-view-crossref` (*C-u C-c &*) initiates re-parsing of the entire document in order to update the parsing information. For a large document this can be unnecessary, in particular if only one file has changed. **RefTEX** can be configured to do partial scans instead of full ones. *C-u* re-parsing then does apply only to the current buffer and files included from it. Likewise, the *r* key in both the label selection buffer and the table-of-contents buffer will only prompt scanning of the file in which the label or section macro near the cursor was defined. Re-parsing of the entire document is still available by using *C-u C-u* as a prefix, or the capital *R* key in the menus. To use this feature, try

```
(setq reftex-enable-partial-scans t)
```

- **Saving Parser Information**
  Even with partial scans enabled, **RefTEX** still has to make one full scan, when you start working with a document. To avoid this, parsing information can be stored in a file. The file '`MASTER.rel`' is used for storing information about a document with master file '`MASTER.tex`'. It is written automatically when you kill a buffer in `reftex-mode` or when you exit Emacs. The information is restored when you begin working with a document in a new editing session. To use this feature, put into '`.emacs`':

  ```
  (setq reftex-save-parse-info t)
  ```

- **Automatic Document Scans**
  At rare occasions, **RefTEX** will automatically rescan a part of the document. If this gets into your way, it can be turned off with

  ```
  (setq reftex-allow-automatic-rescan nil)
  ```

  RefTEX will then occasionally annotate new labels in the selection buffer, saying that their position in the label list in uncertain. A manual document scan will fix this.

- **Multiple Selection Buffers**
  Normally, the selection buffer '`*RefTeX Select*`' is re-created for every selection process. In documents with very many labels this can take several seconds. **RefTEX** provides an option to create a separate selection buffer for each label type and to keep this buffer from one selection to the next. These buffers are updated automatically only when a new label has been added in the buffers category with `reftex-label`. Updating the buffer takes as long as recreating it - so the time saving is limited to cases where no new labels of that category have been added. To turn on this feature, use

  ```
  (setq reftex-use-multiple-selection-buffers t)
  ```

  You can also inhibit the automatic updating entirely. Then the selection buffer will always pop up very fast, but may not contain the most recently defined labels. You can always update the buffer by hand, with the *g* key. To get this behavior, use instead

  ```
  (setq reftex-use-multiple-selection-buffers t
        reftex-auto-update-selection-buffers nil)
  ```

As a summary, here are the settings I recommend for heavy use of **RefTEX** with large documents:

```
(setq reftex-enable-partial-scans t
      reftex-save-parse-info t
      reftex-use-multiple-selection-buffers t)
```

6.8 AUC TEX

AUCTeX is without doubt the best major mode for editing TeX and LaTeX files with Emacs. AUCTeX is part of the XEmacs distribution. It is also available from the AUCTeX distribution site (`http://www.sunsite.auc.dk/auctex/`).

6.8.1 The AUCTEX-RefTEX Interface

RefTEX contains code to interface with AUCTeX. When this interface is turned on, both packages will interact closely. Instead of using **RefTEX**'s commands directly, you can then also use them indirectly as part of the AUCTeX environment[1]. The interface is turned on with

```
(setq reftex-plug-into-AUCTeX t)
```

If you need finer control about which parts of the interface are used and which not, customize this variable with *M-x customize-variable* ⟨RET⟩ *reftex-plug-into-AUCTeX* ⟨RET⟩.

The following list describes the individual parts of the interface.

- **AUCTeX calls `reftex-label` to insert labels**
  When a new section is created with *C-c C-s*, or a new environment is inserted with *C-c C-e*, AUCTeX normally prompts for a label to go with it. With the interface, `reftex-label` is called instead. For example, if you type *C-c C-e equation* ⟨RET⟩, AUCTeX and **RefTEX** will insert

  ```
  \begin{equation}
  \label{eq:1}

  \end{equation}
  ```

  without further prompts.

  Similarly, when you type *C-c C-s section* ⟨RET⟩, **RefTEX** will offer its default label which is derived from the section title.
- **AUCTeX tells RefTEX about new sections**
  When creating a new section with *C-c C-s*, **RefTEX** will not have to rescan the buffer in order to see it.
- **RefTEX supplies macro arguments**
  When you insert a macro interactively with *C-c* ⟨RET⟩, AUCTeX normally prompts for macro arguments. Internally, it uses the functions `TeX-arg-label` and `TeX-arg-cite` to prompt for arguments which are labels and citation keys. The interface takes over these functions[2] and supplies the macro arguments with **RefTEX's** mechanisms. For example, when you type *C-c* ⟨RET⟩ *ref* ⟨RET⟩, **RefTEX** will supply its label selection process (see Section 3.2 [Referencing Labels], page 6).
- **RefTEX tells AUCTeX about new labels and citations keys**
  RefTEX will add all newly created labels to AUCTeX's completion list.

[1] **RefTEX** 3.23 and AUCTeX 9.9c will be needed for all of this to work. Parts of it work also with earlier versions.

[2] `fset` is used to do this, which is not reversible. However, **RefTEX** implements the old functionality when you later decide to turn off the interface.

6.8.2 Style Files

Style files are Emacs Lisp files which are evaluated by AUCTeX in association with the `\documentclass` and `\usepackage` commands of a document. Support for **RefTeX** in such a style file is useful when the LaTeX style defines macros or environments connected with labels and citations. Some style files (e.g. ‘`amsmath.el`’ or ‘`natbib.el`’) distributed with AUCTeX already support **RefTeX** in this way.

Before calling a **RefTeX** function, the style hook should always test for the availability of the function, so that the style file will also work for people who do not use **RefTeX**.

Additions made with style files in the way described below remain local to the current document. For example, if one package uses AMSTeX, the style file will make **RefTeX** switch over to `\eqref`, but this will not affect other documents.

A style hook may contain calls to `reftex-add-label-environments`[3] which defines additions to `reftex-label-alist`. The argument taken by this function must have the same format as `reftex-label-alist`. The ‘`amsmath.el`’ style file of AUCTeX for example contains the following:

```
(TeX-add-style-hook "amsmath"
   (lambda ()
     (if (fboundp 'reftex-add-label-environments)
         (reftex-add-label-environments '(AMSTeX)))))
```

while a package `myprop` defining a `proposition` environment with `\newtheorem` might use

```
(TeX-add-style-hook "myprop"
   (lambda ()
     (LaTeX-add-environments '("proposition" LaTeX-env-label))
     (if (fboundp 'reftex-add-label-environments)
         (reftex-add-label-environments
          '(("proposition" ?p "prop:" "~\\ref{%s}" t
                           ("Proposition" "Prop.")))))))
```

Similarly, a style hook may contain a call to `reftex-set-cite-format` to set the citation format. The style file ‘`natbib.el`’ for the Natbib citation style does switch **RefTeX**’s citation format like this:

```
(TeX-add-style-hook "natbib"
   (lambda ()
     (if (fboundp 'reftex-set-cite-format)
         (reftex-set-cite-format 'natbib))))
```

Finally, the hook may contain a call to `reftex-add-section-levels` to define additional section statements. For example, the FoilTeX class has just two headers, `\foilhead` and `\rotatefoilhead`. Here is a style file ‘`foils.el`’ that will inform **RefTeX** about these:

```
(TeX-add-style-hook "foils"
   (lambda ()
     (if (fboundp 'reftex-add-section-levels)
         (reftex-add-section-levels '(("foilhead" . 3)
                                      ("rotatefoilhead" . 3))))))
```

[3] This used to be the function `reftex-add-to-label-alist` which is still available as an alias for compatibility.

6.8.3 Bib-Cite

Once you have written a document with labels, references and citations, it can be nice to read it like a hypertext document. **RefTEX** has some support for that: `reftex-view-crossref` (bound to *C-c &*), `reftex-mouse-view-crossref` (bound to *S-mouse-2*), and `reftex-search-document`. A somewhat fancier interface with mouse highlighting is provided (among other things) by Peter S. Galbraith's '`bib-cite.el`'. There is some overlap in the functionalities of Bib-cite and **RefTEX**. Bib-cite.el comes bundled with AUCTeX.

Bib-cite version 3.06 and later can be configured so that bib-cite's mouse functions use **RefTEX** for displaying references and citations. This can be useful in particular when working with the LaTeX `xr` package or with an explicit `thebibliography` environment (rather than BibTeX). Bib-cite cannot handle those, but **RefTEX** does. To make use of this feature, try

```
(setq bib-cite-use-reftex-view-crossref t)
```

6.9 Problems and Work-arounds

- **LaTeX commands**
  `\input`, `\include`, `\bibliography` and `\section` (etc.) statements have to be first on a line (except for white space).
- **Command abbreviations**
  Some people define abbreviations for environments, like `\be` for `\begin{equation}`, and `\ee` for `\end{equation}`. **RefTEX** cannot be configured to see these—you will have to used the full `\begin` and `\end` statements.
- **Commented regions**
  RefTEX sees also labels in regions commented out and will refuse to make duplicates of such labels. This is considered to be a feature.
- **Wrong section numbers**
  When using partial scans (`reftex-enable-partial-scans`), the section numbers in the table of contents may eventually become wrong. A full scan will fix this.
- **Local settings**
  The label environment definitions in `reftex-label-alist` are global and apply to all documents. If you need to make definitions local to a document, because they would interfere with settings in other documents, you should use AUCTeX and set up style files with calls to `reftex-add-label-environments`, `reftex-set-cite-format`, and `reftex-add-section-levels`. Settings made with these functions remain local to the current document. See Section 6.8 [AUCTeX], page 22, for more information.
- **Funny display in selection buffer**
  When using packages which make the buffer representation of a file different from its disk representation (e.g. x-symbol, isotex, iso-cvt) you may find that **RefTEX**'s parsing information sometimes reflects the disk state of a file. This happens only in *unvisited* parts of a multifile document, because **RefTEX** visits these files literally for speed reasons. Then both short context and section headings may look different from what you usually see on your screen. In rare cases `reftex-toc` may have problems to jump to an affected section heading. There are three possible ways to deal with this:

- `(setq reftex-keep-temporary-buffers t)`
  This implies that **RefTEX** will load all parts of a multifile document into Emacs (i.e. there won't be any temporary buffers).
- `(setq reftex-initialize-temporary-buffers t)`
  This means full initialization of temporary buffers. It involves a penalty when the same unvisited file is used for lookup often.
- Set `reftex-initialize-temporary-buffers` to a list of hook functions doing a minimal initialization.

See also the variable `reftex-refontify-context`.

- **Labels as arguments to \begin**
  Some packages use an additional argument to a `\begin` macro to specify a label. E.g. Lamport's '`pf.sty`' uses both

```
\step{label}{claim}   and     \begin{step+}{label}
                                  claim
                               \end{step+}
```

We need to trick **RefTEX** into swallowing this:

```
;; Configuration for Lamport's pf.sty
(setq reftex-label-alist
    '(("\\step{*}{}"       ?p "st:" "~\\stepref{%s}" 2 ("Step" "St."))
      ("\\begin{step+}{*}" ?p "st:" "~\\stepref{%s}" 1000)))
```

The first line is just a normal configuration for a macro. For the `step+` environment we actually tell **RefTEX** to look for the *macro* '`\begin{step+}`' and interpret the *first* argument (which really is a second argument to the macro `\begin`) as a label of type `?p`. Argument count for this macro starts only after the '`{step+}`', also when specifying how to get context.

- **Idle timers in XEmacs**
  In XEmacs, idle timer restart does not work reliably after fast keystrokes. Therefore **RefTEX** currently uses the post command hook to start the timer used for automatic crossref information. When this bug gets fixed, a real idle timer can be requested with

```
(setq reftex-use-itimer-in-xemacs t)
```

- **Viper mode**
  With *Viper* mode prior to Vipers version 3.01, you need to protect **RefTEX**'s keymaps with

```
(viper-harness-minor-mode "reftex")
```

6.10 Imprint

RefTEX was written by *Carsten Dominik* `dominik@strw.leidenuniv.nl`, with contributions by *Stephen Eglen*. **RefTEX** is currently maintained by

Carsten Dominik `dominik@strw.leidenuniv.nl`

If you have questions about **RefTEX**, there are several Usenet groups which have competent readers: `comp.emacs`, `gnu.emacs.help`, `comp.emacs.xemacs`, `comp.text.tex`. You can also write directly to the maintainer.

If you find a bug in **RefTEX** or its documentation, or if you want to contribute code or ideas, please contact the maintainer (`mailto:dominik@strw.leidenuniv.nl`). Remember to provide all necessary information such as version numbers of Emacs and **RefTEX**, and the relevant part of your configuration in '`.emacs`'. When reporting a bug which throws an exception, please include a backtrace if you know how to produce one.

RefTEX is bundled and preinstalled with Emacs since version 20.2. It was also bundled and preinstalled with XEmacs 19.16–20.x. XEmacs 21.x users want to install the corresponding plugin package which is available from the XEmacs `ftp` site. See the XEmacs 21.x documentation on package installation for details.

Users of earlier Emacs distributions (including Emacs 19) can get a **RefTEX** distribution from the maintainers webpage (`http://www.strw.leidenuniv.nl/~dominik/Tools/`).

Thanks to the people on the Net who have used **RefTEX** and helped developing it with their reports. In particular thanks to *Fran Burstall, Alastair Burt, Soren Dayton, Stephen Eglen, Karl Eichwalder, Peter Galbraith, Kai Grossjohann, Dieter Kraft, Adrian Lanz, Rory Molinari, Laurent Mugnier, Sudeep Kumar Palat, Daniel Polani, Robin Socha, Richard Stanton, Allan Strand, Jan Vroonhof, Christoph Wedler, Alan Williams.*

The `view-crossref` feature was inspired by *Peter Galbraith's* '`bib-cite.el`'.

Finally thanks to *Uwe Bolick* who first got me (some years ago) into supporting LaTeX labels and references with an editor (which was MicroEmacs at the time).

7 Commands

Here is a summary of **RefTEX**'s commands. All commands are available from the `Ref` menu. For keybindings, see Section 6.2 [Keybindings], page 18.

reftex-toc Command

Show the table of contents for the current document. When called with one ore two *C-u* prefixes, rescan the document first.

reftex-label Command

Insert a unique label. With one or two *C-u* prefixes, enforce document rescan first.

reftex-reference Command

Start a selection process to select a label, and insert a reference to it. With one or two *C-u* prefixes, enforce document rescan first.

reftex-citation Command

Make a citation using BibTeX database files. After prompting for a regular expression, scans the buffers with BibTeX entries (taken from the `\bibliography` command or a `thebibliography` environment) and offers the matching entries for selection. The selected entry is formated according to `reftex-cite-format` and inserted into the buffer.

When called with one or two *C-u* prefixes, first rescans the document. When called with a numeric prefix, make that many citations. When called with point inside the braces of a `\cite` command, it will add another key, ignoring the value of `reftex-cite-format`.

The regular expression uses an expanded syntax: '`&&`' is interpreted as `and`. Thus, '`aaaa&&bbb`' matches entries which contain both '`aaaa`' and '`bbb`'. While entering the regexp, completion on knows citation keys is possible. '`=`' is a good regular expression to match all entries in all files.

reftex-view-crossref Command

View cross reference of macro at point. Point must be on the *key* argument. Works with the macros `\label`, `\ref`, `\cite`, `\bibitem`, `\index` and many derivatives of these. Where it makes sense, subsequent calls show additional locations. See also the variable `reftex-view-crossref-extra` and the command `reftex-view-crossref-from-bibtex`. With one or two *C-u* prefixes, enforce rescanning of the document. With argument 2, select the window showing the cross reference.

reftex-view-crossref-from-bibtex Command

View location in a LaTeX document which cites the BibTeX entry at point. Since BibTeX files can be used by many LaTeX documents, this function promps upon first use for a buffer in **RefTEX** mode. To reset this link to a document, call the function with with a prefix arg. Calling this function several times find successive citation locations.

reftex-create-tags-file Command

Create TAGS file by running `etags` on the current document. The TAGS file is also immediately visited with `visit-tags-table`.

reftex-grep-document Command

Run grep query through all files related to this document. With prefix arg, force to rescan document. No active TAGS table is required.

reftex-search-document Command

Regexp search through all files of the current document. Starts always in the master file. Stops when a match is found. No active TAGS table is required.

reftex-query-replace-document Command

Run a query-replace-regexp of *from* with *to* over the entire document. With prefix arg, replace only word-delimited matches. No active TAGS table is required.

reftex-change-label Command

Query replace *from* with *to* in all `\label` and `\ref` commands. Works on the entire multifile document. No active TAGS table is required.

reftex-renumber-simple-labels Command

Renumber all simple labels in the document to make them sequentially. Simple labels are the ones created by RefTeX, consisting only of the prefix and a number. After the command completes, all these labels will have sequential numbers throughout the document. Any references to the labels will be changed as well. For this, **RefTEX** looks at the arguments of any macros which either start or end with the string '`ref`'. This command should be used with care, in particular in multifile documents. You should not use it if another document refers to this one with the `xr` package.

reftex-find-duplicate-labels Command

Produce a list of all duplicate labels in the document.

reftex-customize Command

Run the customize browser on the **RefTEX** group.

reftex-show-commentary Command

Show the commentary section from '`reftex.el`'.

reftex-info Command

Run info on the top **RefTEX** node.

reftex-parse-document Command

Parse the entire document in order to update the parsing information.

reftex-reset-mode Command

Enforce rebuilding of several internal lists and variables. Also removes the parse file associated with the current document.

8 Options, Keymaps, Hooks

Here is a complete list of **RefTEX**'s configuration variables. All variables have customize support—so if you are not familiar with Emacs Lisp (and even if you are) you might find it more comfortable to use `customize` to look at and change these variables. *`M-x reftex-customize`* will get you there.

8.1 Table of Contents

reftex-toc-keep-other-windows User Option

Non-`nil` means, split the selected window to display the '`*toc*`' buffer. This helps to keep the window configuration, but makes the *toc* small. When `nil`, all other windows except the selected one will be deleted, so that the '`*toc*`' window fills half the frame.

reftex-toc-include-labels User Option

Non-`nil` means, include labels in '`*toc*`' buffer. This flag can be toggled from within the '`*toc*`' buffer with the *`l`* key.

reftex-toc-include-context User Option

Non-`nil` means, include context with labels in the '`*toc*`' buffer. Context will only be shown if the labels are visible as well. This flag can be toggled from within the '`*toc*`' buffer with the *`c`* key.

reftex-toc-include-file-boundaries User Option

Non-`nil` means, include file boundaries in '`*toc*`' buffer. This flag can be toggled from within the '`*toc*`' buffer with the *`i`* key.

reftex-toc-follow-mode User Option

Non-`nil` means, point in '`*toc*`' buffer (the table-of-contents buffer) will cause other window to follow. The other window will show the corresponding part of the document. This flag can be toggled from within the '`*toc*`' buffer with the *`f`* key.

reftex-toc-mode-hook Normal Hook

Normal hook which is run when a '`*toc*`' buffer is created.

reftex-toc-map Keymap

The keymap which is active in the '`*toc*`' buffer. (see Chapter 2 [Table of Contents], page 3).

8.2 Defining Label Environments

reftex-default-label-alist-entries User Option

Default label alist specifications. It is a list of symbols with associations in the constant `reftex-label-alist-builtin`. `LaTeX` should always be the last entry.

reftex-label-alist User Option

Set this variable to define additions and changes to the defaults in `reftex-default-label-alist-entries`. The only things you *must not* change is that `?s` is the type indicator for section labels, and ⟨SPC⟩ for the `any` label type. These are hard-coded at other places in the code.

The value of the variable must be a list of items. Each item is a list itself and has the following structure:

> (*env-or-macro* *type-key* *label-prefix* *reference-format*
> *context-method* (*magic-word* ...))

Each list entry describes either an environment carrying a counter for use with `\label` and `\ref`, or a LaTeX macro defining a label as (or inside) one of its arguments. The elements of each list entry are:

env-or-macro

Name of the environment (like '`table`') or macro (like '`\myfig`'). For macros, indicate the arguments, as in '`\myfig[]{}{}{*}{}`'. Use square brackets for optional arguments, a star to mark the label argument, if any. The macro does not have to have a label argument—you could also use '`\label{...}`' inside one of its arguments.

Special names: `section` for section labels, `any` to define a group which contains all labels.

This may also be `nil` if the entry is only meant to change some settings associated with the type indicator character (see below).

type-key

Type indicator character, like `?t`, must be a printable ASCII character. The type indicator is a single character which defines a label type. Any label inside the environment or macro is assumed to belong to this type. The same character may occur several times in this list, to cover cases in which different environments carry the same label type (like `equation` and `eqnarray`). If the type indicator is `nil` and the macro has a label argument '`{*}`', the macro defines neutral labels just like `\label`. In this case the reminder of this entry is ignored.

label-prefix

Label prefix string, like '`tab:`'. The prefix is a short string used as the start of a label. It may be the empty string. The prefix may contain the following '`%`' escapes:

```
%f Current file name, directory and extension stripped.
%F Current file name relative to master file directory.
%u User login name, on systems which support this.
```

Example: In a file '`intro.tex`', '`eq:%f:`' will become '`eq:intro:`'.

reference-format

Format string for reference insert in buffer. '`%s`' will be replaced by the label. When the format starts with '`~`', this '`~`' will only be inserted when the character before point is *not* a whitespace.

context-method

Indication on how to find the short context.

- If `nil`, use the text following the '`\label{...}`' macro.
- If `t`, use
  - the section heading for section labels.
  - text following the '`\begin{...}`' statement of environments (not a good choice for environments like eqnarray or enumerate, where one has several labels in a single environment).
  - text after the macro name (starting with the first arg) for macros.
- If an integer, use the nth argument of the macro. As a special case, 1000 means to get text after the last macro argument.
- If a string, use as regexp to search *backward* from the label. Context is then the text following the end of the match. E.g. putting this to '`\\caption[[{]`' will use the caption in a figure or table environment. '`\\begin{eqnarray}\|\\\\`' works for eqnarrays.
- If any of `caption`, `item`, `eqnarray-like`, `alignat-like`, this symbol will internally be translated into an appropriate regexp (see also the variable `reftex-default-context-regexps`).
- If a function, call this function with the name of the environment/macro as argument. On call, point will be just after the `\label` macro. The function is expected to return a suitable context string. It should throw an exception (error) when failing to find context. As an example, here is a function returning the 10 chars following the label macro as context:

```
(defun my-context-function (env-or-mac)
   (if (> (point-max) (+ 10 (point)))
       (buffer-substring (point) (+ 10 (point)))
     (error "Buffer too small")))
```

Label context is used in two ways by **RefTeX**: For display in the label menu, and to derive a label string. If you want to use a different method for each of these, specify them as a dotted pair. E.g. `(nil . t)` uses the text after the label (`nil`) for display, and text from the default position (`t`) to derive a label string. This is actually used for section labels.

magic-word-list

List of magic words which identify a reference to be of this type. If the word before point is equal to one of these words when calling `reftex-reference`, the label list offered will be automatically restricted to labels of the correct type. If the first element of this word–list is the symbol 'regexp', the strings are interpreted as regular expressions[1].

If the type indicator characters of two or more entries are the same, **RefTEX** will use

- the first non-`nil` format and prefix
- the magic words of all involved entries.

Any list entry may also be a symbol. If that has an association in `reftex-label-alist-builtin`, the `cddr` of that association is spliced into the list. However, builtin defaults should normally be set with the variable `reftex-default-label-alist-entries`.

reftex-section-levels User Option

Commands and levels used for defining sections in the document. The `car` of each cons cell is the name of the section macro. The `cdr` is a number indicating its level. A negative level means the same as the positive value, but the section will never get a number.

reftex-default-context-regexps User Option

Alist with default regular expressions for finding context. The emacs lisp form `(format regexp (regexp-quote environment))` is used to calculate the final regular expression—so '`%s`' will be replaced with the environment or macro.

8.3 Creating Labels

reftex-insert-label-flags User Option

Flags governing label insertion. The value has the form

(*derive prompt*)

If *derive*is `t`, **RefTEX** will try to derive a sensible label from context. A section label for example will be derived from the section heading. The conversion of the context to a legal label is governed by the specifications given in `reftex-derive-label-parameters`. If *derive* is `nil`, the default label will consist of the prefix and a unique number, like '`eq:23`'.

If *prompt* is `t`, the user will be prompted for a label string. When *prompt* is `nil`, the default label will be inserted without query.

So the combination of *derive* and *prompt* controls label insertion. Here is a table describing all four possibilities:

derive	*prompt*	*action*
`nil`	`nil`	Insert simple label, like '`eq:22`' or '`sec:13`'. No query.
`nil`	`t`	Prompt for label.
`t`	`nil`	Derive a label from context and insert. No query.
`t`	`t`	Derive a label from context, prompt for confirmation.

[1] Careful: **RefTEX** will add stuff to the beginning and end of these regular expressions.

Each flag may be set to `t`, `nil`, or a string of label type letters indicating the label types for which it should be true. Thus, the combination may be set differently for each label type. The default settings '`"s"`' and '`"sft"`' mean: Derive section labels from headings (with confirmation). Prompt for figure and table labels. Use simple labels without confirmation for everything else.

The available label types are: `s` (section), `f` (figure), `t` (table), `i` (item), `e` (equation), `n` (footnote), plus any definitions in `reftex-label-alist`.

reftex-format-label-function — Hook

If non-`nil`, should be a function which produces the string to insert as a label definition. The function will be called with two arguments, the *label* and the *default-format* (usually '`\label{%s}`'). It should return the string to insert into the buffer.

reftex-string-to-label-function — Hook

Function to turn an arbitrary string into a legal label. **RefTEX**'s default function uses the variable `reftex-derive-label-parameters`.

reftex-translate-to-ascii-function — Hook

Filter function which will process a context string before it is used to derive a label from it. The intended application is to convert ISO or Mule characters into something legal in labels. The default function `reftex-latin1-to-ascii` removes the accents from Latin-1 characters. X-Symbol (>=2.6) sets this variable to the much more general `x-symbol-translate-to-ascii`.

reftex-derive-label-parameters — User Option

Parameters for converting a string into a label. This variable is a list of the following items:

nwords Number of words to use.

maxchar Maximum number of characters in a label string.

illegal `nil`: Throw away any words containing characters illegal in labels.
`t`: Throw away only the illegal characters, not the whole word.

abbrev `nil`: Never abbreviate words.
`t`: Always abbreviate words (see `reftex-abbrev-parameters`).
`1`: Abbreviate words if necessary to shorten label string.

separator String separating different words in the label.

ignorewords
List of words which should not be part of labels.

downcase `t`: Downcase words before putting them into the label.

reftex-label-illegal-re — User Option

Regexp matching characters not legal in labels.

reftex-abbrev-parameters User Option

Parameters for abbreviation of words. A list of four parameters.

min-chars Minimum number of characters remaining after abbreviation.

min-kill Minimum number of characters to remove when abbreviating words.

before Character class before abbrev point in word.

after Character class after abbrev point in word.

8.4 Referencing Labels

reftex-label-menu-flags User Option

List of flags governing the label menu makeup. The flags are:

table-of-contents
Show the labels embedded in a table of context.

section-numbers
Include section numbers (like 4.1.3) in table of contents.

counters Show counters. This just numbers the labels in the menu.

no-context
Non-`nil` means do *not* show the short context.

follow Follow full context in other window.

show-commented
Show labels from regions which are commented out.

match-everywhere
Obsolete flag.

show-files Show begin and end of included files.

Each of these flags can be set to `t` or `nil`, or to a string of type letters indicating the label types for which it should be true. These strings work like character classes in regular expressions. Thus, setting one of the flags to '`"sf"`' makes the flag true for section and figure labels, `nil` for everything else. Setting it to '`"^sf"`' makes it the other way round.

The available label types are: `s` (section), `f` (figure), `t` (table), `i` (item), `e` (equation), `n` (footnote), plus any definitions in `reftex-label-alist`.

Most options can also be switched from the label menu itself—so if you decide here to not have a table of contents in the label menu, you can still get one interactively during selection from the label menu.

reftex-format-ref-function Hook

If non-`nil`, should be a function which produces the string to insert as a reference. Note that the insertion format can also be changed with `reftex-label-alist`. The function will be called with two arguments, the *label* and the *default-format* (usually '`~\ref{%s}`'). It should return the string to insert into the buffer.

reftex-vref-is-default User Option

Non-`nil` means, the varioref macro `\vref` is used as default. In the selection buffer, the *v* key toggles the reference macro between `\ref` and `\vref`. The value of this variable determines the default which is active when entering the selection process. Instead of `nil` or `t`, this may also be a string of type letters indicating the label types for which it should be true.

reftex-level-indent User Option

Number of spaces to be used for indentation per section level.

reftex-guess-label-type User Option

Non-`nil` means, `reftex-reference` will try to guess the label type. To do that, **RefTEX** will look at the word before the cursor and compare it with the magic words given in `reftex-label-alist`. When it finds a match, **RefTEX** will immediately offer the correct label menu—otherwise it will prompt you for a label type. If you set this variable to `nil`, **RefTEX** will always prompt for a label type.

reftex-display-copied-context-hook Normal Hook

Normal Hook which is run before context is displayed anywhere. Designed for `X-Symbol`, but may have other uses as well.

reftex-pre-refontification-functions Hook

`X-Symbol` specific hook. Probably not useful for other purposes. The functions get two arguments, the buffer from where the command started and a symbol indicating in what context the hook is called.

reftex-select-label-mode-hook Normal Hook

Normal hook which is run when a selection buffer enters `reftex-select-label-mode`.

reftex-select-label-map Keymap

The keymap which is active in the labels selection process (see Section 3.2 [Referencing Labels], page 6).

8.5 Creating Citations

reftex-bibfile-ignore-regexps User Option

List of regular expressions to exclude files in `\\bibliography{..}`. File names matched by any of these regexps will not be parsed. Intended for files which contain only `@string` macro definitions and the like, which are ignored by **RefTEX** anyway.

reftex-default-bibliography User Option

List of BibTeX database files which should be used if none are specified. When `reftex-citation` is called from a document which has neither a '`\bibliography{...}`' statement nor a `thebibliography` environment, **RefTEX** will scan these files instead. Intended for using `reftex-citation` in non-LaTeX files. The files will be searched along the BIBINPUTS or TEXBIB path.

reftex-sort-bibtex-matches User Option

Sorting of the entries found in BibTeX databases by reftex-citation. Possible values:

`nil`	Do not sort entries.
`author`	Sort entries by author name.
`year`	Sort entries by increasing year.
`reverse-year`	Sort entries by decreasing year.

reftex-cite-format User Option

The format of citations to be inserted into the buffer. It can be a string or an alist. In the simplest case this is just the string '`\cite{%l}`', which is also the default. See the definition of `reftex-cite-format-builtin` for more complex examples.

If `reftex-cite-format` is a string, it will be used as the format. In the format, the following percent escapes will be expanded.

`%l`	The BibTeX label of the citation.
`%a`	List of author names, see also `reftex-cite-punctuation`.
`%2a`	Like %a, but abbreviate more than 2 authors like Jones et al.
`%A`	First author name only.
`%e`	Works like '`%a`', but on list of editor names. ('`%2e`' and '`%E`' work a well).

It is also possible to access all other BibTeX database fields:

```
%b booktitle     %c chapter        %d edition     %h howpublished
%i institution   %j journal        %k key         %m month
%n number        %o organization   %p pages       %P first page
%r address       %s school         %u publisher   %t title
%v volume        %y year
%B booktitle, abbreviated          %T title, abbreviated
```

Usually, only '`%l`' is needed. The other stuff is mainly for the echo area display, and for `(setq reftex-comment-citations t)`.

'`%<`' as a special operator kills punctuation and space around it after the string has been formatted.

Beware that all this only works with BibTeX database files. When citations are made from the `\bibitems` in an explicit `thebibliography` environment, only '`%l`' is available.

If `reftex-cite-format` is an alist of characters and strings, the user will be prompted for a character to select one of the possible format strings.

In order to configure this variable, you can either set `reftex-cite-format` directly yourself or set it to the *symbol* of one of the predefined styles (see `reftex-cite-format-builtin`). E.g.: `(setq reftex-cite-format 'natbib)`.

reftex-format-cite-function Hook

If non-`nil`, should be a function which produces the string to insert as a citation. Note that the citation format can also be changed with the variable `reftex-cite-format`. The function will be called with two arguments, the *citation-key* and the *default-format* (taken from `reftex-cite-format`). It should return the string to insert into the buffer.

reftex-comment-citations User Option

Non-`nil` means add a comment for each citation describing the full entry. The comment is formatted according to `reftex-cite-comment-format`.

reftex-cite-comment-format User Option

Citation format used for commented citations. Must *not* contain '`%l`'. See the variable `reftex-cite-format` for possible percent escapes.

reftex-cite-punctuation User Option

Punctuation for formatting of name lists in citations. This is a list of 3 strings.

1. normal names separator, like '`, `' in Jones, Brown and Miller
2. final names separator, like '` and `' in Jones, Brown and Miller
3. The '`et al.`' string, like '` {\it et al.}`' in Jones {\it et al.}

reftex-select-bib-mode-hook Normal Hook

Normal hook which is run when a selection buffer enters `reftex-select-bib-mode`.

reftex-select-bib-map Keymap

The keymap which is active in the citation-key selection process (see Section 4.1 [Creating Citations], page 14).

8.6 Viewing Cross-References

reftex-view-crossref-macros User Option

Macros which can be used for the display of cross references. This is used when `reftex-view-crossref` is called with point in an argument of a macro. Each entry has the structure (*macro-re search-re highlight*). *macro-re* is matched against the macro. *search-re* is the regexp used to search for cross references. '`%s`' in this regexp is replaced with with the argument at point. *highlight* is an integer indicating which subgroup of the match should be highlighted. `\ref` and `\\cite` macros (and their variations) are hard-coded and need no mentioning in this variable.

reftex-auto-view-crossref User Option

Non-`nil` means, initially turn automatic viewing of crossref info on. Automatic viewing of crossref info normally uses the echo area. Whenever point is on the argument of a `\ref` or `\cite` macro, and no other message is being displayed, the echo area will display information about that cross reference. You can also set the variable to the symbol `window`. In this case a small temporary window is used for the display. This feature can be turned on and of from the menu (Ref->Options).

reftex-idle-time User Option

Time (secs) Emacs has to be idle before automatic crossref display is done.

reftex-cite-view-format User Option

Citation format used to display citation info in the message area. See the variable `reftex-cite-format` for possible percent escapes.

reftex-revisit-to-echo User Option

Non-`nil` means, automatic citation display will revisit files if necessary. When nil, citation display in echo area will only be active for cached echo strings (see `reftex-cache-cite-echo`), or for BibTeX database files which are already visited by a live associated buffers.

reftex-cache-cite-echo User Option

Non-`nil` means, the information displayed in the echo area for cite macros (see variable `reftex-auto-view-crossref`) is cached and saved along with the parsing information. The cache survives document scans. In order to clear it, use *`M-x reftex-reset-mode`*.

8.7 Finding Files

reftex-texpath-environment-variables User Option

List of specifications how to retrieve the search path for TeX files. Several entries are possible.

- If an element is the name of an environment variable, its content is used.
- If an element starts with an exclamation mark, it is used as a command to retrieve the path. A typical command with the kpathsearch library would be `"!kpsewhich -show-path=.tex"`.
- Otherwise the element itself is interpreted as a path.

Multiple directories can be separated by the system dependent `path-separator`. Directories ending in '`//`' or '`!!`' will be expanded recursively. See also `reftex-use-external-file-finders`.

reftex-bibpath-environment-variables User Option

List of specifications how to retrieve the search path for BibTeX files. Several entries are possible.

- If an element is the name of an environment variable, its content is used.
- If an element starts with an exclamation mark, it is used as a command to retrieve the path. A typical command with the kpathsearch library would be `"!kpsewhich -show-path=.bib"`.
- Otherwise the element itself is interpreted as a path.

Multiple directories can be separated by the system dependent `path-separator`. Directories ending in '`//`' or '`!!`' will be expanded recursively. See also `reftex-use-external-file-finders`.

reftex-file-extensions User Option

Association list with file extensions for different file types. This is a list of items, each item is like: `(`*type*` . (`*def-ext other-ext*` ...))`

type: File type like `"bib"` or `"tex"`.
def-ext: The default extension for that file type, like `".tex"` or `".bib"`.
other-ext: Any number of other legal extensions for this file type.

When a files is searched and it does not have any of the legal extensions, we try the default extension first, and then the naked file name.

reftex-search-unrecursed-path-first User Option

Non-`nil` means, search all specified directories before trying recursion. Thus, in a path '`.//:/tex/`', search first '`./`', then '`/tex/`', and then all subdirectories of '`./`'. If this option is `nil`, the subdirectories of '`./`' are searched before '`/tex/`'. This is mainly for speed—most of the time the recursive path is for the system files and not for the user files. Set this to `nil` if the default makes **RefTEX** finding files with equal names in wrong sequence.

reftex-use-external-file-finders User Option

Non-`nil` means, use external programs to find files. Normally, **RefTEX** searches the paths given in the environment variables `TEXINPUTS` and `BIBINPUTS` to find TeX files and BibTeX database files. With this option turned on, it calls an external program specified in the option `reftex-external-file-finders` instead. As a side effect, the variables `reftex-texpath-environment-variables` and `reftex-bibpath-environment-variables` will be ignored.

reftex-external-file-finders User Option

Association list with external programs to call for finding files. Each entry is a cons cell `(`*type* `.` *program*`)`. *type* is either `"tex"` or `"bib"`. *program* is a string containing the external program to use with any arguments. `%f` will be replaced by the name of the file to be found. Note that these commands will be executed directly, not via a shell. Only relevant when `reftex-use-external-file-finders` is non-`nil`.

8.8 Optimizations

reftex-keep-temporary-buffers User Option

Non-`nil` means, keep buffers created for parsing and lookup. **RefTEX** sometimes needs to visit files related to the current document. We distinguish files visited for

PARSING Parts of a multifile document loaded when (re)-parsing the document.

LOOKUP BibTeX database files and TeX files loaded to find a reference, to display label context, etc.

The created buffers can be kept for later use, or be thrown away immediately after use, depending on the value of this variable:

`nil` Throw away as much as possible.

`t` Keep everything.

`1` Throw away buffers created for parsing, but keep the ones created for lookup.

If a buffer is to be kept, the file is visited normally (which is potentially slow but will happen only once). If a buffer is to be thrown away, the initialization of the buffer depends upon the variable `reftex-initialize-temporary-buffers`.

reftex-initialize-temporary-buffers User Option

Non-`nil` means do initializations even when visiting file temporarily. When `nil`, **RefTEX** may turn off find-file hooks and other stuff to briefly visit a file. When `t`, the full default initializations are done (`find-file-hook` etc.). Instead of `t` or `nil`, this variable may also be a list of hook functions to do a minimal initialization.

reftex-no-include-regexps User Option

List of regular expressions to exclude certain input files from parsing. If the name of a file included via `\include` or `\input` is matched by any of the regular expressions in this list, that file is not parsed by **RefTEX**.

reftex-enable-partial-scans User Option

Non-`nil` means, re-parse only 1 file when asked to re-parse. Re-parsing is normally requested with a *`C-u`* prefix to many **RefTEX** commands, or with the *`r`* key in menus. When this option is `t` in a multifile document, we will only parse the current buffer, or the file associated with the label or section heading near point in a menu. Requesting re-parsing of an entire multifile document then requires a *`C-u C-u`* prefix or the capital *`R`* key in menus.

reftex-save-parse-info User Option

Non-`nil` means, save information gathered with parsing in a file. The file '`MASTER.rel`' in the same directory as '`MASTER.tex`' is used to save the information. When this variable is `t`,

- accessing the parsing information for the first time in an editing session will read that file (if available) instead of parsing the document.

- exiting Emacs or killing a buffer in reftex-mode will cause a new version of the file to be written.

reftex-allow-automatic-rescan User Option

Non-`nil` means, **RefTEX** may rescan the document when this seems necessary. Applies (currently) only in rare cases, when a new label cannot be placed with certainty into the internal label list.

reftex-use-multiple-selection-buffers User Option

Non-`nil` means use a separate selection buffer for each label type. These buffers are kept from one selection to the next and need not to be created for each use—so the menu generally comes up faster. The selection buffers will be erased (and therefore updated) automatically when new labels in its category are added. See the variable `reftex-auto-update-selection-buffers`.

reftex-auto-update-selection-buffers User Option

Non-`nil` means, selection buffers will be updated automatically. When a new label is defined with `reftex-label`, all selection buffers associated with that label category are emptied, in order to force an update upon next use. When `nil`, the buffers are left alone and have to be updated by hand, with the *g* key from the label selection process. The value of this variable will only have any effect when `reftex-use-multiple-selection-buffers` is non-`nil`.

8.9 Fontification

reftex-use-fonts User Option

Non-`nil` means, use fonts in label menu and on-the-fly help. Font-lock must be loaded as well to actually get fontified display. After changing this option, a rescan may be necessary to activate it.

reftex-refontify-context User Option

Non-`nil` means, re-fontify the context in the label menu with font-lock. This slightly slows down the creation of the label menu. It is only necessary when you definitely want the context fontified.

This option may have 3 different values:

`nil` Never refontify.

`t` Always refontify.

`1` Refontify when necessary, e.g. with old versions of the x-symbol package.

The option is ignored when `reftex-use-fonts` is `nil`.

reftex-highlight-selection User Option

Non-`nil` means, highlight selected text in selection and '`*toc*`' buffers. Normally, the text near the cursor is the *selected* text, and it is highlighted. This is the entry most keys in the selection and '`*toc*`' buffers act on. However, if you mainly use the mouse to select an item, you may find it nice to have mouse-triggered highlighting *instead* or *as well*. The variable may have one of these values:

`nil`	No highlighting.
`cursor`	Highlighting is cursor driven.
`mouse`	Highlighting is mouse driven.
`both`	Both cursor and mouse trigger highlighting.

Changing this variable requires to rebuild the selection and *toc* buffers to become effective (keys *`g`* or *`r`*).

reftex-cursor-selected-face User Option

Face name to highlight cursor selected item in toc and selection buffers. See also the variable `reftex-highlight-selection`.

reftex-mouse-selected-face User Option

Face name to highlight mouse selected item in toc and selection buffers. See also the variable `reftex-highlight-selection`.

reftex-file-boundary-face User Option

Face name for file boundaries in selection buffer.

reftex-label-face User Option

Face name for labels in selection buffer.

reftex-section-heading-face User Option

Face name for section headings in toc and selection buffers.

reftex-toc-header-face User Option

Face name for the header of a toc buffer.

reftex-bib-author-face User Option

Face name for author names in bib selection buffer.

reftex-bib-year-face User Option

Face name for year in bib selection buffer.

reftex-bib-title-face User Option

Face name for article title in bib selection buffer.

reftex-bib-extra-face User Option

Face name for bibliographic information in bib selection buffer.

8.10 Miscellaneous

reftex-extra-bindings User Option

Non-`nil` means, make additional key bindings on startup. These extra bindings are located in the users '`C-c letter`' map. See Section 6.2 [Keybindings], page 18.

reftex-plug-into-AUCTeX User Option

Plug-in flags for AUCTeX interface. This variable is a list of 4 boolean flags. When a flag is non-`nil`, **RefTEX** will

```
- supply labels in new sections and environments  (flag 1)
- supply arguments for macros like \label          (flag 2)
- supply arguments for macros like \ref            (flag 3)
- supply arguments for macros like \cite           (flag 4)
```

You may also set the variable itself to t or nil in order to turn all options on or off, respectively.

Supplying labels in new sections and environments applies when creating sections with *`C-c C-s`* and environments with *`C-c C-e`*.

Supplying macro arguments applies when you insert such a macro interactively with *`C-c`* ⟨RET⟩.

See the AUCTeX documentation for more information.

reftex-revisit-to-follow User Option

Non-`nil` means, follow-mode will revisit files if necessary. When nil, follow-mode will be suspended for stuff in unvisited files.

reftex-allow-detached-macro-args User Option

Non-`nil` means, allow arguments of macros to be detached by whitespace. When this is `t`, the '`aaa`' in '`\bbb [xxx] {aaa}`' will be considered an argument of `\bb`. Note that this will be the case even if `\bb` is defined with zero or one argument.

8.11 Keymaps and Hooks

RefTEX has the usual general keymap and load– and mode-hook.

reftex-mode-map Keymap

The keymap for **RefTEX** mode.

reftex-load-hook Normal Hook

Normal hook which is being run when loading '`reftex.el`'.

reftex-mode-hook Normal Hook

Normal hook which is being run when turning on **RefTEX** mode.

Furthermore, the 3 modes used for referencing labels, creating citations and for the table of contents buffer have their own keymaps and mode hooks. See the respective sections. There are many more hooks which are described in the relevant sections about options for a specific part of **RefTEX**.

9 Changes

Here is a list of recent changes to **RefTeX**.

Version 3.35

- ISO 8859 Latin-1 chars are converted to ASCII to derive better labels. This takes back the related changes in 3.34 for safety reasons.

Version 3.36

- New value `window` for option `reftex-auto-view-crossref`.

Version 3.38

- `reftex-view-crossref` no longer moves to find a macro. Point has to be on the macro argument.

Version 3.41

- New options `reftex-texpath-environment-variables`, `reftex-use-external-file-finders`, `reftex-external-file-finders`, `reftex-search-unrecursed-path-first`.
- *kpathsearch* support. See new options and `reftex-bibpath-environment-variables`.

Version 3.42

- File search further refined. New option `reftex-file-extensions`.
- '`*toc*`' buffer can show the file boundaries of a multifile document, all labels and associated context. New keys *`i`*, *`l`*, and *`c`*. New options `reftex-toc-include-labels`, `reftex-toc-include-context`, `reftex-toc-include-file-boundaries`.

Version 3.43

- Viewing cross-references generalized. Now works on `\label`, `\ref`, `\cite`, `\bibitem`, `\index`, variations of these, and from BibTeX buffers.
- New option `reftex-view-crossref-extra`.
- Support for the additional sectioning commands `\addchap` and `\addsec` which are dfined in the LaTeX KOMA-Script classes.
- Files in `reftex-default-bibliography` will be searched along `BIBINPUTS` path.
- Reading a parse file now checks consistency.

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