glossaries.sty v 1.16: LaTeX 2ε Package to Assist Generating Glossaries

Nicola L.C. Talbot

School of Computing Sciences
University of East Anglia
Norwich. Norfolk
NR4 7TJ. United Kingdom.
http://theoval.cmp.uea.ac.uk/~nlct/

27th August 2008

Contents

1 Introduction

The glossaries package is provided to assist generating glossaries. It has a certain amount of flexibility, allowing the user to customize the format of the glossary and define multiple glossaries. It also supports acronyms and glossary styles that include symbols (in addition to a name and description) for glossary entries. There is provision for loading a database of glossary terms where only those terms used in the text are added to the glossary. This package replaces the glossary package which is now obsolete.

This documentation is structured as follows: section 2 is for people who want a few quick pointers of how to get started, without having to read through lengthy descriptions, section 3 gives an overview of available commands and their syntax, section 4 describes the associated mfirstuc package, section 5 contains the documented source code for those who want to know more about how the package works and section 6 contains the documented code for the mfirstuc package.

1.1 Multi-Lingual Support

As from version 1.08, the glossaries package now has limited multi-lingual support, thanks to all the people who have sent me the relevant translations either via email or via `comp.text.tex`. However you must load babel *before* glossaries to enable this. Note that if babel is loaded and the translator package is detected on TEX's path, then the translator package will be loaded automatically, however, it may not pick up on the required languages, so if the predefined text is not translated, you may need to explicitly load the translator package with the required languages. For example:

```
\usepackage[spanish]{babel}
\usepackage[spanish]{translator}
\usepackage{glossaries}
```

If you want to use ngerman or german instead of babel, you will need to include the translator package to provide the translations. For example:

```
\documentclass[ngerman]{article}
\usepackage{ngerman}
\usepackage{translator}
\usepackage{glossaries}
```

The following languages are currently supported:

Language	**As from version**
Danish	1.08
Dutch	1.08
English	1.08
French	1.08
German	1.08
Irish	1.08
Italian	1.08
Hungarian	1.08
Polish	1.13
Spanish	1.08

Table 1: Customised Text

Command Name	**Translator key word**	**What it's for**
`\glossaryname`	`Glossary`	Title of the main glossary.
`\acronymname`	`Acronyms`	Title of the list of acronyms (when used with package option acronym).
`\entryname`	`Notation (glossaries)`	Header for first column in glossary (for 2, 3 or 4 column glossaries that support headers).
`\descriptionname`	`Description (glossaries)`	Header for second column in glossary (for 2, 3 or 4 column glossaries that support headers).
`\symbolname`	`Symbol (glossaries)`	Header for symbol column in glossary for glossary styles that support this option.
`\pagelistname`	`Page List (glossaries)`	Header for page list column in glossary for glossaries that support this option.
`\glssymbolsgroupname`	`Symbols (glossaries)`	Header for symbols section of the glossary for glossary styles that support this option.
`\glsnumbersgroupname`	`Numbers (glossaries)`	Header for numbers section of the glossary for glossary styles that support this option.

The language dependent commands and translator keys used by the glossaries package are listed in table 1.

Due to the varied nature of glossaries, it's likely that the predefined translations may not be appropriate. If you are using the babel package and do not have the translator package installed, you need to be familiar with the advice given in http://www.tex.ac.uk/cgi-bin/texfaq2html?label=latexwords.

If you have the translator package installed, then it becomes much easier to change the default translations. For example, if you are writing in Irish and you want `\symbolname` to produce "Siombail" instead of "Comhartha", then you can put the following in your document preamble:

```
\deftranslation[to=Irish]{Symbol (glossaries)}{Siombail}
```

1.2 Generating the Associated Glossary Files

The glossaries package comes with the Perl script `makeglossaries` which will run `makeindex` on all the glossary files using a customized `makeindex .ist` style file (which is created by `\makeglossaries`). The relevant extensions are obtained from the auxiliary file, so you should only pass the basename as the argument. For example, if your document is called `myfile.tex`, do:

```
latex myfile
makeglossaries myfile
latex myfile
```

You may need to explicitly load `makeglossaries` into Perl:

```
perl makeglossaries myfile
```

There is a batch file called `makeglossaries.bat` which does this for Windows users, but you must have Perl installed to be able to use it.

If you don't have Perl installed, you will have to run `makeindex` for each glossary type you have defined. For example, if you have used the acronym package option then you will have both a main glossary as well as a list of acronyms, so you will need to do (assuming your document is called `myfile.tex`):

```
makeindex -s myfile.ist -t myfile.glg -o myfile.gls myfile.glo
makeindex -s myfile.ist -t myfile.alg -o myfile.acr myfile.acn
```

This requires remembering all extensions for each of the glossaries defined in your document, so where possible you should use `makeglossaries` instead to reduce the possibility of error. Don't pass all the glossary files in a single call to `makeindex` or it will merge all your glossaries into a single glossary.

If any problems occur, remember to check the transcript files (e.g. `.glg` or `.alg`) for messages.

1.3 Troubleshooting

The glossaries package comes with a minimal file called `minimalgls.tex` which can be used for testing. This should be located in `texmf/doc/latex/glossaries/samples/`. Further information on debugging LaTeX code is available at http://theoval.cmp.uea.ac.uk/~nlct/latex/minexample/.

Below is a list of the most frequently asked questions. For other queries, consult the glossaries FAQ at http://theoval.cmp.uea.ac.uk/~nlct/latex/packages/faq/glossariesfaq.html.

1. I've used the smallcaps option, but the acronyms are displayed in normal sized upper case letters.

   The smallcaps package option uses `\textsc` to typeset the acronyms. This command converts lower case letters to small capitals, while upper case letters remain their usual size. Therefore you need to specify the acronym in lower case letters.

2. How do I change the font that the acronyms are displayed in?

   The easiest way to do this is to specify the smaller package option and redefine `\acronymfont` to use the required typesetting command. For example, suppose you would like the acronyms displayed in a sans-serif font, then you can do:

   ```
   \usepackage[smaller]{glossaries}
   \renewcommand*{\acronymfont}[1]{\textsf{#1}}
   ```

3. How do I change the font that the acronyms are displayed in on first use?

   The easiest way to do this is to specify the smaller package option and redefine `\firstacronymfont` to use the required command. Note that if you don't want the acronym on subsequent use to use `\smaller`, you will also need to redefine `\acronymfont`, as above. For example to make the acronym emphasized on first use, but use the surrounding font for subsequent use, you can do:

   ```
   \usepackage[smaller]{glossaries}
   \renewcommand*{\firstacronymfont}[1]{\emph{#1}}
   \renewcommand*{\acronymfont}[1]{#1}
   ```

4. I don't have Perl installed, do I have to use `makeglossaries`?

   Read subsection 1.2.

5. I'm used to using the glossary package: are there any instructions on migrating from the glossary package to the glossaries package?

   Read the file `glossary2glossaries.pdf` which should be available from the same location as this document.

6. I'm using babel but the fixed names haven't been translated.

   The glossaries package currently only supports the following languages: Danish, Dutch, English, French, German, Irish, Italian, Hungarian, Polish and Spanish. If you want to add another language, send me the translations, and I'll add them to the next version.

   If you are using one of the above languages, but the text hasn't been translated, try adding the translator package with the required languages explicitly (before you load the glossaries package). For example:

   ```
   \usepackage[ngerman]{babel}
   \usepackage[ngerman]{translator}
   \usepackage{glossaries}
   ```

Alternatively, you may be able to add the language as a global option to the class file. Check the translator package documentation for further details.

7. My glossaries haven't appeared.

   Remember to do the following:

   - Add `\makeglossaries` to the document preamble.
   - Use either `\printglossary` for each glossary that has been defined or `\printglossaries`.
   - Use `\gls`, `\Gls`, `\GLS`, `\glspl`, `\Glspl`, `\GLSpl`, `\glslink`, `\glsadd` or `\glsaddall` in the document.
   - Run LaTeX on your document, then run `makeglossaries`, then run LaTeX on your document again. If you want the glossaries to appear in the table of contents, you will need an extra LaTeX run.

2 A Quick Guide For The Impatient

This section is for people who want a few quick pointers of how to get started. However it is recommended that you read section 3 for additional commands and advice not listed here.

1. Load glossaries *after* hyperref:

   ```
   \usepackage{hyperref}
   \usepackage{glossaries}
   ```

   Similarly for the html package:

   ```
   \usepackage{html}
   \usepackage{glossaries}
   ```

2. Always use `\makeglossaries` if you want the glossary entries to be written to the glossary file:

   ```
   \documentclass{article}
   \usepackage{glossaries}
   \makeglossaries
   ```

   If you don't use `\makeglossaries`, your glossaries will not appear in the document!

3. Use `\printglossaries` to make your glossaries appear in the document at that point. For example:

   ```
   \maketitle
   \printglossaries
   \section{Introduction}
   ```

   Note that only the glossary entries that have been used in the document text will appear in the glossary.

4. When you have created your document, run LaTeX on it, then the Perl script `makeglossaries`, then run LaTeX on it again:

   ```
   latex myfile
   makeglossaries myfile
   latex myfile
   ```

   (You may need to run LaTeX again if you have used the toc package option.) If you use Windows, there is a batch file called `makeglossaries.bat` which you can use, but you will still need Perl installed.

5. New glossaries can be defined using:

   `\newglossary[`⟨*log-ext*⟩`] {`⟨*label*⟩`}{`⟨*in-ext*⟩`}{`⟨*out-ext*⟩`} {`⟨*title*⟩`}`

   where ⟨*label*⟩ is an identifying label, ⟨*in-ext*⟩ is the extension of the file to be created by `makeindex` (called by `makeglossaries`), ⟨*out-ext*⟩ is the extension of the file to be read by `makeindex` and ⟨*title*⟩ is the title for this new glossary. The first optional argument ⟨*log-ext*⟩ specifies the extension of the `makeindex` transcript file. Example:

   ```
   \newglossary[nlg]{notation}{not}{ntn}{Notation}
   ```

   This glossary's label is `notation` and its title will be Notation. If you use `makeglossaries`, the `makeindex` transcript will be written to a file with the extension `.nlg`. If ⟨*log-ext*⟩ is omitted, the extension `.glg` will be used.

6. Any new glossaries must be defined before `\makeglossaries`

   ```
   \documentclass{article}
   \usepackage{glossaries}
   \newglossary{notation}{not}{ntn}{Notation}
   \makeglossaries
   ```

7. If you use the acronym package option, the glossaries package will automatically create a new glossary type labelled `acronym`:

   ```
   \usepackage[acronym]{glossaries}
   ```

8. If your pages have a hyphen compositor (i.e. your page numbers appear in the form 2-1), redefine `\glscompositor` *before* `\makeglossaries`:

   ```
   \documentclass{article}
   \usepackage{glossaries}
   \renewcommand{\glscompositor}{-}
   \makeglossaries
   ```

9. To add the glossaries to the table of contents use the toc package option:

   ```
   \usepackage[toc]{glossaries}
   ```

10. Define a new entry with:

    \newglossaryentry{⟨*label*⟩}{⟨*key-val list*⟩}

    The ⟨*key-val list*⟩ must at least contain a name key and a description key. For example:

    ```
    \newglossaryentry{perl}{name=Perl,
    description=A scripting language}
    ```

    In this example, I have given the entry the label `perl`. Whenever I want to use this entry, that is the label I need to use to identify it.

11. If the entry name starts with an accented letter, you will need to group the first letter (otherwise it will cause a problem for `\Gls` and `\Glspl`):

    ```
    \newglossaryentry{elite}{name={\'e}lite},
    description={select group or class}}
    ```

    Likewise with commands such as `\ae` and `\oe`:

    ```
    \newglossaryentry{oesophagus}{%
    name={\oe}sophagus},
    description={canal from mouth to stomach}}
    ```

12. If you have multiple glossaries, use the type key to specify in which glossary the entry belongs. For example:

    ```
    \newglossary{languages}{lan}{lng}{Index of Languages}

    \makeglossaries

    \newglossaryentry{perl}{name=Perl,
    description=A scripting language,
    type=languages}
    ```

    If type is omitted, the default glossary is used.

13. Remember to group values that have a comma or equal sign. For example:

    ```
    \newglossaryentry{pagelist}{name=page list,
    description={A list of individual pages or page ranges
    (e.g.\ 1,2,4,7--9)}}
    ```

14. Plural forms are assumed to be the singular form with an "s" appended, unless otherwise specified. To specify an irregular plural, use the plural key. For example:

    ```
    \newglossaryentry{matrix}{name=matrix,
    description=rectangular array of quantities,
    plural=matrices}
    ```

15. The way the term appears in the main text can be different from the way the term appears in the glossary:

```
\newglossaryentry{matrix}{name=Matrix,
description=rectangular array of quantities,
text=matrix,
plural=matrices}
```

In this example, the entry name appears as "Matrix" in the glossary, and either "matrix" or "matrices" in the text.

16. The way the term appears on first use can be different to the way it appears subsequently:

```
\newglossaryentry{singmtx}{name=Singular Matrix,
description=A matrix with a zero determinant,
first=singular matrix (SM),
text=SM,
firstplural=singular matrices (SMs)}
```

In this example, the entry name appears as "Singular Matrix" in the glossary, and in the text it appears as "singular matrix (SM)" or "singular matrices (SMs)" the first time the entry is used, and subsequently appears as "SM" or "SMs".

17. The quick and easy way to define an acronym is to use:

`\newacronym[`⟨*key-val list*⟩`]{`⟨*label*⟩`}{`⟨*abbrev*⟩`} {`⟨*long*⟩`}`

For example:

```
\newacronym{svm}{SVM}{support vector machine}
```

This is equivalent to:

```
\newglossaryentry{svm}{type=\acronymtype,
name={SVM},
description={support vector machine},
text={SVM},
first={support vector machine (SVM)},
plural={SVMs},
firstplural={support vector machines (SVMs)}}
```

(The value of `\acronymtype` varies depending on whether the acronym package option is used or not. The optional argument ⟨*key-val list*⟩ can be used to override any of the `\newglossaryentry` keys; for example, if the acronym has an irregular plural.)

18. The font used to display the entry name in the glossary is governed by `\glsnamefont`. This can be redefined as required. For example, to make the entry names appear in a medium sans-serif font do:

```
\renewcommand{\glsnamefont}[1]{\textsf{\mdseries #1}}
```

Note that the list-like glossary styles defined in the glossary-list package place the entry name in the optional argument to `\item`, so they will appear in bold, unless you redefine `\glsnamefont` to counteract the bold font.

19. In the document use `\gls{`⟨*label*⟩`}` to use a predefined term (this will also enter the term into the associated glossary output file). For example:

```
A \gls{singmtx} is a matrix with a zero determinant.
```

20. Other variations:

    - `\Gls{`⟨*label*⟩`}` : like `\gls`, but with first letter in upper case
    - `\GLS{`⟨*label*⟩`}` : like `\gls`, but all upper case.
    - `\glspl{`⟨*label*⟩`}` : use plural
    - `\Glspl{`⟨*label*⟩`}` : use plural with first letter in upper case
    - `\GLSpl{`⟨*label*⟩`}` : use plural but all upper case
    - `\glslink{`⟨*label*⟩`}{`⟨*link text*⟩`}` : use ⟨*link text*⟩ to link to the given entry in the glossary.

    For example, the following will produce the plural form with the first letter in uppercase:

```
\Glspl{singmtx} are matrices with a zero determinant.
```

21. Additional text can be appended to the link using the end optional argument. For example, to form the possessive:

```
The \gls{singmtx}['s] dimensions \ldots
```

22. The format of the associated entry number can be changed using the format key in the optional argument. Note that the value of the format key should be the name of a command *without* the initial backslash. For example:

```
The primary definition of \glspl[format=textbf]{singmtx}.
```

    In this example the relevant glossary entry will have the page number in bold (since it uses `\textbf`) but it will no longer have a hyperlink (if hyperlinks are enabled).

23. The glossaries package provides commands to change the font whilst ensuring that the number remains a hyperlink. These are of the form `\hyper`⟨*xx*⟩ and are equivalent to the standard font changing commands of the form `\text`⟨*xx*⟩, as well as `\hyperemph` (which uses `\emph`). For example:

```
The primary definition of \glspl[format=hyperbf]{singmtx}.
```

24. Don't use declarations in format as this can cause unpredictable results, as there is no guarantee that the effect will be localised to the required text.

25. Entries can be added to the glossary without producing any text using `\glsadd{`⟨*label*⟩`}` or `\glsaddall`. These commands also take an optional argument where you can specify the format. For example

```
\glsadd[format=hyperbf]{singmtx}
```

will add a line to the glossary file for the specified term, but will not produce any text where the command occurs.

26. A number range can be entered using `format=(` and `format=)` to mark the beginning and ending of the range[1]. For example:

```
\glsadd[format=(]{singmtx}
This is a very long section all about \glspl{singmtx}.

% lots of text omitted

\glsadd[format=)]{singmtx}
```

This is equivalent to `makeindex`'s `|(` and `|)` formats.

27. You can combine the range markers with a formatting command (again without the preceding backslash). For example:

```
This is the start of a very long section all
about \glspl[format=(hyperbf]{singmtx}.

% lots of text omitted

This is the end a very long section all about
\glspl[format=)hyperbf]{singmtx}.
```

28. Only those terms that have actually been used in the document will be placed in the glossary. If you have defined a term that doesn't appear in the document, then it means you haven't used it in the text (either via `\glslink` or `\gls` and related commands, or via `\glsadd` or `\glsaddall`).

29. To change the sorting order, use the sort key. For example:

```
\newglossaryentry{tex}{name={\TeX},
description={A typesetting language},
sort=tex}
```

This will put the entry in the "T" group (entries starting with the letter "t" or "T") rather than the "symbols" group (entries starting with a symbol). Similarly, the following example puts the entry in the "U" group instead of the "symbol" group.

```
\newglossaryentry{universal}{name={\ensuremath{\mathcal{U}}},
description=The universal set,
sort=U}
```

[1] This is new to version 1.01

30. You don't need to escape `makeindex`'s special characters:

```
\newglossaryentry{quote}{name={"},
description={Double quote character}}

\newglossaryentry{exclam}{name={!},
description={Exclamation mark}}

\newacronym{rna}{RNA}{ribonukleins\"aure}
```

31. Associated symbols can also be specified, but whether the symbol appears in the glossary depends on the glossary style. For example:

```
\newglossaryentry{metre}{name={metre},
description={A metric measurement of length},
symbol={m}}
```

The predefined glossary styles that display the entry symbol are: long4col, long4colheader, long4colborder, long4colheaderborder, altlong4col, altlong4colheader, altlong4colborder, altlong4colheaderborder, super4col, super4colheader, super4colborder, super4colheaderborder. altsuper4col, altsuper4colheader, altsuper4colborder and altsuper4colheaderborder. All the other styles supplied by this package ignore the associated symbol.

32. Glossary styles can be set using the style package option. For example:

```
\usepackage[style=long3col]{glossaries}
```

or using `\glossarystyle{`⟨*style*⟩`}`. For example:

```
\glossarystyle{altlist}
```

The predefined glossary styles provided by the glossaries bundle are listed in subsection 3.11.

33. The list of numbers associated with each glossary entry can be suppressed using the package option nonumberlist:

```
\usepackage[nonumberlist]{glossaries}
```

34. By default, the glossaries will appear in an unnumbered chapter if chapters are defined, otherwise in an unnumbered section. This can be changed using the section package option. For example, to make the glossaries appear in an unnumbered section, even if chapters are defined, do:

```
\usepackage[section]{glossaries}
```

Other sectional units can also be specified as section=⟨*value*⟩. For example, to make the glossaries appear in unnumbered subsections:

```
\usepackage[section=subsection]{glossaries}
```

3 Overview

3.1 Package Options

The glossaries package options are as follows:

toc Add the glossaries to the table of contents.

numberline When used with toc, this will add `\numberline{}` in the final argument of `\addcontentsline`. This will align the table of contents entry with the numbered section titles. Note that this option has no effect if the toc option is omitted. If toc is used without numberline, the title will be aligned with the section numbers rather than the section titles.

acronym Make a separate glossary for acronyms.

section This is a ⟨*key*⟩=⟨*value*⟩ option. Its value should be the name of a sectional unit (e.g. chapter). This will make the glossaries appear in the named sectional unit, otherwise each glossary will appear in a chapter, if chapters exists, otherwise in a section. Unnumbered sectional units will be used by default. Example:

```
\usepackage[section=subsection]{glossaries}
```

You can omit the value if you want to use sections, i.e.

```
\usepackage[section]{glossaries}
```

is equivalent to

```
\usepackage[section=section]{glossaries}
```

You can change this value later in the document using `\setglossarysection{`⟨*type*⟩`}`.

numberedsection The glossaries are placed in unnumbered sectional units by default, but this can be changed using numberedsection. This option can take three possible values: false (no number, i.e. use starred form), nolabel (numbered, i.e. unstarred form, but not labelled) and autolabel (numbered with automatic labelling). If numberedsection=autolabel is used, each glossary is given a label that matches the glossary type, so the main (default) glossary is labelled `main`, the list of acronyms is labelled `acronym`[2] and additional glossaries are labelled using the value specified in the first mandatory argument to `\newglossary`. For example, if you load glossaries using:

```
\usepackage[section,numberedsection=autolabel]{glossaries}
```

then each glossary will appear in a numbered section, and can be referenced using something like:

```
The main glossary is in section~\ref{main} and the list of
acronyms is in section~\ref{acronym}.
```

[2] if the acronym option is used, otherwise the list of acronyms is the main glossary

If you can't decide whether to have the acronyms in the main glossary or a separate list of acronyms, you can use `\acronymtype` which is set to `main` if the acronym option is not used and is set to `acronym` if the acronym option is used. For example:

```
The list of acronyms is in section~\ref{\acronymtype}.
```

`\glsautoprefix` As from version 1.14, you can add a prefix to the label by redefining `\glsautoprefix`. For example:

```
\renewcommand*{\glsautoprefix}{glo:}
```

will add `glo:` to the automatically generated label, so you can then, for example, refer to the list of acronyms as follows:

```
The list of acronyms is in section~\ref{glo:\acronymtype}.
```

Or, if you are undecided on a prefix:

```
The list of acronyms is in section~\ref{\glsautoprefix\acronymtype}.
```

style This is a ⟨*key*⟩=⟨*value*⟩ option. Its value should be the name of the glossary style to use. Predefined glossary styles are listed in subsection 3.11.

nonumberlist This option will suppress the associated number lists in the glossaries (see also subsection 3.3).

counter This is a ⟨*key*⟩=⟨*value*⟩ option. The value should be the name of the default counter to use in the number lists.

sanitize This is a ⟨*key*⟩=⟨*value*⟩ option whose value is also a ⟨*key*⟩=⟨*value*⟩ list. By default, the glossaries package sanitizes the values of the name, description and symbol keys used when defining a new glossary entry. This may lead to unexpected results if you try to display these values within the document text. This sanitization can be switched off using the sanitize package option. (See subsection 5.2 and subsection 5.6 for further details.) For example, to switch off the sanitization for the description and name keys, but not for the symbol key, do:

```
\usepackage[sanitize={name=false,description=false,%
symbol=true}]{glossaries}
```

Note: this sanitization only applies to the name, description and symbol keys. It doesn't apply to any of the other keys (except the sort key which is always sanitized) so fragile commands contained in the value of the other keys must always be protected using `\protect`. Since the value of the text key is obtained from the name key, you will still need to protect fragile commands in the name key if you don't use the text key.

description This option changes the definition of `\newacronym` to allow a description. See subsection 3.9 for further details.

footnote This option changes the definition of `\newacronym` and the way that acronyms are displayed. See subsection 3.9 for further details.

smallcaps This option changes the definition of `\newacronym` and the way that acronyms are displayed. See subsection 3.9 for further details.

smaller This option changes the definition of `\newacronym` and the way that acronyms are displayed. See subsection 3.9 for further details.

dua This option changes the definition of `\newacronym` so that acronyms are always expanded. See subsection 3.9 for further details.

shortcuts This option provides shortcut commands for acronyms. See subsection 3.9 for further details.

3.2 Defining Glossary Entries

All glossary entries must be defined before they are used, so it is better to define them in the preamble to ensure this.[3] However only those entries that occur in the document (using any of the commands described in subsection 3.4 and subsection 3.5) will appear in the glossary. Each time an entry is used in this way, a line is added to an associated glossary (`.glo`) file, which then needs to be converted into a corresponding `.gls` file which contains the typeset glossary which is input by `\printglossary` or `\printglossaries`. The Perl script `makeglossaries` can be used to call `makeindex`, using a customised `.ist` style file, for each of the glossaries that are defined in the document. Note that there should be no need for you to explicitly edit or input any of these external files.

`\makeglossaries` The command `\makeglossaries` must be placed in the preamble in order to create the customised `makeindex .ist` style file and to ensure that glossary entries are written to the appropriate output file. If you omit `\makeglossaries` none of the glossaries will be created. Note that if your page numbers use a

`\glscompositor` hyphen compositor, you must set this by redefining `\glscompositor` *before* using `\makeglossaries`:

```
\renewcommand*{\glscompositor}{-}
```

(The default value of `\glscompositor` is a full stop.)

`\newglossaryentry` New glossary entries are defined using the command:

`\newglossaryentry{`⟨*label*⟩`}{`⟨*key-val list*⟩`}`

The first argument, ⟨*label*⟩, must be a unique label with which to identify this entry. The second argument, ⟨*key-val list*⟩, is a ⟨*key*⟩=⟨*value*⟩ list that supplies the relevant information about this entry. There are two required fields: name and description. Available fields are listed below:

name The name of the entry (as it will appear in the glossary).

description A brief description of this term (to appear in the glossary).

[3] The only preamble restriction on `\newglossaryentry` and `\newacronym` was removed in version 1.13, but the restriction remains for `\loadglsentries`.

descriptionplural The plural form of the description (as passed to `\glsdisplay` and `\glsdisplayfirst` by `\glspl`, `\Glspl` and `\GLSpl`). If omitted, the value is set to the same as the description key.

text How this entry will appear in the document text when using `\gls` (or one of its uppercase variants). If this field is omitted, the value of the name key is used.

first How the entry will appear in the document text the first time it is used with `\gls` (or one of its uppercase variants). If this field is omitted, the value of the text key is used.

plural How the entry will appear in the document text when using `\glspl` (or one of its uppercase variants). If this field is omitted, the value is obtained by appending `\glspluralsuffix` to the value of the text field.

firstplural How the entry will appear in the document text the first time it is used with `\glspl` (or one of its uppercase variants). If this field is omitted, the value is obtained from the plural key, if the first key is omitted, or by appending `\glspluralsuffix` to the value of the first field, if the first field is present.

Note: prior to version 1.13, the default value of firstplural was always taken by appending "s" to the first key, which meant that you had to specify both plural and firstplural, even if you hadn't used the first key.

symbol This field is provided to allow the user to specify an associated symbol, but most glossary styles ignore this value. If omitted, the value is set to `\relax`.

symbolplural This is the plural form of the symbol (as passed to `\glsdisplay` and `\glsdisplayfirst` by `\glspl`, `\Glspl` and `\GLSpl`). If omitted, the value is set to the same as the symbol key.

sort This value indicates how `makeindex` should sort this entry. If omitted, the value is given by the name field. This value is equivalent to `makeindex`'s "actual" character (which is usually the at-sign @ although the glossaries package uses a different symbol).

type This is the glossary type to which this entry belongs. If omitted, the default glossary is assumed. The list of acronyms type is given by `\acronymtype` which will either be `main` or `acronym`, depending on whether the acronym package option was used.

Note that if the key starts with an accented letter, you must group the accented letter, otherwise it will cause a problem for commands like `\Gls` and `\Glspl`. For example:

```
\newglossaryentry{elite}{name={{\'e}lite},
description={select group or class}}
```

3.2.1 Plurals

\glspluralsuffix

You may have noticed from above that you can specify the plural form when you define a term. If you omit this, the plural will be obtained by appending `\glspluralsuffix` to the singular form. This command defaults to `s`. For example:

```
\newglossaryentry{cow}{name=cow,description={a fully grown
female of any bovine animal}}
```

defines a new entry whose singular form is "cow" and plural form is "cows". However, if you are writing in archaic English, you may want to use "kine" as the plural form, in which case you would have to do:

```
\newglossaryentry{cow}{name=cow,plural=kine,
description={a fully grown female of any bovine animal}}
```

If you are writing in a language that supports multiple plurals (for a given term) then use the plural key for one of them (typically the one you are most likely to use) and for the others you will need to explicitly write the plural form using `\glslink` rather than using `\glspl`. Returning to the cow example above, suppose you will mostly be using "cows" as the plural, but occasionally you want to use "kine" as the plural, then define the term as

```
\newglossaryentry{cow}{name=cow,description={a fully grown
female of any bovine animal (plural cows, archaic plural kine)}}
```

and use `\glspl{cow}` to produce "cows" and use `\glslink{cow}{kine}` to produce "kine".

If you are using a language that usually forms plurals by appending a different letter, or sequence of letters, you can redefine `\glspluralsuffix` as required. However, this must be done *before* the entries are defined. For languages that don't form plurals by simply appending a suffix, all the plural forms must be specified using the plural key (and the firstplural key where necessary).

3.2.2 Loading Entries From a File

\loadglsentries

You can store all your glossary entry definitions in another file, and use:

`\loadglsentries[`⟨*type*⟩`]{`⟨*filename*⟩`}`

where ⟨*filename*⟩ is the name of the file containing all the `\newglossaryentry` commands. The optional argument ⟨*type*⟩ is the name of the glossary to which those entries should belong, for those entries where the type key has been omitted (or, more specifically, for those entries whose type has been specified by `\glsdefaulttype`, which is what `\newglossaryentry` uses by default). For example, suppose I have a file called `myentries.tex` which contains:

```
\newglossaryentry{perl}{type=main,
name={Perl},
description={A scripting language}}

\newglossaryentry{tex}{name={\TeX},
description={A typesetting language},sort={TeX}}
```

```
\newglossaryentry{html}{type=\glsdefaulttype,
name={html},
description={A mark up language}}
```

and suppose in my document preamble I use the command:

```
\loadglsentries[languages]{myentries}
```

then this will add the entries `tex` and `html` to the glossary whose type is given by `languages`, but the entry `perl` will be added to the main glossary, since it explicitly sets the type to `main`.

Note: if you use `\newacronym` (see subsection 3.9) the type is set as `type=\acronymtype` unless you explicitly override it. For example, if my file `myacronyms.tex` contains:

```
\newacronym{aca}{aca}{a contrived acronym}
```

then (supposing I have defined a new glossary type called `altacronym`)

```
\loadglsentries[altacronym]{myacronyms}
```

will add `aca` to the glossary type `acronym`, if the package option acronym has been specified, or will add `aca` to the glossary type `altacronym`, if the package option acronym is not specified. In this instance, it is better to change `myacronyms.tex` to:

```
\newacronym[type=\glsdefaulttype]{aca}{aca}{a contrived acronym}
```

and now

```
\loadglsentries[altacronym]{myacronyms}
```

will add `aca` to the glossary type `altacronym`, regardless of whether or not the package option acronym is used.

Note that only those entries that have been used in the text will appear in the relevant glossaries. Note also that `\loadglsentries` may only be used in the preamble.

3.3 Number lists

Each entry in the glossary has an associated *number list*. By default, these numbers refer to the pages on which that entry has been used (using any of the commands described in subsection 3.4 and subsection 3.5). The number list can be suppressed using the nonumberlist package option, or an alternative counter can be set as the default using the counter package option.

3.4 Links to Glossary Entries

Once you have defined a glossary entry using `\newglossaryentry`, you can refer to that entry in the document using one of the commands listed in this section. The text which appears at that point in the document when using one of these commands is referred to as the *link text* (even if there are no hyperlinks). The commands in this section also add a line to an external file that is used by `makeindex` to generate the relevant entry in the glossary. It is strongly recommended that

you don't use the commands defined in this section in the arguments of sectioning or caption commands. This is particularly important if you are using the glossaries package in conjunction with the hyperref package. Instead, use one of the commands listed in subsection 3.6 (such as `\glsentrytext`) or provide an alternative via the optional argument to the sectioning/caption command. Examples:

```
\section{An overview of \glsentrytext{perl}}
\section[An overview of Perl]{An overview of \gls{perl}}
```

`\glstextformat` The way the link text is displayed depends on `\glstextformat{`⟨*text*⟩`}`. For example, to make all link text appear in a sans-serif font, do:

```
\renewcommand*{\glstextformat}[1]{\textsf{#1}}
```

`\glslink` The command:

`\glslink[`⟨*options*⟩`]{`⟨*label*⟩`}{`⟨*text*⟩`}`

will place `\glstextformat{`⟨*text*⟩`}` in the document at that point and add a line into the associated glossary file for the glossary entry given by ⟨*label*⟩. If hyperlinks are supported, ⟨*text*⟩ will be a hyperlink to the relevant line in the glossary. The optional argument ⟨*options*⟩ must be a ⟨*key*⟩=⟨*value*⟩ list which can take any of the following keys:

format This specifies how to format the associated number for this entry in the glossary. This value is equivalent to the `makeindex` encap value, and (as with `\index`) the value needs to be the name of a command *without* the initial backslash. As with `\index`, the characters `(` and `)` can also be used to specify the beginning and ending of a number range. Again as with `\index`, the command should be the name of a command which takes an argument (which will be the associated number). Be careful not to use a declaration (such as `\bfseries`) instead of a text block command (such as `\textbf`) as the effect is not guaranteed to be localised. If you want to apply more than one style to a given entry (e.g. **bold** and *italic*) you will need to create a command that applies both formats, e.g.

```
\newcommand*{\textbfem}[1]{\textbf{\emph{#1}}}
```

and use that command.

If you are using hyperlinks and you want to change the font of the hyperlink, don't use `\hyperpage` (provided by the hyperref package) as the numbers may not refer to a page number. Instead, the glossaries package provides the following number formats:

hyperrm	The number is a serif hyperlink to the relevant part of the document
hypersf	The number is a sans-serif hyperlink to the relevant part of the document
hypertt	The number is a monospaced hyperlink to the relevant part of the document
hyperbf	The number is a bold hyperlink to the relevant part of the document
hypermd	The number is a medium weight hyperlink to the relevant part of the document
hyperit	The number is an italic hyperlink to the relevant part of the document
hypersl	The number is a slanted hyperlink to the relevant part of the document
hyperup	The number is an upright hyperlink to the relevant part of the document
hypersc	The number is a small caps hyperlink to the relevant part of the document
hyperemph	The number is an emphasized hyperlink to the relevant part of the document

Note that if the `\hyperlink` command hasn't been defined, the `hyper`⟨*xx*⟩ formats are equivalent to the analogous `\text`⟨*xx*⟩ font commands. If you want to make a new format, you will need to define a command which takes one argument and use that; for example, if you want the associated number in the glossary to be in a bold sans-serif font, you can define a command called, say, `\hyperbsf`:

```
\newcommand{\hyperbsf}[1]{\textbf{\hypersf{#1}}}
```

and then use `hyperbsf` as the value for the format key. (See also subsection 5.13.)

counter This specifies which counter to use for the associated number for this glossary entry. (See also subsection 3.3.)

hyper This is a boolean key which can be used to enable/disable the hyperlink to the relevant entry in the glossary. (Note that setting `hyper=true` will have no effect if `\hyperlink` has not been defined.) The default value is `hyper=true`.

`\glslink*` There is also a starred version:

`\glslink*[`⟨*options*⟩`]{`⟨*label*⟩`}{`⟨*text*⟩`}`

which is equivalent to `\glslink`, except it sets `hyper=false`.

`\gls` The command:

`\gls[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

is the same as `\glslink`, except that the link text is determined from the values of the text and first keys supplied when the entry was defined using

\newglossaryentry. If the entry has been marked as having been used, the value of the text key will be used, otherwise the value of the first key will be used. On completion, \gls will mark the entry given by ⟨*label*⟩ as used.

There are two uppercase variants:

\Gls `\Gls[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

and

\GLS `\GLS[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

which make the first letter of the link or all the link text uppercase, respectively.

The final optional argument ⟨*insert*⟩, allows you to insert some additional text into the link text. By default, this will append ⟨*insert*⟩ at the end of the link text, but this can be changed (see subsubsection 3.4.1).

The first optional argument ⟨*options*⟩ is the same as the optional argument to \glslink. As with \glslink, these commands also have a starred version that disable the hyperlink.

There are also analogous plural forms:

\glspl `\glspl[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

\Glspl `\Glspl[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

\GLSpl `\GLSpl[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

These determine the link text from the plural and firstplural keys supplied when the entry was first defined. As before, these commands also have a starred version that disable the hyperlink.

\glstext The command:

`\glstext[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

is similar to \gls except that it always uses the value of the text key and does not mark the entry as having been used. Unlike \gls, the inserted text ⟨*insert*⟩ is always appended to the link text.

There are also analogous commands:

\Glstext `\Glstext[`⟨*options*⟩`]{`⟨*text*⟩`}[`⟨*insert*⟩`]`

\GLStext `\GLStext[`⟨*options*⟩`]{`⟨*text*⟩`}[`⟨*insert*⟩`]`

As before, these commands also have a starred version that disable the hyperlink.

\glsfirst The command:

`\glsfirst[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

is similar to \glstext except that it always uses the value of the first key. Again, ⟨*insert*⟩ is always appended to the end of the link text and does not mark the entry as having been used.

There are also analogous commands:

\Glsfirst `\Glsfirst[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

\GLSfirst `\GLSfirst[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

As before, these commands also have a starred version that disable the hyperlink.

\glsplural The command:

`\glsplural[⟨options⟩]{⟨label⟩}[⟨insert⟩]`

is similar to `\glstext` except that it always uses the value of the plural key. Again, ⟨*insert*⟩ is always appended to the end of the link text and does not mark the entry as having been used.

There are also analogous commands:

\Glsplural `\Glsplural[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

\GLSplural `\GLSplural[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

As before, these commands also have a starred version that disable the hyperlink.

\glsfirstplural The command:

`\glsfirstplural[⟨options⟩]{⟨label⟩}[⟨insert⟩]`

is similar to `\glstext` except that it always uses the value of the firstplural key. Again, ⟨*insert*⟩ is always appended to the end of the link text and does not mark the entry as having been used.

There are also analogous commands:

\Glsfirstplural `\Glsfirstplural[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

\GLSfirstplural `\GLSfirstplural[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

As before, these commands also have a starred version that disable the hyperlink.

\glsname The command:

`\glsname[⟨options⟩]{⟨label⟩}[⟨insert⟩]`

is similar to `\glstext` except that it always uses the value of the name key. Again, ⟨*insert*⟩ is always appended to the end of the link text and does not mark the entry as having been used. Note: if you want to use this command and the name key contains commands, you will have to disable the sanitization of the name key and protect fragile commands.

There are also analogous commands:

\Glsname `\Glsname[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

\GLSname `\GLSname[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

As before, these commands also have a starred version that disable the hyperlink.

\glssymbol The command:

`\glssymbol[⟨options⟩]{⟨label⟩}[⟨insert⟩]`

is similar to \glstext except that it always uses the value of the symbol key. Again, ⟨*insert*⟩ is always appended to the end of the link text and does not mark the entry as having been used. Note: if you want to use this command and the symbol key contains commands, you will have to disable the sanitization of the symbol key and protect fragile commands.

There are also analogous commands:

\Glssymbol `\Glssymbol[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

\GLSsymbol `\GLSsymbol[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

As before, these commands also have a starred version that disable the hyperlink.

\glsdesc The command:

`\glsdesc[⟨options⟩]{⟨label⟩}[⟨insert⟩]`

is similar to \glstext except that it always uses the value of the description key. Again, ⟨*insert*⟩ is always appended to the end of the link text and does not mark the entry as having been used. Note: if you want to use this command and the description key contains commands, you will have to disable the sanitization of the description key and protect fragile commands.

There are also analogous commands:

\Glsdesc `\Glsdesc[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

\GLSdesc `\GLSdesc[⟨options⟩]{⟨text⟩}[⟨insert⟩]`

As before, these commands also have a starred version that disable the hyperlink.

3.4.1 Changing the format of the link text

\glsdisplayfirst
\glsdisplay

The format of the link text for \gls, \glspl and their uppercase variants is governed by two commands: \glsdisplayfirst, which is used the first time a glossary entry is used in the text and \glsdisplay, which is used subsequently. Both commands take four arguments: the first is either the singular or plural form given by the text, plural, first or firstplural keys (used when the term was defined) depending on context; the second argument is the term's description (as supplied by the description key); the third argument is the symbol associated with the term (as supplied by the symbol key) and the fourth argument is the additional text supplied in the final optional argument to \gls or \glspl (or their uppercase variants). The default definitions of \glsdisplay and \glsdisplayfirst simply print the first argument immediately followed by the fourth argument. The remaining arguments are ignored. Note that \glslink (which is used by commands like \gls and \glspl) sets \glslabel to the label for the given entry (i.e. the label supplied to the mandatory argument to \gls), so it is possible to use this label in the definition of \glsdisplay or \glsdisplayfirst to supply additional information using any of the commands described in subsection 3.6, if required.

\glslabel

For example, suppose you want a glossary of measurements and units, you can use the symbol key to store the unit:

```
\newglossaryentry{distance}{name=distance,
description={The length between two points},
```

```
symbol={km}}
```

and now suppose you want `\gls{distance}` to produce "distance (km)" on first use, then you can redefine `\glsdisplayfirst` as follows:

```
\renewcommand{\glsdisplayfirst}[4]{#1#4 (#3)}
```

Note that the additional text is placed after `#1`, so `\gls{distance}['s]` will produce "distance's (km)" rather than "distance (km)'s" which looks a bit odd (even though it may be in the context of "the distance (km) is measured between the two points" — but in this instance it may be better not to use a contraction).

Note also that all of the link text will be formatted according to `\glstextformat` (described earlier). So if you do, say:

```
\renewcommand{\glstextformat}[1]{\textbf{#1}}
\renewcommand{\glsdisplayfirst}[4]{#1#4 (#3)}
```

then `\gls{distance}` will produce "**distance (km)**".

If you have multiple glossaries, changing `\glsdisplayfirst` and `\glsdisplay` will change the way entries for all of the glossaries appear when using commands `\gls`, `\glspl` and their uppercase variants. If you only want the change to affect entries for a given glossary, then you need to use `\defglsdisplay` and `\defglsdisplayfirst` instead of redefining `\glsdisplay` and `\glsdisplayfirst`.

`\defglsdisplay`
`\defglsdisplayfirst`

Both `\defglsdisplay` and `\defglsdisplayfirst` take two arguments: the first (which is optional) is the glossary's label[4] and the second is how the term should be displayed when it is invoked using commands `\gls`, `\glspl` and their uppercase variants. This is similar to the way `\glsdisplayfirst` was redefined above.

For example, suppose you have created a new glossary called `notation` and you want to change the way the entry is displayed on first use so that it includes the symbol, you can do:

```
\defglsdisplayfirst[notation]{#1#4 (denoted #3)}
```

Now suppose you have defined an entry as follows:

```
\newglossaryentry{set}{type=notation,
name=set,
description={A collection of objects},
symbol={$S$}
}
```

The first time you reference this entry using `\gls` it will be displayed as: "set (denoted S)" (similarly for `\glspl` and the uppercase variants).

Remember that if you use the symbol key, you need to use a glossary style that displays the symbol, as many of the styles ignore it. In addition, if you want either the description or symbol to appear in the link text, you will have to disable the sanitization of these keys and protect fragile commands.

[4] `main` for the main (default) glossary, `\acronymtype` for the list of acronyms, or the name supplied in the first mandatory argument to `\newglossary` for additional glossaries.

3.4.2 Enabling and disabling hyperlinks to glossary entries

If you load the hyperref or html packages prior to loading the glossaries package, commands such as `\glslink` and `\gls`, described above, will automatically have hyperlinks to the relevant glossary entry, unless the hyper option has been set to `false`. You can disable or enable links using:

`\glsdisablehyper` `\glsdisablehyper`

and

`\glsenablehyper` `\glsenablehyper`

respectively. The effect can be localised by placing the commands within a group. Note that you should only use `\glsenablehyper` if the commands `\hyperlink` and `\hypertarget` have been defined (for example, by the hyperref package).

3.5 Adding an Entry to the Glossary Without Generating Text

`\glsadd` It is possible to add a line in the glossary file without generating any text at that point in the document using:

`\glsadd[`⟨*options*⟩`]{`⟨*label*⟩`}`

This is similar to `\glslink`, only it doesn't produce any text (so therefore, there is no hyper key available in ⟨*options*⟩ but all the other options that can be used with `\glslink` can be passed to `\glsadd`). For example, to add a page range to the glossary number list for the entry whose label is given by `set`:

```
\glsadd[format=(]{set}
Lots of text about sets spanning many pages.
\glsadd[format=)]{set}
```

`\glsaddall` To add all entries that have been defined, use:

`\glsaddall[`⟨*options*⟩`]`

The optional argument is the same as for `\glsadd`, except there is also a key types which can be used to specify which glossaries to use. This should be a comma separated list. For example, if you only want to add all the entries belonging to the list of acronyms (specified by the glossary type `\acronymtype`) and a list of notation (specified by the glossary type `notation`) then you can do:

```
\glsaddall[types={\acronymtype,notation}]
```

3.6 Using Glossary Terms Without Links

The commands described in this section display entry details without adding any information to the glossary. They don't use `\glstextformat`, they don't have any optional arguments, they don't affect the flag that determines if the term has been used and they don't produce hyperlinks.

`\glsentryname` `\glsentryname{`⟨*label*⟩`}`

\Glsentryname `\Glsentryname{`⟨*label*⟩`}`

These commands display the name of the glossary entry given by ⟨*label*⟩, as specified by the name key. `\Glsentryname` makes the first letter uppercase.

\glsentrytext `\glsentrytext{`⟨*label*⟩`}`
\Glsentrytext `\Glsentrytext{`⟨*label*⟩`}`

These commands display the subsequent use text for the glossary entry given by ⟨*label*⟩, as specified by the text key. `\Glsentrytext` makes the first letter uppercase.

\glsentryplural `\glsentryplural{`⟨*label*⟩`}`
\Glsentryplural `\Glsentryplural{`⟨*label*⟩`}`

These commands display the subsequent use plural text for the glossary entry given by ⟨*label*⟩, as specified by the plural key. `\Glsentryplural` makes the first letter uppercase.

\glsentryfirst `\glsentryfirst{`⟨*label*⟩`}`
\Glsentryfirst `\Glsentryfirst{`⟨*label*⟩`}`

These commands display the first use text for the glossary entry given by ⟨*label*⟩, as specified by the first key. `\Glsentryfirst` makes the first letter uppercase.

\glsentryfirstplural `\glsentryfirstplural{`⟨*label*⟩`}`
\Glsentryfirstplural `\Glsentryfirstplural{`⟨*label*⟩`}`

These commands display the plural form of the first use text for the glossary entry given by ⟨*label*⟩, as specified by the firstplural key. `\Glsentryfirstplural` makes the first letter uppercase.

\glsentrydesc `\glsentrydesc{`⟨*label*⟩`}`
\Glsentrydesc `\Glsentrydesc{`⟨*label*⟩`}`

These commands display the description for the glossary entry given by ⟨*label*⟩. `\Glsentrydesc` makes the first letter uppercase.

\glsentrydescplural `\glsentrydescplural{`⟨*label*⟩`}`
\Glsentrydescplural `\Glsentrydescplural{`⟨*label*⟩`}`

These commands display the plural description for the glossary entry given by ⟨*label*⟩. `\Glsentrydescplural` makes the first letter uppercase.

\glsentrysymbol `\glsentrysymbol{`⟨*label*⟩`}`
\Glsentrysymbol `\Glsentrysymbol{`⟨*label*⟩`}`

These commands display the symbol for the glossary entry given by ⟨*label*⟩. `\Glsentrysymbol` makes the first letter uppercase.

\glsentrysymbolplural `\glsentrysymbolplural{`⟨*label*⟩`}`
\Glsentrysymbolplural `\Glsentrysymbolplural{`⟨*label*⟩`}`

These commands display the plural symbol for the glossary entry given by ⟨*label*⟩. `\Glsentrysymbolplural` makes the first letter uppercase.

For further information see subsubsection 5.9.2.

3.7 Displaying a glossary

`\printglossaries` The command `\printglossaries` will display all the glossaries in the order in which they were defined. Note that no glossaries will appear until you have either used the Perl script `makeglossaries` or have directly used `makeindex` (as described in subsection 1.2). If the glossary still does not appear after you re-LaTeX your document, check the `makeindex` log files to see if there is a problem. Remember that you also need to use the command `\makeglossaries` in the preamble to enable the glossaries.

`\printglossary` An individual glossary can be displayed using:

`\printglossary[`⟨*options*⟩`]`

where ⟨*options*⟩ is a ⟨*key*⟩=⟨*value*⟩ list of options. The following keys are available:

type The value of this key specifies which glossary to print. If omitted, the default glossary is assumed. For example, to print the list of acronyms:

```
\printglossary[type=\acronymtype]
```

title This is the glossary's title (overriding the title specified when the glossary was defined).

toctitle This is the title to use for the table of contents (if the toc package option has been used). If omitted, the glossary title is used.

style This specifies which glossary style to use for this glossary, overriding the effect of the style package option or `\glossarystyle`.

numberedsection This specifies whether to use a numbered section for this glossary, overriding the effect of the numberedsection package option. This key has the same syntax as the numberedsection package option, described in subsection 3.1.

nonumberlist Unlike the package option of the same name, this key is a boolean key. If true (`nonumberlist=true`) the numberlist is suppressed for this glossary. If false (`nonumberlist=false`) the numberlist is displayed for this glossary. If no value is supplied, true is assumed.

`\glossarypreamble` Information can be added to the start of the glossary by redefining `\glossarypreamble`. For example:

```
\renewcommand{\glossarypreamble}{Numbers in italic indicate
primary definitions.}
```

This needs to be done before the glossary is displayed using `\printglossaries` or `\printglossary`. Note that if you want a different preamble for each glossary, you will need to use a separate `\printglossary` for each glossary and change the definition of `\glossarypreamble` between each glossary. For example:

```
\renewcommand{\glossarypreamble}{Numbers in italic indicate
primary definitions.}
\printglossary
\renewcommand{\glossarypreamble}{}
\printglossary[type=acronym]
```

Alternatively, you can do something like:

```
\renewcommand{\glossarypreamble}{Numbers in italic indicate
primary definitions.\gdef\glossarypreamble{}}
\printglossaries
```

which will print the preamble text for the first glossary and change the preamble to do nothing for subsequent glossaries. (Note that `\gdef` is required as the glossary is placed within a group.)

`\glossarypostamble` There is an analogous command called `\glossarypostamble` which is placed at the end of each glossary.

3.7.1 Changing the way the entry name appears in the glossary

`\glsnamefont` Within each glossary, each entry name is formatted according to `\glsnamefont` which takes one argument: the entry name. This command is always used regardless of the glossary style. By default, `\glsnamefont` simply displays its argument in whatever the surrounding font happens to be. This means that in the list styles the name will appear in bold, since the name is placed in the optional argument of `\item`, whereas in the tabular styles the name will appear in the normal font.

For example, suppose you want all the entry names to appear in medium weight small caps, then you can do:

```
\renewcommand{\glsnamefont}[1]{\textsc{\mdseries #1}}
```

3.8 Defining New Glossaries

`\newglossary` A new glossary can be defined using:

`\newglossary[`⟨*log-ext*⟩`]{`⟨*name*⟩`}{`⟨*in-ext*⟩`}{`⟨*out-ext*⟩`}{`⟨*title*⟩`}[`⟨*counter*⟩`]`

where ⟨*name*⟩ is the label to assign to this glossary. The arguments ⟨*in-ext*⟩ and ⟨*out-ext*⟩ specify the extensions to give to the input and output files for that glossary, ⟨*title*⟩ is the default title for this new glossary and the final optional argument ⟨*counter*⟩ specifies which counter to use for the associated number lists (see also subsection 3.3). The first optional argument specifies the extension for the `makeindex` transcript file (this information is only used by `makeglossaries` which picks up the information from the auxiliary file).

Note that the main (default) glossary is automatically created as:

```
\newglossary{main}{gls}{glo}{\glossaryname}
```

so it can be identified by the label `main`. Using the acronym package option is equivalent to:

```
\newglossary[alg]{acronym}{acr}{acn}{\acronymname}
```

so it can be identified by the label `acronym`. If you are not sure whether the acronym option has been used, you can identify the list of acronyms by the command `\acronymtype` which is set to `acronym`, if the acronym option has been used, otherwise it is set to `main`.

`\acronymtype`

3.9 Acronyms

\newacronym

As you may have noticed in subsection 3.2, when you specify a new entry, you can specify alternate text to use when the term is first used in the document. This provides a useful means to define acronyms. For convenience, the glossaries package defines the command:

\newacronym[⟨*key-val list*⟩]{⟨*label*⟩}{⟨*abbrv*⟩}{⟨*long*⟩}

By default, this is equivalent to:

\newglossaryentry{⟨*label*⟩}{type=\acronymtype,
name={⟨*abbrv*⟩},
description={⟨*long*⟩},
text={⟨*abbrv*⟩},
first={⟨*long*⟩ (⟨*abbrv*⟩)},
plural={⟨*abbrv*⟩\glspluralsuffix},
firstplural={⟨*long*⟩\glspluralsuffix\space (⟨*abbrv*⟩\glspluralsuffix)},
⟨*key-val list*⟩}

As mentioned in the previous section, the command \acronymtype is the name of the glossary in which the acronyms should appear. If the acronym package option has been used, this will be acronym, otherwise it will be main. The acronyms can then be used in exactly the same way as any other glossary entry.

Note: since \newacronym sets type=\acronymtype, if you want to load a file containing acronym definitions using \loadglsentries[⟨*type*⟩]{⟨*filename*⟩}, the optional argument ⟨*type*⟩ will not have an effect unless you explicitly set the type as type=\glsdefaulttype. See subsubsection 3.2.2.

For example, the following defines the acronym IDN:

```
\newacronym{idn}{IDN}{identification number}
```

This is equivalent to:

```
\newglossaryentry{idn}{type=\acronymtype,
name={IDN},
description={identification number},
text={IDN},
first={identification number (IDN)},
plural={IDNs},
firstplural={identification numbers (IDNs)}}
```

so \gls{idn} will produce "identification number (IDN)" on first use and "IDN" on subsequent uses.

This section describes acronyms that have been defined using \newacronym. If you prefer to define all your acronyms using \newglossaryentry explicitly, then you should skip this section and ignore the package options: smallcaps, smaller, description, dua, footnote and shortcuts, as these options change the definition of \newacronym for common acronym formats as well as the way that the link text is displayed (see subsubsection 3.4.1). Likewise you should ignore the new commands described in this section, such as \acrshort, as they vary according to the definition of \newacronym.

Table 2 lists the package options and how the `\newglossaryentry` keys are used to store ⟨*long*⟩ (the long form) and ⟨*abbrv*⟩ (the short form). Note that the smallcaps option redefines `\acronymfont` so that it sets its argument using `\textsc` (so you should use lower case characters in ⟨*abbrv*⟩) and the smaller option redefines `\acronymfont` to use `\smaller`,[5] otherwise `\acronymfont` simply displays its argument in the surrounding font. Note also that if none of the package options smallcaps, smaller, dua, description or footnote are used, `\acronymfont` is not used, so changing the definition of `\acronymfont` will have no effect under such circumstances.

`\acronymfont`

If you want to display the acronym in another font, for example, emphasized, then use the smaller package option and redefine `\acronymfont` to use the required font. For example:

```
\usepackage[smaller]{glossaries}
\renewcommand*{\acronymfont}[1]{\emph{#1}}
```

`\firstacronymfont`

Where `\acronymfont` is available, `\firstacronymfont` is also available. By default, this simply uses `\acronymfont`, but it can be redefined to change the way the acronym is displayed on first use.

Table 2: Package options governing `\newacronym` and how the information is stored in the keys for `\newglossaryentry`

Package Option	first key	text key	description key	symbol key
description,footnote	⟨*abbrv*⟩	⟨*abbrv*⟩	user supplied	⟨*long*⟩
description,dua	⟨*long*⟩	⟨*long*⟩	user supplied	⟨*abbrv*⟩
description	⟨*long*⟩	⟨*abbrv*⟩	user supplied	⟨*abbrv*⟩
footnote	⟨*abbrv*⟩	⟨*abbrv*⟩	⟨*long*⟩	
smallcaps	⟨*long*⟩	⟨*abbrv*⟩	⟨*long*⟩	⟨*abbrv*⟩
smaller	⟨*long*⟩	⟨*abbrv*⟩	⟨*long*⟩	⟨*abbrv*⟩
dua	⟨*long*⟩	⟨*long*⟩	⟨*long*⟩	⟨*abbrv*⟩
None of the above	⟨*long*⟩ (⟨*abbrv*⟩)	⟨*abbrv*⟩	⟨*long*⟩	

In case you can't remember which key stores the long or short forms (or their plurals) the glossaries package provides the commands:

`\glsshortkey`

- `\glsshortkey` The key used to store the short form.

`\glsshortpluralkey`

- `\glsshortpluralkey` The key used to store the plural version of the short form.

`\glslongkey`

- `\glslongkey` The key used to store the long form.

`\glslongpluralkey`

- `\glslongpluralkey` The key used to store the plural version of the long form.

These can be used in the optional argument of `\newacronym` to override the defaults. For example:

```
\newacronym[\glslongpluralkey={diagonal matrices}]{dm}{DM}{diagonal
matrix}
```

[5] you will need to load a package, such as relsize, that defines `\smaller` if you use this option.

If the first use uses the plural form, `\glspl{dm}` will display: diagonal matrices (DMs).

Each of the package options smallcaps, smaller, footnote, dua and description use `\defglsdisplay` and `\defglsdisplayfirst` (described in subsubsection 3.4.1) to change the way the link text is displayed. This means that these package options only work for the glossary type given by `\acronymtype`. If you have multiple lists of acronyms, you will need to make the appropriate changes for each additional glossary type.

description,footnote

When these two package options are used together, the first use displays the entry as:

`\firstacronymfont{`⟨*abbrv*⟩`}`⟨*insert*⟩`\footnote{`⟨*long*⟩`}`

while subsequent use displays the entry as:

`\acronymfont{`⟨*abbrv*⟩`}`⟨*insert*⟩

where ⟨*insert*⟩ indicates the text supplied in the final optional argument to `\gls`, `\glspl` or their uppercase variants.

Note also that when these two package options are used (in the given order), the glossaries package additionally implements the sanitize option using `sanitize={description=false,symbol=false}`, so remember to protect fragile commands when defining acronyms.

dua

The dua package option always displays the expanded form and so may not be used with footnote, smaller or smallcaps. Both first use and subsequent use displays the entry in the form:

⟨*long*⟩⟨*insert*⟩

If the description package option is also used, the name key is set to the long form, otherwise the name key is set to the short form and the description key is set to the long form.

description

This package option displays the entry on first use as:

⟨*long*⟩⟨*insert*⟩ (`\firstacronymfont{`⟨*abbrv*⟩`}`)

while subsequent use displays the entry as:

`\acronymfont{`⟨*abbrv*⟩`}`⟨*insert*⟩

Note also that if this package option is used, the glossaries package additionally implements the option `sanitize={symbol=false}`, so remember to protect fragile commands when defining acronyms.

footnote

This package option displays the entry on first use as:

`\firstacronymfont{`⟨*abbrv*⟩`}`⟨*insert*⟩`\footnote{`⟨*long*⟩`}`

while subsequent use displays the entry as:

`\acronymfont{`⟨*abbrv*⟩`}`⟨*insert*⟩

Note also that if this package option is used, the glossaries package additionally implements the option `sanitize={description=false}`, so remember to protect fragile commands when defining acronyms.

smallcaps

If neither the footnote nor description options have been set, this option displays the entry on first use as:

⟨*long*⟩⟨*insert*⟩ (`\firstacronymfont{`⟨*abbrv*⟩`}`)

while subsequent use displays the entry as:

`\acronymfont{`⟨*abbrv*⟩`}`⟨*insert*⟩

where `\acronymfont` is set to `\textsc{#1}`, so ⟨*abbrv*⟩ should be specified in lower case.

Note also that if this package option is used, the glossaries package additionally implements the option `sanitize={symbol=false}`, so remember to protect fragile commands when defining acronyms.

smaller

If neither the footnote nor description options have been set, this option displays the entry on first use as:

⟨*long*⟩⟨*insert*⟩ (`\firstacronymfont{`⟨*abbrv*⟩`}`)

while subsequent use displays the entry as:

`\acronymfont{`⟨*abbrv*⟩`}`⟨*insert*⟩

where `\acronymfont` is set to `{\smaller #1}`.

Remember to load a package that defines `\smaller` (such as relsize) if you want to use this option.

Note also that if this package option is used, the glossaries package additionally implements the option `sanitize={symbol=false}`, so remember to protect fragile commands when defining acronyms.

None of the above

If none of the package options smallcaps, smaller, footnote, dua or description are used, then on first use the entry is displayed as:

⟨*long*⟩ (⟨*abbrv*⟩)⟨*insert*⟩

while subsequent use displays the entry as:

⟨*abbrv*⟩⟨*insert*⟩

Recall from subsection 3.4 that you can access the values of individual keys using commands like `\glstext`, so it is possible to use these commands to print just the long form or just the abbreviation without affecting the flag that determines whether the entry has been used. However the keys that store the long and short form vary depending on the acronym style, so the glossaries package provides commands that are set according to the package options. These are as follows:

`\acrshort` `\acrshort[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`
`\Acrshort` `\ACRshort[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`
`\ACRshort` `\ACRshort[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

Print the abbreviated version with a hyperlink (if necessary) to the relevant entry in the glossary. This is usually equivalent to `\glstext` (or its uppercase variants) but may additionally put the link text within the argument to `\acronymfont`.

`\acrlong` `\acrlong[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`
`\Acrlong` `\ACRlong[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`
`\ACRlong` `\ACRlong[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

Print the long version with a hyperlink (if necessary) to the relevant entry in the glossary. This is may be equivalent to `\glsdesc`, `\glssymbol` or `\glsfirst` (or their uppercase variants), depending on package options.

`\acrfull` `\acrfull[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`
`\Acrfull` `\ACRfull[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`
`\ACRfull` `\ACRfull[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert*⟩`]`

Print the long version followed by the abbreviation in brackets with a hyperlink (if necessary) to the relevant entry in the glossary.

Note that if you change the definition of `\newacronym`, you may additionally need to change the above commands as well as the changing way the text is displayed using `\defglsdisplay` and `\defglsdisplayfirst`.

The package option shortcuts provides the synonyms listed in table 3. If any of those commands generate an "undefined control sequence" error message, check that you have enabled the shortcuts using the shortcuts package option. Note that there are no shortcuts for the commands that produce all upper case text.

3.10 Unsetting and Resetting Entry Flags

When using `\gls`, `\glspl` and their uppercase variants it is possible that you may want to use the value given by the first key, even though you have already used the glossary entry. Conversely, you may want to use the value given by the text key, even though you haven't used the glossary entry. The former can be achieved by one of the following commands:

`\glsreset` `\glsreset{`⟨*label*⟩`}`
`\glslocalreset` `\glslocalreset{`⟨*label*⟩`}`

while the latter can be achieved by one of the following commands:

Table 3: Synonyms provided by the package option shortcuts

Shortcut Command	Equivalent Command
\acs	\acrshort
\Acs	\Acrshort
\acsp	\acrshortpl
\Acsp	\Acrshortpl
\acl	\acrlong
\Acl	\Acrlong
\aclp	\acrlongpl
\Aclp	\Acrlongpl
\acf	\acrfull
\Acf	\Acrfull
\acfp	\acrfullpl
\Acfp	\Acrfullpl
\ac	\gls
\Ac	\Gls
\acp	\glspl
\Acp	\Glspl

\glsunset `\glsunset{`⟨*label*⟩`}`

\glslocalunset `\glslocalunset{`⟨*label*⟩`}`

You can determine whether an entry has been used using:

\ifglsused `\ifglsused{`⟨*label*⟩`}{`⟨*true part*⟩`}{`⟨*false part*⟩`}`

where ⟨*label*⟩ is the label of the required entry. If the entry has been used, ⟨*true part*⟩ will be done, otherwise ⟨*false part*⟩ will be done.

3.11 Glossary Styles

The glossaries package comes with some pre-defined glossary styles. These are as follows:

list The list style uses the description environment. The entry name is placed in the optional argument of the `\item` command (so it will appear in bold by default). The description follows, and then the associated number list for that entry. Sub groups are separated using `\indexspace`.

listgroup The listgroup style is like list but the glossary groups have headings.

listhypergroup The listhypergroup style is like listgroup but has a set of links to the glossary groups. The start of the glossary has a navigation panel to each group that is present in the glossary. This requires an additional run through LaTeX to ensure the group information is up-to-date. In the navigation panel, each group is separated by `\glshypernavsep` which defaults to a vertical bar with a space on either side. For example, to simply have a space separating each group, do:

\glshypernavsep

```
\renewcommand*{\glshypernavsep}{\space}
```

Note that the hyper-navigation panel is now (as from version 1.14) set inside the optional argument to `\item` instead of after it to prevent a spurious space at the start. This can be changed by redefining `\glossaryheader`, but note that this needs to be done *after* the glossary style has been set.

altlist The altlist style is like list but the description is placed on the following line.

altlistgroup The altlistgroup style is like altlist but the glossary groups have headings.

altlisthypergroup The altlisthypergroup style is like altlistgroup but has a set of links to the glossary groups. The navigation panel is the same as that for listhypergroup, described above.

listdotted This style uses the description environment. Each entry starts with `\item[]`, followed by the name followed by a dotted line, followed by the description. Note that this style ignores both the number list and the symbol. The length `\glslistdottedwidth` governs where the description should start.[6]

`\glslistdottedwidth`

long The long style uses the longtable environment (defined by the longtable package). It has two columns: the first column contains the entry's name and the second column contains the description followed by the number list. Sub groups are separated with a blank row. The width of the first column is governed by the widest entry in that column. The width of the second column is governed by the length `\glsdescwidth`.

longborder The longborder style is like long but has horizontal and vertical lines around it.

longheader The longheader style is like long but has a header row.

longheaderborder The longheaderborder style is like longheader but has horizontal and vertical lines around it.

long3col The long3col style is like long but has three columns. The first column contains the entry's name, the second column contains the description and the third column contains the number list. The width of the first column is governed by the widest entry in that column. The width of the second column is governed by the length `\glsdescwidth`. The width of the third column is governed by the length `\glspagelistwidth`.

long3colborder The long3colborder style is like the long3col style but has horizontal and vertical lines around it.

long3colheader The long3colheader style is like long3col but has a header row.

long3colheaderborder The long3colheaderborder style is like long3colheader but has horizontal and vertical lines around it.

[6] This style was supplied by Axel Menzel.

long4col The long4col style is like long3col but has an additional column in which the entry's associated symbol appears. This style is used for brief single line descriptions. The column widths are governed by the widest entry in the given column. Use altlong4col for long descriptions.

long4colborder The long4colborder style is like the long4col style but has horizontal and vertical lines around it.

long4colheader The long4colheader style is like long4col but has a header row.

long4colheaderborder The long4colheaderborder style is like long4colheader but has horizontal and vertical lines around it.

altlong4col The altlong4col style is like long4col but allows multi-line descriptions and page lists. The width of the description column is governed by the length `\glsdescwidth` and the width of the page list column is governed by the length `\glspagelistwidth`. The width of the name and symbol columns is governed by the widest entry in the given column.

altlong4colborder The altlong4colborder style is like the long4colborder but allows multi-line descriptions and page lists.

altlong4colheader The altlong4colheader style is like long4colheader but allows multi-line descriptions and page lists.

altlong4colheaderborder The altlong4colheaderborder style is like long4colheaderborder but allows multi-line descriptions and page lists.

super The super style uses the supertabular environment (defined by the supertabular package). It has two columns: the first column contains the entry's name and the second column contains the description followed by the number list. Sub groups are separated with a blank row. The width of the first column is governed by the widest entry in that column. The width of the second column is governed by the length `\glsdescwidth`.

superborder The superborder style is like super but has horizontal and vertical lines around it.

superheader The superheader style is like super but has a header row.

superheaderborder The superheaderborder style is like superheader but has horizontal and vertical lines around it.

super3col The super3col style is like super but has three columns. The first column contains the entry's name, the second column contains the description and the third column contains the . The width of the first column is governed by the widest entry in that column. The width of the second column is governed by the length `\glsdescwidth`. The width of the third column is governed by the length `\glspagelistwidth`.

super3colborder The super3colborder style is like the super3col style but has horizontal and vertical lines around it.

super3colheader The super3colheader style is like super3col but has a header row.

super3colheaderborder The super3colheaderborder style is like super3colheader but has horizontal and vertical lines around it.

super4col The super4col style is like super3col but has an additional column in which the entry's associated symbol appears. This style is designed for entries with brief single line descriptions. The column widths are governed by the widest entry in the given column. Use altsuper4col for longer descriptions.

super4colborder The super4colborder style is like the super4col style but has horizontal and vertical lines around it.

super4colheader The super4colheader style is like super4col but has a header row.

super4colheaderborder The super4colheaderborder style is like super4colheader but has horizontal and vertical lines around it.

altsuper4col The altsuper4col style is like super4col but allows multi-line descriptions and page lists. The width of the description column is governed by the length `\glsdescwidth` and the width of the page list column is governed by the length `\glspagelistwidth`. The width of the name and symbol columns is governed by the widest entry in the given column.

altsuper4colborder The altsuper4colborder style is like the super4colborder style but allows multi-line descriptions and page lists.

altsuper4colheader The altsuper4colheader style is like super4colheader but allows multi-line descriptions and page lists.

altsuper4colheaderborder The altsuper4colheaderborder style is like super4colheaderborder but allows multi-line descriptions and page lists.

The glossary style can be set using the style package option or using the style key in the optional argument to `\printglossary` or using the command:

`\glossarystyle` `\glossarystyle{`⟨*style-name*⟩`}`

`\glsdescwidth` `\glspagelistwidth`

The tabular-like styles that allow multi-line descriptions and page lists use the length `\glsdescwidth` to set the width of the description column and the length `\glspagelistwidth` to set the width of the page list column. These will need to be changed using `\setlength` if the glossary is too wide. Note that the long4col and super4col styles (and their header and border variations) don't use these lengths as they are designed for single line entries. Instead you should use the analogous altlong4col and altsuper4col styles.

Note that if you use the style key in the optional argument to `\printglossary`, it will override any previous style settings for the given glossary, so if, for example, you do:

```
\renewcommand*{\glsgroupskip}{}
\printglossary[style=long]
```

The new definition of `\glsgroupskip` will not have an affect for this glossary, as `\glsgroupskip` is redefined by `style=long`. Likewise, `\glossarystyle` will also override any previous style definitions, so, again:

```
\renewcommand*{\glsgroupskip}{}
\glossarystyle{long}
```

will reset `\glsgroupskip` back to its default definition for the named glossary style (long in this case). If you want to modify the styles, either use `\newglossarystyle` (described in the next section) or make the modifications after `\glossarystyle`.

`\glspostdescription`

All the styles except for the three- and four-column styles and the listdotted style use the command `\glspostdescription` after the description. This simply displays a full stop by default. To eliminate this full stop (or replace it with something else, say a comma) you will need to redefine `\glspostdescription` before the glossary is displayed.

3.12 Defining your own glossary style

`\newglossarystyle`

If the predefined styles don't fit your requirements, you can define your own style using:

`\newglossarystyle{`⟨*name*⟩`}{`⟨*definitions*⟩`}`

where ⟨*name*⟩ is the name of the new glossary style (to be used in `\glossarystyle`). The second argument ⟨*definitions*⟩, needs to redefine all of the following:

`theglossary` theglossary

This environment defines how the main body of the glossary should be typeset. Note that this does not include the section heading, the glossary preamble (defined by `\glossarypreamble`) or the glossary postamble (defined by `\glossarypostamble`). For example, the list style uses the description environment, so the theglossary environment is simply redefined to begin and end the description environment.

`\glossaryheader` `\glossaryheader`

This macro indicates what to do at the start of the main body of the glossary. Note that this is not the same as `\glossarypreamble`, which should not be affected by changes in the glossary style. The list glossary style redefines `\glossaryheader` to do nothing, whereas the longheader glossary style redefines `\glossaryheader` to do a header row.

`\glsgroupheading` `\glsgroupheading{`⟨*label*⟩`}`

This macro indicates what to do at the start of each logical block within the main body of the glossary. The glossary is sub-divided into twenty-eight logical blocks that are determined by the first character of the sort key (or name key if the sort key is omitted). The sub-divisions are in the following order: symbols, numbers, A, ..., Z. Note that the argument to `\glsgroupheading` is a label *not* the group title. The group title can be obtained via `\glsgetgrouptitle{`⟨*label*⟩`}`, and a navigation hypertarget can be created using `\glsnavhypertarget{`⟨*label*⟩`}`. Most of the predefined glossary styles redefine `\glsgroupheading` to simply ignore its argument. The listhypergroup style redefines `\glsgroupheading` as follows:

```
\renewcommand*{\glsgroupheading}[1]{%
\item[\glsnavhypertarget{##1}{\glsgetgrouptitle{##1}}]}
```

See also \glsgroupskip below. (Note that command definitions within \newglossarystyle must use ##1 etc instead of #1 etc.)

\glsgroupskip

\glsgroupskip

This macro determines what to do after one logical group but before the header for the next logical group. The list glossary style simply redefines \glsgroupskip to be \indexspace.

\glossaryentryfield

\glossaryentryfield{⟨*label*⟩}{⟨*formatted name*⟩}{⟨*description*⟩}{⟨*symbol*⟩}{⟨*number list*⟩}

This macro indicates what to do for a given glossary entry. Note that ⟨*formatted name*⟩ will always be in the form \glsnamefont{⟨*name*⟩}. This allows the user to set a given font for the entry name, regardless of the glossary style used. Note that ⟨*label*⟩ is the label used when the glossary entry was defined via either \newglossaryentry or \newacronym. Each time you use a glossary entry it creates a link[7] using \@glslink{⟨*label*⟩}{⟨*text*⟩} with the label glo:⟨*label*⟩. Your new glossary style must therefore redefine \glossaryentryfield so that it uses \@glstarget{glo:⟨*label*⟩}{⟨*text*⟩} to ensure the hyperlinks function correctly.[8] For example, the list style defines \glossaryentryfield as follows:

```
\renewcommand*{\glossaryentryfield}[5]{%
\item[\@glstarget{glo:##1}{##2}] ##3\glspostdescription\space ##5}
```

Note also that ⟨*number list*⟩ will always be of the form

\glossaryentrynumbers{\relax
\setentrycounter{⟨*counter name*⟩}\glsnumberformat{⟨*number(s)*⟩}}

where ⟨*number(s)*⟩ may contain \delimN (to delimit individual numbers) and/or \delimR (to indicate a range of numbers). There may be multiple occurrences of \setentrycounter{⟨*counter name*⟩}\glsnumberformat{⟨*number(s)*⟩}, but note that the entire number list is enclosed within the argument to \glossaryentrynumbers. The user can redefine this to change the way the entire number list is formatted, regardless of the glossary style. However the most common use of \glossaryentrynumbers is to provide a means of suppressing the number list altogether. (In fact, the nonumberlist option redefines \glossaryentrynumbers to ignore its argument.) Therefore, when you define a new glossary style, you don't need to worry about whether the user has specified the nonumberlist package option.

3.12.1 Example: creating a completely new style

If you want a completely new style, you will need to redefine all of the commands and environment listed above. You also need to take care when using internal commands (commands whose name contain the @ symbol). These should either be used in a .sty file or must be placed within \makeatletter and \makeatother.

[7] if the document doesn't have hyperlinks enabled \@glslink ignores the label and simply typesets the text.

[8] again, if the document doesn't support hyperlinks, \@glstarget will ignore the label, and just typeset the text.

For example, suppose you want each entry to start with a bullet point. This means that the glossary should be placed in the itemize environment, so theglossary should start and end that environment. Let's also suppose that you don't want anything between the glossary groups (so `\glsgroupheading` and `\glsgroupskip` should do nothing) and suppose you don't want anything to appear immediately after `\begin{theglossary}` (so `\glossaryheader` should do nothing). In addition, let's suppose the symbol should appear in brackets after the name, followed by the description and last of all the number list should appear within square brackets at the end. Then you can create this new glossary style, called, say, `mylist`, as follows:

```
\newglossarystyle{mylist}{%
% put the glossary in the itemize environment:
\renewenvironment{theglossary}{\begin{itemize}}{\end{itemize}}%
% have nothing after \begin{theglossary}:
\renewcommand*{\glossaryheader}{}%
% have nothing between glossary groups:
\renewcommand*{\glsgroupheading}[1]{}%
\renewcommand*{\glsgroupskip}{}%
% set how each entry should appear:
\renewcommand*{\glossaryentryfield}[5]{%
\item % bullet point
\@glstarget{glo:##1}{##2}% the entry name
\space (##4)% the symbol in brackets
\space ##3% the description
\space [##5]% the number list in square brackets
}%
}
```

3.12.2 Example: creating a new glossary style based on an existing style

If you want to define a new style that is a slightly modified version of an existing style, you can use `\glossarystyle` within the second argument of `\newglossarystyle` followed by whatever alterations you require. For example, suppose you want a style like the list style but you don't want the extra vertical space created by `\indexspace` between groups, then you can create a new glossary style called, say, `mylist` as follows:

```
\newglossarystyle{mylist}{%
\glossarystyle{list}% base this style on the list style
\renewcommand{\glsgroupskip}{}% make nothing happen between groups
}
```

4 Mfirstuc Package

The glossaries package is supplied with the package mfirstuc which provides the command:

`\makefirstuc` `\makefirstuc{`⟨*stuff*⟩`}`

which makes the first object of ⟨*stuff*⟩ uppercase unless ⟨*stuff*⟩ starts with a control

sequence followed by a non-empty group, in which case the first object in the group is converted to uppercase. Examples:

- `\makefirstuc{abc}` produces Abc
- `\makefirstuc{\emph{abc}}` produces *Abc* (`\MakeUppercase` has been applied to the letter "a" rather than `\emph`.)
- `\makefirstuc{{\'a}bc}` produces Ábc
- `\makefirstuc{\ae bc}` produces Æbc
- `\makefirstuc{{\ae}bc}` produces Æbc

In version 1.02 of mfirstuc, a bug fix resulted in a change in output if the first object is a control sequence followed by an empty group. Prior to version 1.02, `\makefirstuc{\ae{}bc}` produced æBc. However as from version 1.02, it now produces Æbc.

Note also that

```
\newcommand{\abc}{abc}
\makefirstuc{\abc}
```

produces: ABC. This is because the first object in the argument of `\makefirstuc` is `\abc`, so it does `\MakeUppercase{\abc}`. Whereas:

```
\newcommand{\abc}{abc}
\expandafter\makefirstuc\expandafter{\abc}
```

produces: Abc. There is a short cut command which will do this:

`\xmakefirstuc` `\xmakefirstuc{`⟨*stuff*⟩`}`

This is equivalent to `\expandafter\makefirstuc\expandafter{`⟨*stuff*⟩`}`. So

```
\newcommand{\abc}{abc}
\xmakefirstuc{\abc}
```

produces: Abc.

If you want to use an alternative command to convert to uppercase, for example `\MakeTextUppercase`[9], you can redefine the internal command `\@gls@makefirstuc`. For example:

```
\renewcommand{\@gls@makefirstuc}[1]{\MakeTextUppercase #1}
```

(Remember that command names that contain the @ character must either be placed in packages or be placed between `\makeatletter` `\makeatother`.)

[9] defined in the textcase package

5 Documented Code

5.1 Package Definition

This package requires LaTeX 2_ε.

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{glossaries}[2008/08/27 v1.16 (NLCT)]
```

Required packages:

```
\RequirePackage{ifthen}
\RequirePackage{xkeyval}[2006/11/18]
\RequirePackage{mfirstuc}
\RequirePackage{xfor}
```

If babel package is loaded, check to see if translator is installed.

```
\@ifpackageloaded{babel}{\IfFileExists{translator.sty}{%
  \RequirePackage{translator}}{}}{}
```

Need to use `\new@ifnextchar` instead of `\@ifnextchar` in commands that have a final optional argument (such as `\gls`) so require amsgen. Thanks to Morten Høgholm for suggesting this. (This has replaced using the xspace package.)

```
\RequirePackage{amsgen}
```

5.2 Package Options

The toc package option will add the glossaries to the table of contents. This is a boolean key, if the value is omitted it is taken to be true.

```
\define@boolkey{glossaries.sty}[gls]{toc}[true]{}
```

The numberline package option adds `\numberline` to `\addcontentsline`. Note that this option only has an effect if used in with toc=true.

```
\define@boolkey{glossaries.sty}[gls]{numberline}[true]{}
```

The sectional unit used to start the glossary is stored in `\@@glossarysec`. If chapters are defined, this is initialised to `chapter`, otherwise it is initialised to `section`.

`\@@glossarysec`

```
\@ifundefined{chapter}{\newcommand*{\@@glossarysec}{section}}{%
\newcommand*{\@@glossarysec}{chapter}}
```

The section key can be used to set the sectional unit. If no unit is specified, use `section` as the default. The starred form of the named sectional unit will be used. If you want some other way to start the glossary section (e.g. a numbered section) you will have to redefined `\glossarysection`.

```
\define@choicekey{glossaries.sty}{section}{part,chapter,section,%
subsection,subsubsection,paragraph,subparagraph}[section]{%
\renewcommand*{\@@glossarysec}{#1}}
```

Determine whether or not to use numbered sections.

`\@@glossarysecstar`

```
\newcommand*{\@@glossarysecstar}{*}
```

\@@glossaryseclabel

```
\newcommand*{\@@glossaryseclabel}{}
```

\glsautoprefix Prefix to add before label if automatically generated:

```
\newcommand*{\glsautoprefix}{}

\define@choicekey{glossaries.sty}{numberedsection}[\val\nr]{%
false,nolabel,autolabel}[nolabel]{%
\ifcase\nr\relax
  \renewcommand*{\@@glossarysecstar}{*}%
  \renewcommand*{\@@glossaryseclabel}{}%
\or
  \renewcommand*{\@@glossarysecstar}{}%
  \renewcommand*{\@@glossaryseclabel}{}%
\or
  \renewcommand*{\@@glossarysecstar}{}%
  \renewcommand*{\@@glossaryseclabel}{\label{\glsautoprefix\@glo@type}}%
\fi}
```

The default glossary style is stored in `\@glossary@default@style`. This is initialised to `list`. (The list style is defined in the accompanying glossary-list package described in subsection 5.16.)

\@glossary@default@style

```
\newcommand*{\@glossary@default@style}{list}
```

The default glossary style can be changed using the style package option. The value can be the name of any defined glossary style. The glossary style is set at the beginning of the document, so you can still use the style key to set a style that is defined in another package. This package comes with some predefined styles that are defined in subsection 5.16.

```
\define@key{glossaries.sty}{style}{%
\renewcommand*{\@glossary@default@style}{#1}}
```

Each entry within a given glossary will have an associated number list. By default, this refers to the page numbers on which that entry has been used, but it can also refer to any counter used in the document (such as the section or equation counters). The default number list format displays the number list "as is":

\glossaryentrynumbers

```
\newcommand*{\glossaryentrynumbers}[1]{#1}
```

Note that the entire number list for a given entry will be passed to `\glossaryentrynumbers` so any font changes will also be applied to the delimiters. The nonumberlist package option suppresses the number lists (this simply redefines `\glossaryentrynumbers` to ignores its argument).

```
\DeclareOptionX{nonumberlist}{%
\renewcommand*{\glossaryentrynumbers}[1]{}}
```

Keep track of the default glossary. This is initialised to the main glossary, but can be changed if for some reason you want to make a secondary glossary the main glossary. This affects any commands that can optionally take a glossary name as an argument (or as the value of the type key in a key-value list). This was mainly done so that `\loadglsentries` can temporarily change `\glsdefaulttype` while it loads a file containing new glossary entries (see subsection 5.8).

\glsdefaulttype

```
\newcommand{\glsdefaulttype}{main}
```

Keep track of which glossary the acronyms are in. This is initialised to `\glsdefaulttype`, but is changed by the acronym package option.

\acronymtype

```
\newcommand{\acronymtype}{\glsdefaulttype}
```

The acronym option sets an associated conditional which is used in subsection 5.14 to determine whether or not to define a separate glossary for acronyms.

```
\define@boolkey{glossaries.sty}[gls]{acronym}[true]{}
```

The default counter associated with the numbers in the glossary is stored in `\glscounter`. This is initialised to the page counter. This is used as the default counter when a new glossary is defined, unless a different counter is specified in the optional argument to `\newglossary` (see subsection 5.5).

\glscounter

```
\newcommand{\glscounter}{page}
```

The counter option changes the default counter. (This just redefines `\glscounter`.)

```
\define@key{glossaries.sty}{counter}{%
\renewcommand*{\glscounter}{#1}}
```

The glossary keys whose values are written to another file (i.e. sort, name, description and symbol) need to be sanitized, otherwise fragile commands would not be able to be used in `\newglossaryentry`. However, strange results will occur if you then use those fields in the document. As these fields are not normally used in the document, but are by default only used in the glossary, the default is to sanitize them. If however you want to use these values in the document (either by redefining commands like `\glsdisplay` or by using commands like `\glsentrydesc`) you will have to switch off the sanitization using the sanitize package option, but you will then have to use `\protect` to protect fragile commands when defining new glossary entries. The sanitize option takes a key-value list as its value, which can be used to switch individual values on and off. For example:

```
\usepackage[sanitize={description,name,symbol=false}]{glossaries}
```

will switch off the sanitization for the symbol key, but switch it on for the description and name keys. This would mean that you can use fragile commands in the description and name when defining a new glossary entry, but not for the symbol.

The default values are defined as:

\@gls@sanitizedesc

```
\newcommand*{\@gls@sanitizedesc}{\@onelevel@sanitize\@glo@desc}
```

\@gls@sanitizename

```
\newcommand*{\@gls@sanitizename}{\@onelevel@sanitize\@glo@name}
```

\@gls@sanitizesymbol

```
\newcommand*{\@gls@sanitizesymbol}{\@onelevel@sanitize\@glo@symbol}
```

(There is no equivalent for the sort key, since that is only provided for the benefit of makeindex, and so will always be sanitized.)

Before defining the sanitize package option, The key-value list for the sanitize value needs to be defined. These are all boolean keys. If they are not given a value, assume true.

Firstly the description. If set, it will redefine \@gls@sanitizedesc to use \@onelevel@sanitize, otherwise \@gls@sanitizedesc will do nothing.

```
\define@boolkey[gls]{sanitize}{description}[true]{%
\ifgls@sanitize@description
  \renewcommand*{\@gls@sanitizedesc}{\@onelevel@sanitize\@glo@desc}%
\else
  \renewcommand*{\@gls@sanitizedesc}{}%
\fi
}
```

Similarly for the name key:

```
\define@boolkey[gls]{sanitize}{name}[true]{%
\ifgls@sanitize@name
  \renewcommand*{\@gls@sanitizename}{\@onelevel@sanitize\@glo@name}%
\else
  \renewcommand*{\@gls@sanitizename}{}%
\fi}
```

and for the symbol key:

```
\define@boolkey[gls]{sanitize}{symbol}[true]{%
\ifgls@sanitize@symbol
  \renewcommand*{\@gls@sanitizesymbol}{%
\@onelevel@sanitize\@glo@symbol}%
\else
  \renewcommand*{\@gls@sanitizesymbol}{}%
\fi}
```

Now define the sanitize option. It can either take a key-val list as its value, or it can take the keyword none, which is equivalent to description=false, symbol=false, name=false:

```
\define@key{glossaries.sty}{sanitize}[description=true,symbol=true,
name=true]{%
\ifthenelse{\equal{#1}{none}}{%
\renewcommand*{\@gls@sanitizedesc}{}%
\renewcommand*{\@gls@sanitizename}{}%
\renewcommand*{\@gls@sanitizesymbol}{}%
}{\setkeys[gls]{sanitize}{#1}}%
}
```

Define translate option. If false don't set up multi-lingual support.

```
\define@boolkey{glossaries.sty}[gls]{translate}[true]{}
```

Set the default value:

```
\glstranslatefalse
\@ifpackageloaded{translator}{\glstranslatetrue}{%
\@ifpackageloaded{babel}{\glstranslatetrue}{}}
```

Set the long form of the acronym in footnote on first use.

```
\define@boolkey{glossaries.sty}[glsacr]{footnote}[true]{%
\ifthenelse{\boolean{glsacrdescription}}{}%
```

```
{\renewcommand*{\@gls@sanitizedesc}{}}%
}
```

Allow acronyms to have a description (needs to be set using the description key in the optional argument of `\newacronym`).

```
\define@boolkey{glossaries.sty}[glsacr]{description}[true]{%
  \renewcommand*{\@gls@sanitizesymbol}{}%
}
```

Define `\newacronym` to set the short form in small capitals.

```
\define@boolkey{glossaries.sty}[glsacr]{smallcaps}[true]{%
  \renewcommand*{\@gls@sanitizesymbol}{}%
}
```

Define `\newacronym` to set the short form using `\smaller` which obviously needs to be defined by loading the appropriate package.

```
\define@boolkey{glossaries.sty}[glsacr]{smaller}[true]{%
  \renewcommand*{\@gls@sanitizesymbol}{}%
}
```

Define `\newacronym` to always use the long forms (i.e. don't use acronyms)

```
\define@boolkey{glossaries.sty}[glsacr]{dua}[true]{%
  \renewcommand*{\@gls@sanitizesymbol}{}%
}
```

Define acronym shortcuts.

```
\define@boolkey{glossaries.sty}[glsacr]{shortcuts}[true]{}
```

Process package options:

```
\ProcessOptionsX
```

If chapters are defined and the user has requested the section counter as a package option, `\@chapter` will be modified so that it adds a `section.`⟨*n*⟩`.0` target, otherwise entries placed before the first section of a chapter will have undefined links.

The same problem will also occur if a lower sectional unit is used, but this is less likely to happen. If it does, or if you change `\glscounter` to `section` later, you will have to specify a different counter for the entries that give rise to a `name{`⟨*section-level*⟩`.`⟨*n*⟩`.0}` non-existent warning (e.g. `\gls[counter=chapter]{label}`).

```
\ifthenelse{\equal{\glscounter}{section}}{%
\@ifundefined{chapter}{}{%
\let\@gls@old@chapter\@chapter
\def\@chapter[#1]#2{\@gls@old@chapter[{#1}]{#2}%
\@ifundefined{hyperdef}{}{\hyperdef{section}{\thesection}{}}}}}{}
```

5.3 Default values

This section sets up default values that are used by this package. Some of the names may already be defined (e.g. by babel) so `\providecommand` is used.

Main glossary title:

`\glossaryname`

```
\providecommand*{\glossaryname}{Glossary}
```

The title for the acronym glossary type (which is defined if acronym package option is used) is given by \acronymname. If the acronym package option is not used, \acronymname won't be used.

\acronymname

```
\providecommand*{\acronymname}{Acronyms}
```

\glssettoctitle Sets the TOC title for the given glossary.

```
\newcommand*{\glssettoctitle}[1]{%
\def\glossarytoctitle{\csname @glotype@#1@title\endcsname}}
```

The following commands provide text for the headers used by some of the tabular-like glossary styles. Whether or not they get used in the glossary depends on the glossary style.

\entryname

```
\providecommand*{\entryname}{Notation}
```

\descriptionname

```
\providecommand*{\descriptionname}{Description}
```

\symbolname

```
\providecommand*{\symbolname}{Symbol}
```

\pagelistname

```
\providecommand*{\pagelistname}{Page List}
```

Labels for makeindex's symbol and number groups:

\glssymbolsgroupname

```
\providecommand*{\glssymbolsgroupname}{Symbols}
```

\glsnumbersgroupname

```
\providecommand*{\glsnumbersgroupname}{Numbers}
```

\glspluralsuffix The default plural is formed by appending \glspluralsuffix to the singular form.

```
\newcommand*{\glspluralsuffix}{s}
```

Add multi-lingual support. Thanks to everyone who contributed to the translations from both comp.text.tex and via email.

```
\ifglstranslate
```

If translator is not install, used standard babel captions, otherwise load translator dictionary.

```
  \@ifpackageloaded{translator}{\usedictionary{glossaries-dictionary}%
    \renewcommand*{\glssettoctitle}[1]{%
    \ifthenelse{\equal{#1}{main}}{%
      \translatelet{\glossarytoctitle}{Glossary}}{%
      \ifthenelse{\equal{#1}{acronym}}{%
        \translatelet{\glossarytoctitle}{Acronyms}}{%
        \def\glossarytoctitle{\csname @glotype@#1@title\endcsname}}}%
    \renewcommand*{\glossaryname}{\translate{Glossary}}%
```

```
    \renewcommand*{\acronymname}{\translate{Acronyms}}%
    \renewcommand*{\entryname}{\translate{Notation (glossaries)}}%
    \renewcommand*{\descriptionname}{%
      \translate{Description (glossaries)}}%
    \renewcommand*{\symbolname}{\translate{Symbol (glossaries)}}%
    \renewcommand*{\pagelistname}{%
      \translate{Page List (glossaries)}}%
    \renewcommand*{\glssymbolsgroupname}{%
      \translate{Symbols (glossaries)}}%
    \renewcommand*{\glsnumbersgroupname}{%
      \translate{Numbers (glossaries)}}%
  }{%
    \@ifpackageloaded{babel}{\RequirePackage{glossaries-babel}}{}}
\fi
```

The description terminator is given by `\glspostdescription` (except for the 3 and 4 column styles). This is a full stop by default:

`\glspostdescription`

```
\newcommand*{\glspostdescription}{.}
```

The name of the `makeindex` style file is given by `\istfilename`. This file is created by `\writeist` (which is used by `\makeglossaries`) so redefining this command will only have an effect if it is done *before* the `.ist` file is created.

`\istfilename`

```
\providecommand*{\istfilename}{\jobname.ist}
```

The `makeglossaries` Perl script picks up this name from the auxiliary file and passes it to `makeindex` using the `-s` option. Since its not required by LaTeX, `\@istfilename` ignores its argument.

`\@istfilename`

```
\newcommand*{\@istfilename}[1]{}
```

This command is the value of the `page_compositor` `makeindex` key. Again, any redefinition of this command must take place *before* `\writeist` otherwise it will have no effect.

`\glscompositor`

```
\newcommand{\glscompositor}{.}
```

(The page compositor is usually defined as a dash when using `makeindex`, but most of the standard counters used by LaTeX use a full stop as the compositor, which is why I have used it as the default.)

The command `\glsnumberformat` indicates the default format for the page numbers in the glossary. (Note that this is not the same as `\glossaryentrynumbers`, but applies to individual numbers or groups of numbers within an entry's associated number list.) If hyperlinks are defined, it will use `\glshypernumber`, otherwise it will simply display its argument "as is".

`\glsnumberformat`

```
\@ifundefined{hyperlink}{%
\newcommand*{\glsnumberformat}[1]{#1}}{%
\newcommand*{\glsnumberformat}[1]{\glshypernumber{#1}}}
```

Individual numbers in an entry's associated number list are delimited using `\delimN` (which corresponds to the `delim_n` `makeindex` keyword). The default value is a comma followed by a space.

`\delimN`

```
\newcommand{\delimN}{, }
```

A range of numbers within an entry's associated number list is delimited using `\delimR` (which corresponds to the `delim_r` `makeindex` keyword). The default is an en-dash.

`\delimR`

```
\newcommand{\delimR}{--}
```

The glossary preamble is given by `\glossarypreamble`. This will appear after the glossary sectioning command, and before the theglossary environment. It is designed to allow the user to add information pertaining to the glossary (e.g. "page numbers in italic indicate the primary definition") therefore `\glossarypremable` shouldn't be affected by the glossary style. (So if you define your own glossary style, don't have it change `\glossarypreamble`.) The preamble is empty by default. If you have multiple glossaries, and you want a different preamble for each glossary, you will need to use `\printglossary` for each glossary type, instead of `\printglossaries`, and redefine `\glossarypreamble` before each `\printglossary`.

`\glossarypreamble`

```
\newcommand*{\glossarypreamble}{}
```

The glossary postamble is given by `\glossarypostamble`. This is provided to allow the user to add something after the end of the theglossary environment (again, this shouldn't be affected by the glossary style). It is, of course, possible to simply add the text after `\printglossary`, but if you only want the postamble to appear after the first glossary, but not after subsequent glossaries, you can do something like:

```
\renewcommand{\glossarypostamble}{For a complete list of terms
see \cite{blah}\gdef\glossarypreamble{}}
```

`\glossarypostamble`

```
\newcommand*{\glossarypostamble}{}
```

The sectioning command that starts a glossary is given by `\glossarysection`. (This does not form part of the glossary style, and so should not be changed by a glossary style.) If `\phantomsection` is defined, it uses `\p@glossarysection`, otherwise it uses `\@glossarysection`.

`\glossarysection`

```
\newcommand*{\glossarysection}[2][\@gls@title]{%
\def\@gls@title{#2}%
\@ifundefined{phantomsection}{%
\@glossarysection{#1}{#2}}{\@p@glossarysection{#1}{#2}}%
\@mkboth{\glossarytoctitle}{\glossarytoctitle}%
}
```

The required sectional unit is given by \@@glossarysec which was defined by the section package option. The starred form of the command is chosen. If you don't want any sectional command, you will need to redefine \glossarysection. The sectional unit can be changed, if different sectional units are required.

\setglossarysection

```
\newcommand*{\setglossarysection}[1]{%
\setkeys{glossaries.sty}{section=#1}}
```

The command \@glossarysection indicates how to start the glossary section if \phantomsection is not defined.

\@glossarysection

```
\newcommand*{\@glossarysection}[2]{%
\ifx\@@glossarysecstar\@empty
  \csname\@@glossarysec\endcsname{#2}%
\else
  \csname\@@glossarysec\endcsname*{#2}%
  \@gls@toc{#1}{\@@glossarysec}%
\fi
\@@glossaryseclabel}
```

As \@glossarysection, but put in \phantomsection, and swap where \@gls@toc goes. If using chapters do a \clearpage. This ensures that the hyper link from the table of contents leads to the line above the heading, rather than the line below it.

\@p@glossarysection

```
\newcommand*{\@p@glossarysection}[2]{%
\gls@doclearpage
\phantomsection
\ifx\@@glossarysecstar\@empty
  \csname\@@glossarysec\endcsname{#2}%
\else
  \@gls@toc{#1}{\@@glossarysec}%
  \csname\@@glossarysec\endcsname*{#2}%
\fi
\@@glossaryseclabel}
```

The \gls@doclearpage command is used to issue a \clearpage (or \cleardoublepage) depending on whether the glossary sectional unit is a chapter. If the sectional unit is something else, do nothing.

\gls@doclearpage

```
\newcommand{\gls@doclearpage}{%
\ifthenelse{\equal{\@@glossarysec}{chapter}}{%
\@ifundefined{cleardoublepage}{\clearpage}{\cleardoublepage}}{}%
}
```

The glossary is added to the table of contents if glstoc flag set. If it is set, \@gls@toc will add a line to the .toc file, otherwise it will do nothing. (The first argument to \@gls@toc is the title for the table of contents, the second argument is the sectioning type.)

\@gls@toc

```
\newcommand*{\@gls@toc}[2]{%
\ifglstoc
  \ifglsnumberline
    \addcontentsline{toc}{#2}{\numberline{}#1}%
  \else
    \addcontentsline{toc}{#2}{#1}%
  \fi
\fi}
```

5.4 Loops and conditionals

To iterate through all glossaries (or comma-separated list of glossary names given in optional argument) use:

`\forallglossaries[`⟨*glossary list*⟩`]{`⟨*cmd*⟩`}{`⟨*code*⟩`}`

where ⟨*cmd*⟩ is a control sequence which will be set to the name of the glossary in the current iteration.

\forallglossaries

```
\newcommand*{\forallglossaries}[3][\@glo@types]{%
\@for#2:=#1\do{\ifthenelse{\equal{#2}{}}{}{#3}}}
```

To iterate through all entries in a given glossary use:

`\forglsentries[`⟨*type*⟩`]{`⟨*cmd*⟩`}{`⟨*code*⟩`}`

where ⟨*type*⟩ is the glossary label and ⟨*cmd*⟩ is a control sequence which will be set to the entry label in the current iteration.

\forglsentries

```
\newcommand*{\forglsentries}[3][\glsdefaulttype]{%
\edef\@@glo@list{\csname glolist@#1\endcsname}%
\@for#2:=\@@glo@list\do{%
\ifthenelse{\equal{#2}{}}{}{#3}}}
```

To iterate through all glossary entries over all glossaries listed in the optional argument (the default is all glossaries) use:

`\forallglsentries[`⟨*glossary list*⟩`]{`⟨*cmd*⟩`}{`⟨*code*⟩`}`

Within `\forallglsentries`, the current glossary type is given by `\@@this@glo@`.

\forallglsentries

```
\newcommand*{\forallglsentries}[3][\@glo@types]{%
\expandafter\forallglossaries\expandafter[#1]{\@@this@glo@}{%
\forglsentries[\@@this@glo@]{#2}{#3}}}
```

To check to see if a glossary exists use:

`\ifglossaryexists{`⟨*type*⟩`}{`⟨*true-text*⟩`}{`⟨*false-text*⟩`}`

where ⟨*type*⟩ is the glossary's label.

\ifglossaryexists

```
\newcommand{\ifglossaryexists}[3]{%
\@ifundefined{@glotype@#1@out}{#3}{#2}}
```

To check to see if a glossary entry has been defined use:

\ifglsentryexists{⟨*label*⟩}{⟨*true text*⟩}{⟨*false text*⟩}

where ⟨*label*⟩ is the entry's label.

\ifglsentryexists

```
\newcommand{\ifglsentryexists}[3]{%
\@ifundefined{glo@#1@name}{#3}{#2}}
```

To determine if given glossary entry has been used in the document text yet use:

\ifglsused{⟨*label*⟩}{⟨*true text*⟩}{⟨*false text*⟩}

where ⟨*label*⟩ is the entry's label. If true it will do ⟨*true text*⟩ otherwise it will do ⟨*false text*⟩.

\ifglsused

```
\newcommand*{\ifglsused}[3]{\ifthenelse{\boolean{glo@#1@flag}}{#2}{#3}}
```

The following two commands will cause an error if the given condition fails:

\glsdoifexists{⟨*label*⟩}{⟨*code*⟩}

Generate an error if entry specified by ⟨*label*⟩ doesn't exists, otherwise do ⟨*code*⟩.

\glsdoifexists

```
\newcommand{\glsdoifexists}[2]{\ifglsentryexists{#1}{#2}{%
\PackageError{glossaries}{Glossary entry `#1' has not been
defined.}{You need to define a glossary entry before you
can use it.}}}
```

\glsdoifnoexists{⟨*label*⟩}{⟨*code*⟩}

The opposite: only do second argument if the entry doesn't exists. Generate an error message if it exists.

\glsdoifnoexists

```
\newcommand{\glsdoifnoexists}[2]{\ifglsentryexists{#1}{%
\PackageError{glossaries}{Glossary entry `#1' has already
been defined.}{}}{#2}}
```

5.5 Defining new glossaries

A comma-separated list of glossary names is stored in \@glo@types. When a new glossary type is created, its identifying name is added to this list. This is used by commands that iterate through all glossaries (such as \makeglossaries and \printglossaries).

\@glo@types

```
\newcommand*{\@glo@types}{,}
```

A new glossary type is defined using `\newglossary`. Syntax:

`\newglossary[`⟨*log-ext*⟩`]{`⟨*name*⟩`}{`⟨*in-ext*⟩`}{`⟨*out-ext*⟩`} {`⟨*title*⟩`}[`⟨*counter*⟩`]`

where ⟨*log-ext*⟩ is the extension of the `makeindex` transcript file, ⟨*in-ext*⟩ is the extension of the glossary input file (read in by `\printglossary` and created by `makeindex`), ⟨*out-ext*⟩ is the extension of the glossary output file which is read in by `makeindex` (lines are written to this file by the `\glossary` command), ⟨*title*⟩ is the title of the glossary that is used in `\glossarysection` and ⟨*counter*⟩ is the default counter to be used by entries belonging to this glossary. The `makeglossaries` Perl script reads in the relevant extensions from the auxiliary file, and passes the appropriate file names and switches to `makeindex`.

`\newglossary`

```
\newcommand*{\newglossary}[5][glg]{%
\ifglossaryexists{#2}{%
\PackageError{glossaries}{Glossary type `#2' already exists}{%
You can't define a new glossary called `#2' because it already
exists}%
}{%
```

Add this to the list of glossary types:

```
\toks@{#2}\edef\@glo@types{\@glo@types\the\toks@,}%
```

Define a comma-separated list of labels for this glossary type, so that all the entries for this glossary can be reset with a single command. When a new entry is created, its label is added to this list.

```
\expandafter\gdef\csname glolist@#2\endcsname{,}%
```

Store details of this new glossary type:

```
\expandafter\def\csname @glotype@#2@in\endcsname{#3}%
\expandafter\def\csname @glotype@#2@out\endcsname{#4}%
\expandafter\def\csname @glotype@#2@title\endcsname{#5}%
\protected@write\@auxout{}{\string\@newglossary{#2}{#1}{#3}{#4}}%
```

How to display this entry in the document text (uses `\glsdisplay` and `\glsdisplayfirst` by default). These can be redefined by the user later if required (see `\defglsdisplay` and `\defglsdisplayfirst`)

```
\expandafter\gdef\csname gls@#2@display\endcsname{%
\glsdisplay}%
\expandafter\gdef\csname gls@#2@displayfirst\endcsname{%
\glsdisplayfirst}%
```

Find out if the final optional argument has been specified, and use it to set the counter associated with this glossary. (Uses `\glscounter` if no optional argument is present.)

```
\@ifnextchar[{\@gls@setcounter{#2}}{\@gls@setcounter{#2}[\glscounter]}}
```

Only defined new glossaries in the preamble:

```
\@onlypreamble{\newglossary}
```

`\@newglossary` is used to specify the file extensions for the `makeindex` input, output and transcript files. It is written to the auxiliary file by `\newglossary`. Since it is not used by LaTeX, `\@newglossary` simply ignores its arguments.

\@newglossary

```
\newcommand*{\@newglossary}[4]{}
```

Store counter to be used for given glossary type (the first argument is the glossary label, the second argument is the name of the counter):

\@gls@setcounter

```
\def\@gls@setcounter#1[#2]{%
\expandafter\def\csname @glotype@#1@counter\endcsname{#2}%
}
```

Get counter associated with given glossary (the argument is the glossary label):

\@gls@getcounter

```
\newcommand*{\@gls@getcounter}[1]{%
\csname @glotype@#1@counter\endcsname}
```

Define the main glossary. This will be the first glossary to be displayed when using \printglossaries.

```
\newglossary{main}{gls}{glo}{\glossaryname}
```

5.6 Defining new entries

New glossary entries are defined using \newglossaryentry. This command requires a label and a key-value list that defines the relevant information for that entry. The definition for these keys follows. Note that the name, description and symbol keys will be sanitized later, depending on the value of the package option sanitize (this means that if some of the keys haven't been defined, they can be constructed from the name and description key before they are sanitized).

The name key indicates the name of the term being defined. This is how the term will appear in the glossary. The name key is required when defining a new glossary entry.

```
\define@key{glossentry}{name}{%
\def\@glo@name{#1}%
}
```

The description key is usually only used in the glossary, but can be made to appear in the text by redefining \glsdisplay and \glsdisplayfirst (or using \defglsdisplay and \defglsdisplayfirst), however, you will have to disable the sanitize option (using the sanitize package option, sanitize={description=false}, and protect fragile commands). The description key is required when defining a new glossary entry. (Be careful not to make the description too long, because makeindex has a limited buffer. \@glo@desc is defined to be a short command to discourage lengthy descriptions for this reason. If you do have a very long description, or if you require paragraph breaks, define a separate command that contains the description, and use it as the value to the description key.)

```
\define@key{glossentry}{description}{%
\def\@glo@desc{#1}%
}

\define@key{glossentry}{descriptionplural}{%
\def\@glo@descplural{#1}%
}
```

The sort key needs to be sanitized here (the sort key is provided for `makeindex`'s benefit, not for use in the document). The sort key is optional when defining a new glossary entry. If omitted, the value is given by ⟨*name*⟩ ⟨*description*⟩.

```
\define@key{glossentry}{sort}{%
\def\@glo@sort{#1}%
\@onelevel@sanitize\@glo@sort}
```

The text key determines how the term should appear when used in the document (i.e. outside of the glossary). If omitted, the value of the name key is used instead.

```
\define@key{glossentry}{text}{%
\def\@glo@text{#1}%
}
```

The plural key determines how the plural form of the term should be displayed in the document. If omitted, the plural is constructed by appending `\glspluralsuffix` to the value of the text key.

```
\define@key{glossentry}{plural}{%
\def\@glo@plural{#1}%
}
```

The first key determines how the entry should be displayed in the document when it is first used. If omitted, it is taken to be the same as the value of the text key.

```
\define@key{glossentry}{first}{%
\def\@glo@first{#1}%
}
```

The firstplural key is used to set the plural form for first use, in the event that the plural is required the first time the term is used. If omitted, it is constructed by appending `\glspluralsuffix` to the value of the first key.

```
\define@key{glossentry}{firstplural}{%
\def\@glo@firstplural{#1}%
}
```

The symbol key is ignored by most of the predefined glossary styles, and defaults to `\relax` if omitted. It is provided for glossary styles that require an associated symbol, as well as a name and description. To make this value appear in the glossary, you need to redefine `\glossaryentryfield` so that it uses its fourth parameter. If you want this value to appear in the text when the term is used by commands like `\gls`, you will need to change `\glsdisplay` and `\glsdisplayfirst` (either explicitly for all glossaries or via `\defglsdisplay` and `\defglsdisplayfirst` for individual glossaries).

```
\define@key{glossentry}{symbol}{%
\def\@glo@symbol{#1}%
}

\define@key{glossentry}{symbolplural}{%
\def\@glo@symbolplural{#1}%
}
```

The type key specifies to which glossary this entry belongs. If omitted, the default glossary is used.

```
\define@key{glossentry}{type}{%
\def\@glo@type{#1}}
```

The counter key specifies the name of the counter associated with this glossary entry:

```
\define@key{glossentry}{counter}{%
\@ifundefined{c@#1}{\PackageError{glossaries}{There is no counter
called '#1'}{The counter key should have the name of a valid
counter as its value}}{%
\def\@glo@counter{#1}}}
```

Define `\newglossaryentry {`⟨*label*⟩`} {`⟨*key-val list*⟩`}`. There are two required fields in ⟨*key-val list*⟩: name and description. (See above.)

`\newglossaryentry`

```
\DeclareRobustCommand{\newglossaryentry}[2]{%
```

Check to see if this glossary entry has already been defined:

```
\glsdoifnoexists{#1}{%
```

Set up defaults. If the name or description keys are omitted, an error will be generated.

```
\def\@glo@name{\PackageError{glossaries}{name key required in
\string\newglossaryentry}{You haven't specified the entry name}}%
\def\@glo@desc{\PackageError{glossaries}{description key required in
\string\newglossaryentry}{You haven't specified the entry description}}%
\def\@glo@descplural{\@glo@desc}%
\def\@glo@type{\glsdefaulttype}%
\def\@glo@symbol{\relax}%
\def\@glo@symbolplural{\@glo@symbol}%
\def\@glo@text{\@glo@name}%
\def\@glo@plural{\@glo@text\glspluralsuffix}%
```

Using `\let` instead of `\def` to make later comparison avoid expansion issues. (Thanks to Ulrich Diez for suggesting this.)

```
\let\@glo@first\relax
\let\@glo@firstplural\relax
\def\@glo@sort{\@glo@name}%
\def\@glo@counter{\@gls@getcounter{\@glo@type}}%
```

Extract key-val information from third parameter:

```
\setkeys{glossentry}{#2}%
```

Check to see if this glossary type has been defined, if it has, add this label to the relevant list, otherwise generate an error.

```
\@ifundefined{glolist@\@glo@type}{\PackageError{glossaries}{%
Glossary type '\@glo@type' has not been defined}{%
You need to define a new glossary type, before making entries
in it}}{%
\protected@edef\@glolist@{\csname glolist@\@glo@type\endcsname}%
\expandafter\xdef\csname glolist@\@glo@type\endcsname{\@glolist@{#1},}%
}%
```

Check if first and firstplural have been use. If firstplural hasn't been specified, but first has been specified, then form firstplural by appending \glspluralsuffix to value of first key, otherwise obtain the value from the plural key. This now uses \ifx instead of \if to avoid expansion issues. (Thanks to Ulrich Diez for suggesting this.)

```
\ifx\relax\@glo@firstplural
   \ifx\relax\@glo@first
      \def\@glo@firstplural{\@glo@plural}%
      \def\@glo@first{\@glo@text}%
   \else
      \def\@glo@firstplural{\@glo@first\glspluralsuffix}%
   \fi
\else
   \ifx\relax\@glo@first
      \def\@glo@first{\@glo@text}%
   \fi
\fi
```

Define commands associated with this entry:

```
\expandafter\protected@xdef\csname glo@#1@text\endcsname{\@glo@text}%
\expandafter\protected@xdef\csname glo@#1@plural\endcsname{\@glo@plural}%
\expandafter\protected@xdef\csname glo@#1@first\endcsname{\@glo@first}%
\expandafter\protected@xdef\csname glo@#1@firstpl\endcsname{\@glo@firstplural}%
\expandafter\protected@xdef\csname glo@#1@type\endcsname{\@glo@type}%
\expandafter\protected@xdef\csname glo@#1@counter\endcsname{\@glo@counter}%
\@gls@sanitizename
\expandafter\protected@xdef\csname glo@#1@name\endcsname{\@glo@name}%
```

The smaller and smallcaps options set the description to \@glo@first. Need to check for this, otherwise it won't get expanded if the description gets sanitized.

```
\def\@glo@@desc{\@glo@first}%
\ifx\@glo@desc\@glo@@desc
  \let\@glo@desc\@glo@first
\fi
\@gls@sanitizedesc
\expandafter\protected@xdef\csname glo@#1@desc\endcsname{\@glo@desc}%
\expandafter\protected@xdef\csname glo@#1@descplural\endcsname{\@glo@descplural}%
\expandafter\protected@xdef\csname glo@#1@sort\endcsname{\@glo@sort}%

\def\@glo@@symbol{\@glo@text}%
\ifx\@glo@symbol\@glo@@symbol
  \let\@glo@symbol\@glo@text
\fi
\@gls@sanitizesymbol
\expandafter\protected@xdef\csname glo@#1@symbol\endcsname{\@glo@symbol}%
\expandafter\protected@xdef\csname glo@#1@symbolplural\endcsname{\@glo@symbolplural}%
```

Define an associated boolean variable to determine whether this entry has been used yet (needs to be defined globally):

```
\expandafter\gdef\csname glo@#1@flagfalse\endcsname{%
\expandafter\global\expandafter
\let\csname ifglo@#1@flag\endcsname\iffalse}%
\expandafter\gdef\csname glo@#1@flagtrue\endcsname{%
\expandafter\global\expandafter
\let\csname ifglo@#1@flag\endcsname\iftrue}%
```

```
\csname glo@#1@flagfalse\endcsname
}}
```

5.7 Resetting and unsetting entry flags

Each glossary entry is assigned a conditional of the form `\ifglo@`⟨*label*⟩`@flag` which determines whether or not the entry has been used (see also `\ifglsused` defined below). These flags can be set and unset using the following macros:

The command `\glsreset{`⟨*label*⟩`}` can be used to set the entry flag to indicate that it hasn't been used yet. The required argument is the entry label.

`\glsreset`

```
\newcommand*{\glsreset}[1]{%
\glsdoifexists{#1}{%
\expandafter\global\csname glo@#1@flagfalse\endcsname}}
```

As above, but with only a local effect:

`\glslocalreset`

```
\newcommand*{\glslocalreset}[1]{%
\glsdoifexists{#1}{%
\expandafter\let\csname ifglo@#1@flag\endcsname\iffalse}}
```

The command `\glsunset{`⟨*label*⟩`}` can be used to set the entry flag to indicate that it has been used. The required argument is the entry label.

`\glsunset`

```
\newcommand*{\glsunset}[1]{%
\glsdoifexists{#1}{%
\expandafter\global\csname glo@#1@flagtrue\endcsname}}
```

As above, but with only a local effect:

`\glslocalunset`

```
\newcommand*{\glslocalunset}[1]{%
\glsdoifexists{#1}{%
\expandafter\let\csname ifglo@#1@flag\endcsname\iftrue}}
```

Reset all entries for the named glossaries (supplied in a comma-separated list). Syntax: `\glsresetall[`⟨*glossary-list*⟩`]`

`\glsresetall`

```
\newcommand*{\glsresetall}[1][\@glo@types]{%
\forallglsentries[#1]{\@glsentry}{%
\glsreset{\@glsentry}}}
```

As above, but with only a local effect:

`\glslocalresetall`

```
\newcommand*{\glslocalresetall}[1][\@glo@types]{%
\forallglsentries[#1]{\@glsentry}{%
\glslocalreset{\@glsentry}}}
```

Unset all entries for the named glossaries (supplied in a comma-separated list). Syntax: `\glsunsetall[`⟨*glossary-list*⟩`]`

\glsunsetall

```
\newcommand*{\glsunsetall}[1][\@glo@types]{%
\forallglsentries[#1]{\@glsentry}{%
\glsunset{\@glsentry}}}
```

As above, but with only a local effect:

\glslocalunsetall

```
\newcommand*{\glslocalunsetall}[1][\@glo@types]{%
\forallglsentries[#1]{\@glsentry}{%
\glslocalunset{\@glsentry}}}
```

5.8 Loading files containing glossary entries

Glossary entries can be defined in an external file. These external files can contain `\newglossaryentry` and `\newacronym` commands.[10]

`\loadglsentries[`⟨*type*⟩`]{`⟨*filename*⟩`}`

This command will input the file using `\input`. The optional argument specifies to which glossary the entries should be assigned if they haven't used the type key. If the optional argument is not specified, the default glossary is used. Only those entries used in the document (via `\glslink`, `\gls`, `\glspl` and uppercase variants or `\glsadd` and `\glsaddall` will appear in the glossary). The mandatory argument is the filename (with or without .tex extension).

\loadglsentries

```
\newcommand*{\loadglsentries}[2][\@gls@default]{%
\let\@gls@default\glsdefaulttype
\def\glsdefaulttype{#1}\input{#2}%
\let\glsdefaulttype\@gls@default}
```

`\loadglsentries` can only be used in the preamble:

```
\@onlypreamble{\loadglsentries}
```

5.9 Using glossary entries in the text

Any term that has been defined using `\newglossaryentry` (or `\newacronym`) can be displayed in the text (i.e. outside of the glossary) using one of the commands defined in this section. Unless you use `\glslink`, the way the term appears in the text is determined by `\glsdisplayfirst` (if it is the first time the term has been used) or `\glsdisplay` (for subsequent use). Any formatting commands (such as `\textbf` is governed by `\glstextformat`. By default this just displays the link text "as is".

\glstextformat

```
\newcommand*{\glstextformat}[1]{#1}
```

The first time an entry is used, the way in which it is displayed is governed by `\glsdisplayfirst`. This takes four parameters: #1 will be the value of the entry's first or firstplural key, #2 will be the value of the entry's description key, #3

[10] and any other valid LaTeX code that can be used in the preamble.

will be the value of the entry's symbol key and #4 is additional text supplied by the final optional argument to commands like \gls and \glspl. The default is to display the first parameter followed by the additional text.

\glsdisplayfirst

```
366 \newcommand*{\glsdisplayfirst}[4]{#1#4}
```

After the first use, the entry is displayed according to the format of \glsdisplay. Again, it takes four parameters: #1 will be the value of the entry's text or plural key, #2 will be the value of the entry's description key, #3 will be the value of the entry's symbol key and #4 is additional text supplied by the final optional argument to commands like \gls and \glspl.

\glsdisplay

```
367 \newcommand*{\glsdisplay}[4]{#1#4}
```

When a new glossary is created it uses \glsdisplayfirst and \glsdisplay as the default way of displaying its entry in the text. This can be changed for the entries belonging to an individual glossary using \defglsdisplay and \defglsdisplayfirst.

\defglsdisplay[⟨*type*⟩]{⟨*definition*⟩}

The glossary type is given by ⟨*type*⟩ (the default glossary if omitted) and ⟨*definition*⟩ should have at most #1, #2, #3 and #4. These represent the same arguments as those described for \glsdisplay.

\defglsdisplay

```
368 \newcommand*{\defglsdisplay}[2][\glsdefaulttype]{%
369 \expandafter\def\csname gls@#1@display\endcsname##1##2##3##4{#2}}
```

\defglsdisplayfirst[⟨*type*⟩]{⟨*definition*⟩}

The glossary type is given by ⟨*type*⟩ (the default glossary if omitted) and ⟨*definition*⟩ should have at most #1, #2, #3 and #4. These represent the same arguments as those described for \glsdisplayfirst.

\defglsdisplayfirst

```
370 \newcommand*{\defglsdisplayfirst}[2][\glsdefaulttype]{%
371 \expandafter\def\csname gls@#1@displayfirst\endcsname##1##2##3##4{#2}}
```

5.9.1 Links to glossary entries

The links to glossary entries all have a first optional argument that can be used to change the format and counter of the associated entry number. Except for \glslink, the commands like \gls have a final optional argument that can be used to insert additional text in the link (this will usually be appended, but can be redefined using \defglsdisplay and \defglsdisplayfirst). It goes against the LaTeX norm to have an optional argument after the mandatory arguments, but it makes more sense to write, say, \gls{label}['s] rather than, say, \gls[append='s]{label}. Since these control sequences are defined to include the final square bracket, spaces will be ignored after them. This is likely

to lead to confusion as most users would not expect, say, `\gls{`⟨*label*⟩`}` to ignore following spaces, so `\new@ifnextchar` from the amsgen package is required.

The following keys can be used in the first optional argument. The counter key checks that the value is the name of a valid counter.

```
\define@key{glslink}{counter}{%
\@ifundefined{c@#1}{\PackageError{glossaries}{There is no counter
called '#1'}{The counter key should have the name of a valid
counter as its value}}{%
\def\@gls@counter{#1}}}
```

The value of the format key should be the name of a command (without the initial backslash) that has a single mandatory argument which can be used to format the associated entry number.

```
\define@key{glslink}{format}{%
\def\@glsnumberformat{#1}}
```

The hyper key is a boolean key, it can either have the value true or false, and indicates whether or not to make a hyperlink to the relevant glossary entry. If hyper is false, an entry will still be made in the glossary, but the given text won't be a hyperlink.

```
\define@boolkey{glslink}{hyper}[true]{}
```

Syntax:

`\glslink[`⟨*options*⟩`]{`⟨*label*⟩`}{`⟨*text*⟩`}`

Display ⟨*text*⟩ in the document, and add the entry information for ⟨*label*⟩ into the relevant glossary. The optional argument should be a key value list using the `glslink` keys defined above.

There is also a starred version:

`\glslink*[`⟨*options*⟩`]{`⟨*label*⟩`}{`⟨*text*⟩`}`

which is equivalent to `\glslink[hyper=false,`⟨*options*⟩`]{`⟨*label*⟩`}{`⟨*text*⟩`}`

First determine whether or not we are using the starred version:

`\glslink`

```
\newcommand{\glslink}{%
\@ifstar\@sgls@link\@gls@link}
```

Define the starred version:

`\@sgls@link`

```
\newcommand*{\@sgls@link}[1][]{\@gls@link[hyper=false,#1]}
```

Define the un-starred version:

`\@gls@link`

```
\newcommand*{\@gls@link}[3][]{%
\glsdoifexists{#2}{%
\def\glslabel{#2}%
\def\@glsnumberformat{glsnumberformat}%
\edef\@gls@counter{\csname glo@#2@counter\endcsname}%
\KV@glslink@hypertrue
\setkeys{glslink}{#1}%
```

```
\edef\theglsentrycounter{\expandafter\noexpand\csname the\@gls@counter\endcsname}%
\ifKV@glslink@hyper
\@glslink{glo:#2}{\glstextformat{#3}}%
\else
\glstextformat{#3}\relax
\fi
\protected@edef\@glo@sort{\csname glo@#2@sort\endcsname}%
\@gls@checkmkidxchars\@glo@sort
\protected@edef\@@glo@name{\csname glo@#2@name\endcsname}%
\@gls@checkmkidxchars\@@glo@name
\protected@edef\@glo@name{\string\glsnamefont{\@@glo@name}}%
\protected@edef\@glo@desc{\csname glo@#2@desc\endcsname}%
\@gls@checkmkidxchars\@glo@desc
\protected@edef\@glo@symbol{\csname glo@#2@symbol\endcsname}%
\@gls@checkmkidxchars\@glo@symbol
\@set@glo@numformat\@glo@numfmt\@gls@counter\@glsnumberformat
\glossary[\csname glo@#2@type\endcsname]{%
\@glo@sort\@gls@actualchar
\string\glossaryentryfield{#2}{\@glo@name}{\@glo@desc
}{\@glo@symbol}\@gls@encapchar\@glo@numfmt}%
}}
```

Set the formatting information in the format required by `makeindex`:

`\@set@glo@numformat`

```
\def\@set@glo@numformat#1#2#3{%
\expandafter\@glo@check@mkidxrangechar#3\@nil
\protected@edef#1{\@glo@prefix setentrycounter{#2}%
\expandafter\string\csname\@glo@suffix\endcsname}%
\@gls@checkmkidxchars#1}
```

Check to see if the given string starts with a (or). If it does set `\@glo@prefix` to the starting character, and `\@glo@suffix` to the rest (or `glsnumberformat` if there is nothing else), otherwise set `\@glo@prefix` to nothing and `\@glo@suffix` to all of it.

```
\def\@glo@check@mkidxrangechar#1#2\@nil{%
\if#1(\relax
  \def\@glo@prefix{(}%
  \if\relax#2\relax
    \def\@glo@suffix{glsnumberformat}%
  \else
    \def\@glo@suffix{#2}%
  \fi
\else
  \if#1)\relax
    \def\@glo@prefix{)}%
    \if\relax#2\relax
      \def\@glo@suffix{glsnumberformat}%
    \else
      \def\@glo@suffix{#2}%
  \fi
  \else
    \def\@glo@prefix{}\def\@glo@suffix{#1#2}%
  \fi
\fi}
```

Catch `makeindex` special characters:

`\@gls@checkmkidxchars`

```
\newcommand{\@gls@checkmkidxchars}[1]{%
\def\@gls@checkedmkidx{}%
\expandafter\@gls@checkquote#1\@nil""\null%
\expandafter\@gls@updatechecked\@gls@checkedmkidx{#1}%
\def\@gls@checkedmkidx{}%
\expandafter\@gls@checkescquote#1\@nil\"\"\null%
\expandafter\@gls@updatechecked\@gls@checkedmkidx{#1}%
\def\@gls@checkedmkidx{}%
\expandafter\@gls@checkescactual#1\@nil\?\?\null%
\expandafter\@gls@updatechecked\@gls@checkedmkidx{#1}%
\def\@gls@checkedmkidx{}%
\expandafter\@gls@checkactual#1\@nil??\null%
\expandafter\@gls@updatechecked\@gls@checkedmkidx{#1}%
\def\@gls@checkedmkidx{}%
\expandafter\@gls@checkbar#1\@nil||\null%
\expandafter\@gls@updatechecked\@gls@checkedmkidx{#1}%
\def\@gls@checkedmkidx{}%
\expandafter\@gls@checkescbar#1\@nil\|\|\null%
\expandafter\@gls@updatechecked\@gls@checkedmkidx{#1}%
\def\@gls@checkedmkidx{}%
\expandafter\@gls@checklevel#1\@nil!!\null%
\expandafter\@gls@updatechecked\@gls@checkedmkidx{#1}%
}
```

Update the control sequence and strip trailing `\@nil`:

`\@gls@updatechecked`

```
\def\@gls@updatechecked#1\@nil#2{\def#2{#1}}
```

`\@gls@tmpb` Define temporary token

```
\newtoks\@gls@tmpb
```

`\@gls@checkquote` Replace " with "" since " is a makeindex special character.

```
\def\@gls@checkquote#1"#2"#3\null{%
\@gls@tmpb=\expandafter{\@gls@checkedmkidx}%
\toks@={#1}%
\ifx\null#2\null%
 \ifx\null#3\null
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@}%
  \def\@@gls@checkquote{\relax}%
 \else
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
    \@gls@quotechar\@gls@quotechar\@gls@quotechar\@gls@quotechar}%
  \def\@@gls@checkquote{\@gls@checkquote#3\null}%
 \fi
\else
 \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
   \@gls@quotechar\@gls@quotechar}%
 \ifx\null#3\null
   \def\@@gls@checkquote{\@gls@checkquote#2""\null}%
 \else
```

```
    \def\@@gls@checkquote{\@gls@checkquote#2"#3\null}%
  \fi
\fi
\@@gls@checkquote}
```

`\@gls@checkescquote` Do the same for `\"`:

```
\def\@gls@checkescquote#1\"#2\"#3\null{%
\@gls@tmpb=\expandafter{\@gls@checkedmkidx}%
\toks@={#1}%
\ifx\null#2\null%
 \ifx\null#3\null
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@}%
  \def\@@gls@checkescquote{\relax}%
 \else
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
    \@gls@quotechar\string\"\@gls@quotechar
    \@gls@quotechar\string\"\@gls@quotechar}%
  \def\@@gls@checkescquote{\@gls@checkescquote#3\null}%
 \fi
\else
 \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
   \@gls@quotechar\string\"\@gls@quotechar}%
 \ifx\null#3\null
   \def\@@gls@checkescquote{\@gls@checkescquote#2\"\"\null}%
 \else
   \def\@@gls@checkescquote{\@gls@checkescquote#2\"#3\null}%
 \fi
\fi
\@@gls@checkescquote}
```

`\@gls@checkescactual` Similarly for `\?` (which is replaces @ as `makeindex`'s special character):

```
\def\@gls@checkescactual#1\?#2\?#3\null{%
\@gls@tmpb=\expandafter{\@gls@checkedmkidx}%
\toks@={#1}%
\ifx\null#2\null%
 \ifx\null#3\null
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@}%
  \def\@@gls@checkescactual{\relax}%
 \else
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
    \@gls@quotechar\string\"\@gls@actualchar
    \@gls@quotechar\string\"\@gls@actualchar}%
  \def\@@gls@checkescactual{\@gls@checkescactual#3\null}%
 \fi
\else
 \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
   \@gls@quotechar\string\"\@gls@actualchar}%
 \ifx\null#3\null
  \def\@@gls@checkescactual{\@gls@checkescactual#2\?\?\null}%
 \else
  \def\@@gls@checkescactual{\@gls@checkescactual#2\?#3\null}%
 \fi
\fi
\@@gls@checkescactual}
```

\@gls@checkescbar Similarly for \|:

```
\def\@gls@checkescbar#1\|#2\|#3\null{%
\@gls@tmpb=\expandafter{\@gls@checkedmkidx}%
\toks@={#1}%
\ifx\null#2\null%
 \ifx\null#3\null
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@}%
  \def\@@gls@checkescbar{\relax}%
 \else
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
    \@gls@quotechar\string\"\@gls@encapchar
    \@gls@quotechar\string\"\@gls@encapchar}%
  \def\@@gls@checkescbar{\@gls@checkescbar#3\null}%
 \fi
\else
 \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
   \@gls@quotechar\string\"\@gls@encapchar}%
 \ifx\null#3\null
  \def\@@gls@checkescbar{\@gls@checkescbar#2\|\|\null}%
 \else
  \def\@@gls@checkescbar{\@gls@checkescbar#2\|#3\null}%
 \fi
\fi
\@@gls@checkescbar}
```

\@gls@checkesclevel Similarly for \!:

```
\def\@gls@checkesclevel#1\!#2\!#3\null{%
\@gls@tmpb=\expandafter{\@gls@checkedmkidx}%
\toks@={#1}%
\ifx\null#2\null%
 \ifx\null#3\null
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@}%
  \def\@@gls@checkesclevel{\relax}%
 \else
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
    \@gls@quotechar\string\"\@gls@levelchar
    \@gls@quotechar\string\"\@gls@levelchar}%
  \def\@@gls@checkesclevel{\@gls@checkesclevel#3\null}%
 \fi
\else
 \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
   \@gls@quotechar\string\"\@gls@levelchar}%
 \ifx\null#3\null
  \def\@@gls@checkesclevel{\@gls@checkesclevel#2\!\!\null}%
 \else
  \def\@@gls@checkesclevel{\@gls@checkesclevel#2\!#3\null}%
 \fi
\fi
\@@gls@checkesclevel}
```

\@gls@checkbar and for |:

```
\def\@gls@checkbar#1|#2|#3\null{%
\@gls@tmpb=\expandafter{\@gls@checkedmkidx}%
\toks@={#1}%
```

```
\ifx\null#2\null%
 \ifx\null#3\null
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@}%
  \def\@@gls@checkbar{\relax}%
 \else
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
    \@gls@quotechar\@gls@encapchar\@gls@quotechar\@gls@encapchar}%
  \def\@@gls@checkbar{\@gls@checkbar#3\null}%
 \fi
\else
 \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
   \@gls@quotechar\@gls@encapchar}%
 \ifx\null#3\null
   \def\@@gls@checkbar{\@gls@checkbar#2||\null}%
 \else
   \def\@@gls@checkbar{\@gls@checkbar#2|#3\null}%
 \fi
\fi
\@@gls@checkbar}
```

`\@gls@checklevel` and for `!`:

```
\def\@gls@checklevel#1!#2!#3\null{%
\@gls@tmpb=\expandafter{\@gls@checkedmkidx}%
\toks@={#1}%
\ifx\null#2\null%
 \ifx\null#3\null
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@}%
  \def\@@gls@checklevel{\relax}%
 \else
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
    \@gls@quotechar\@gls@levelchar\@gls@quotechar\@gls@levelchar}%
  \def\@@gls@checklevel{\@gls@checklevel#3\null}%
 \fi
\else
 \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
   \@gls@quotechar\@gls@levelchar}%
 \ifx\null#3\null
   \def\@@gls@checklevel{\@gls@checklevel#2!!\null}%
 \else
   \def\@@gls@checklevel{\@gls@checklevel#2!#3\null}%
 \fi
\fi
\@@gls@checklevel}
```

`\@gls@checkactual` and for `?`:

```
\def\@gls@checkactual#1?#2?#3\null{%
\@gls@tmpb=\expandafter{\@gls@checkedmkidx}%
\toks@={#1}%
\ifx\null#2\null%
 \ifx\null#3\null
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@}%
  \def\@@gls@checkactual{\relax}%
 \else
  \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
```

```
    \@gls@quotechar\@gls@actualchar\@gls@quotechar\@gls@actualchar}%
  \def\@@gls@checkactual{\@gls@checkactual#3\null}%
 \fi
\else
 \edef\@gls@checkedmkidx{\the\@gls@tmpb\the\toks@
   \@gls@quotechar\@gls@actualchar}%
 \ifx\null#3\null
   \def\@@gls@checkactual{\@gls@checkactual#2??\null}%
 \else
   \def\@@gls@checkactual{\@gls@checkactual#2?#3\null}%
 \fi
\fi
\@@gls@checkactual}
```

`\@glslink` If `\hyperlink` is not defined `\@glslink` ignores its first argument and just does the second argument, otherwise it is equivalent to `\hyperlink`.

```
\@ifundefined{hyperlink}{%
  \gdef\@glslink#1#2{#2}%
}{%
  \gdef\@glslink#1#2{\hyperlink{#1}{#2}}%
}
```

`\@glstarget` If `\hypertarget` is not defined, `\@glstarget` ignores its first argument and just does the second argument, otherwise it is equivalent to `\hypertarget`.

```
\newlength\gls@tmplen
\@ifundefined{hypertarget}{%
  \gdef\@glstarget#1#2{#2}%
}{%
 \gdef\@glstarget#1#2{%
    \settoheight{\gls@tmplen}{#2}%
    \raisebox{\gls@tmplen}{\hypertarget{#1}{}}#2}%
}
```

Glossary hyperlinks can be disabled using `\glsdisablehyper` (effect can be localised):

`\glsdisablehyper`

```
\newcommand{\glsdisablehyper}{%
\renewcommand*\@glslink[2]{##2}%
\renewcommand*\@glstarget[2]{##2}}
```

Glossary hyperlinks can be enabled using `\glsenablehyper` (effect can be localised):

`\glsenablehyper`

```
\newcommand{\glsenablehyper}{%
\renewcommand*\@glslink[2]{\hyperlink{##1}{##2}}%
\renewcommand*\@glstarget[2]{%
  \settoheight{\gls@tmplen}{##2}%
  \raisebox{\gls@tmplen}{\hypertarget{##1}{}}##2}}
```

Syntax:

`\gls[`⟨*options*⟩`]{`⟨*label*⟩`}[`⟨*insert text*⟩`]`

Link to glossary entry using singular form. The link text is taken from the value of the text or first keys used when the entry was defined.

The first optional argument is a key-value list, the same as \glslink, the mandatory argument is the entry label. After the mandatory argument, there is another optional argument to insert extra text in the link text (the location of the inserted text is governed by \glsdisplay and \glsdisplayfirst). As with \glslink there is a starred version which is the same as the unstarred version but with the hyper key set to false. (Additional options can also be specified in the first optional argument.)

First determine if we are using the starred form:

\gls

```
\newcommand*{\gls}{\@ifstar\@sgls\@gls}
```

Define the starred form:

\@sgls

```
\newcommand*{\@sgls}[1][]{\@gls[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

\@gls

```
\newcommand*{\@gls}[2][]{%
\new@ifnextchar[{\@gls@{#1}{#2}}{\@gls@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@gls@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Save options in \@gls@link@opts and label in \@gls@link@label

```
\def\@gls@link@opts{#1}%
\def\@gls@link@label{#2}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\ifglsused{#2}{\protected@edef\@glo@text{%
\csname gls@\@glo@type @display\endcsname
{\glsentrytext{#2}}{\glsentrydesc{#2}}{\glsentrysymbol{#2}}{#3}}}{%
\protected@edef\@glo@text{%
\csname gls@\@glo@type @displayfirst\endcsname
{\glsentryfirst{#2}}{\glsentrydesc{#2}}{\glsentrysymbol{#2}}{#3}}}%
```

Call \@gls@link. If footnote package option has been used, suppress hyperlink for first use.

```
\ifglsused{#2}{%
  \@gls@link[#1]{#2}{\@glo@text}%
}{%
  \ifthenelse{\equal{\@glo@type}{\acronymtype}\and
    \boolean{glsacrfootnote}}{%
    \@gls@link[#1,hyper=false]{#2}{\@glo@text}%
  }{%
    \@gls@link[#1]{#2}{\@glo@text}%
  }%
}%
```

Indicate that this entry has now been used

```
\glsunset{#2}%
}
```

`\Gls` behaves like `\gls`, but the first letter of the link text is converted to uppercase (note that if the first letter has an accent, the accented letter will need to be grouped when you define the entry). It is mainly intended for terms that start a sentence:

`\Gls`

```
\newcommand*{\Gls}{\@ifstar\@sGls\@Gls}
```

Define the starred form:

```
\newcommand*{\@sGls}[1][]{\@Gls[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Gls}[2][]{%
\new@ifnextchar[{\@Gls@{#1}{#2}}{\@Gls@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Gls@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Save options in `\@gls@link@opts` and label in `\@gls@link@label`

```
\def\@gls@link@opts{#1}%
\def\@gls@link@label{#2}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\ifglsused{#2}{\protected@edef\@glo@text{%
\csname gls@\@glo@type @display\endcsname
{\glsentrytext{#2}}{\glsentrydesc{#2}}{\glsentrysymbol{#2}}{#3}}}{%
\protected@edef\@glo@text{%
\csname gls@\@glo@type @displayfirst\endcsname
{\glsentryfirst{#2}}{\glsentrydesc{#2}}{\glsentrysymbol{#2}}{#3}}}%
```

Call `\@gls@link` If footnote package option has been used, suppress hyperlink for first use.

```
\ifglsused{#2}{%
  \@gls@link[#1]{#2}{%
  \expandafter\makefirstuc\expandafter{\@glo@text}}%
}{%
  \ifthenelse{\equal{\@glo@type}{\acronymtype}\and
    \boolean{glsacrfootnote}}{%
    \@gls@link[#1,hyper=false]{#2}{%
  \expandafter\makefirstuc\expandafter{\@glo@text}}%
  }{%
    \@gls@link[#1]{#2}{%
  \expandafter\makefirstuc\expandafter{\@glo@text}}%
  }%
}%
```

Indicate that this entry has now been used

```
\glsunset{#2}%
}
```

`\GLS` behaves like `\gls`, but the link text is converted to uppercase:

\GLS

```
\newcommand*{\GLS}{\@ifstar\@sGLS\@GLS}
```

Define the starred form:

```
\newcommand*{\@sGLS}[1][]{\@GLS[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLS}[2][]{%
\new@ifnextchar[{\@GLS@{#1}{#2}}{\@GLS@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLS@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Save options in `\@gls@link@opts` and label in `\@gls@link@label`

```
\def\@gls@link@opts{#1}%
\def\@gls@link@label{#2}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\ifglsused{#2}{\protected@edef\@glo@text{%
\csname gls@\@glo@type @display\endcsname
{\glsentrytext{#2}}{\glsentrydesc{#2}}{\glsentrysymbol{#2}}{#3}}}{%
\protected@edef\@glo@text{%
\csname gls@\@glo@type @displayfirst\endcsname
{\glsentryfirst{#2}}{\glsentrydesc{#2}}{\glsentrysymbol{#2}}{#3}}}%
```

Call `\@gls@link` If footnote package option has been used, suppress hyperlink for first use.

```
\ifglsused{#2}{%
  \@gls@link[#1]{#2}{\MakeUppercase{\@glo@text}}%
}{%
  \ifthenelse{\equal{\@glo@type}{\acronymtype}\and
    \boolean{glsacrfootnote}}{%
    \@gls@link[#1,hyper=false]{#2}{\MakeUppercase{\@glo@text}}%
  }{%
    \@gls@link[#1]{#2}{\MakeUppercase{\@glo@text}}%
  }%
}%
```

Indicate that this entry has now been used

```
\glsunset{#2}}%
}
```

`\glspl` behaves in the same way as `\gls` except it uses the plural form.

\glspl

```
\newcommand*{\glspl}{\@ifstar\@sglspl\@glspl}
```

Define the starred form:

```
\newcommand*{\@sglspl}[1][]{\@glspl[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@glspl}[2][]{%
\new@ifnextchar[{\@glspl@{#1}{#2}}{\@glspl@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@glspl@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Save options in `\@gls@link@opts` and label in `\@gls@link@label`

```
\def\@gls@link@opts{#1}%
\def\@gls@link@label{#2}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\ifglsused{#2}{\protected@edef\@glo@text{%
\csname gls@\@glo@type @display\endcsname
{\glsentryplural{#2}}{\glsentrydescplural{#2}}{%
\glsentrysymbolplural{#2}}{#3}}}{%
\protected@edef\@glo@text{%
\csname gls@\@glo@type @displayfirst\endcsname
{\glsentryfirstplural{#2}}{\glsentrydescplural{#2}}{%
\glsentrysymbolplural{#2}}{#3}}}%
```

Call `\@gls@link` If footnote package option has been used, suppress hyperlink for first use.

```
\ifglsused{#2}{%
  \@gls@link[#1]{#2}{\@glo@text}%
}{%
  \ifthenelse{\equal{\@glo@type}{\acronymtype}\and
    \boolean{glsacrfootnote}}{%
    \@gls@link[#1,hyper=false]{#2}{\@glo@text}%
  }{%
    \@gls@link[#1]{#2}{\@glo@text}%
  }%
}%
```

Indicate that this entry has now been used

```
\glsunset{#2}}%
}
```

`\Glspl` behaves in the same way as `\glspl`, except that the first letter of the link text is converted to uppercase (as with `\Gls`, if the first letter has an accent, it will need to be grouped).

`\Glspl`

```
\newcommand*{\Glspl}{\@ifstar\@sGlspl\@Glspl}
```

Define the starred form:

```
\newcommand*{\@sGlspl}[1][]{\@Glspl[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Glspl}[2][]{%
\new@ifnextchar[{\@Glspl@{#1}{#2}}{\@Glspl@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Glspl@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Save options in `\@gls@link@opts` and label in `\@gls@link@label`

```
\def\@gls@link@opts{#1}%
\def\@gls@link@label{#2}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\ifglsused{#2}{\protected@edef\@glo@text{%
\csname gls@\@glo@type @display\endcsname
{\glsentryplural{#2}}{\glsentrydescplural{#2}}{%
\glsentrysymbolplural{#2}}{#3}}}{%
\protected@edef\@glo@text{%
\csname gls@\@glo@type @displayfirst\endcsname
{\glsentryfirstplural{#2}}{\glsentrydescplural{#2}}{%
\glsentrysymbolplural{#2}}{#3}}}%
```

Call \@gls@link If footnote package option has been used, suppress hyperlink for first use.

```
\ifglsused{#2}{%
  \@gls@link[#1]{#2}{%
    \expandafter\makefirstuc\expandafter{\@glo@text}}%
}{%
  \ifthenelse{\equal{\@glo@type}{\acronymtype}\and
    \boolean{glsacrfootnote}}{%
    \@gls@link[#1,hyper=false]{#2}{%
      \expandafter\makefirstuc\expandafter{\@glo@text}}%
  }{%
    \@gls@link[#1]{#2}{%
      \expandafter\makefirstuc\expandafter{\@glo@text}}%
  }%
}%
```

Indicate that this entry has now been used

```
\glsunset{#2}}%
}
```

\GLSpl behaves like \glspl except that all the link text is converted to uppercase.

\GLSpl

```
\newcommand*{\GLSpl}{\@ifstar\@sGLSpl\@GLSpl}
```

Define the starred form:

```
\newcommand*{\@sGLSpl}[1][]{\@GLSpl[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLSpl}[2][]{%
\new@ifnextchar[{\@GLSpl@{#1}{#2}}{\@GLSpl@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLSpl@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Save options in \@gls@link@opts and label in \@gls@link@label

```
\def\@gls@link@opts{#1}%
\def\@gls@link@label{#2}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\ifglsused{#2}{\protected@edef\@glo@text{%
\csname gls@\@glo@type @display\endcsname
{\glsentryplural{#2}}{\glsentrydescplural{#2}}{%
\glsentrysymbolplural{#2}}{#3}}}{%
```

```
\protected@edef\@glo@text{%
\csname gls@\@glo@type @displayfirst\endcsname
{\glsentryfirstplural{#2}}{\glsentrydescplural{#2}}{%
\glsentrysymbolplural{#2}}{#3}}%
```

Call `\@gls@link` If footnote package option has been used, suppress hyperlink for first use.

```
\ifglsused{#2}{%
  \@gls@link[#1]{#2}{\MakeUppercase{\@glo@text}}%
}{%
  \ifthenelse{\equal{\@glo@type}{\acronymtype}\and
    \boolean{glsacrfootnote}}{%
    \@gls@link[#1,hyper=false]{#2}{\MakeUppercase{\@glo@text}}%
  }{%
    \@gls@link[#1]{#2}{\MakeUppercase{\@glo@text}}%
  }%
}%
```

Indicate that this entry has now been used

```
\glsunset{#2}}%
}
```

`\glstext` behaves like `\gls` except it always uses the value given by the text key and it doesn't mark the entry as used.

`\glstext`

```
\newcommand*{\glstext}{\@ifstar\@sglstext\@glstext}
```

Define the starred form:

```
\newcommand*{\@sglstext}[1][]{\@glstext[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@glstext}[2][]{%
\new@ifnextchar[{\@glstext@{#1}{#2}}{\@glstext@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@glstext@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrytext{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\@glo@text#3}%
}%
}
```

`\GLStext` behaves like `\glstext` except the text is converted to uppercase.

`\GLStext`

```
\newcommand*{\GLStext}{\@ifstar\@sGLStext\@GLStext}
```

Define the starred form:

```
\newcommand*{\@sGLStext}[1][]{\@GLStext[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLStext}[2][]{%
\new@ifnextchar[{\@GLStext@{#1}{#2}}{\@GLStext@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLStext@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrytext{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\MakeUppercase{\@glo@text#3}}%
}%
}
```

`\Glstext` behaves like `\glstext` except that the first letter of the text is converted to uppercase.

`\Glstext`

```
\newcommand*{\Glstext}{\@ifstar\@sGlstext\@Glstext}
```

Define the starred form:

```
\newcommand*{\@sGlstext}[1][]{\@Glstext[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Glstext}[2][]{%
\new@ifnextchar[{\@Glstext@{#1}{#2}}{\@Glstext@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Glstext@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrytext{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{%
   \expandafter\makefirstuc\expandafter{\@glo@text}#3}%
}%
}
```

`\glsfirst` behaves like `\gls` except it always uses the value given by the first key and it doesn't mark the entry as used.

`\glsfirst`

```
\newcommand*{\glsfirst}{\@ifstar\@sglsfirst\@glsfirst}
```

Define the starred form:

```
\newcommand*{\@sglsfirst}[1][]{\@glsfirst[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@glsfirst}[2][]{%
\new@ifnextchar[{\@glsfirst@{#1}{#2}}{\@glsfirst@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@glsfirst@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentryfirst{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\@glo@text#3}%
}%
}
```

`\Glsfirst` behaves like `\glsfirst` except it displays the first letter in uppercase.

`\Glsfirst`

```
\newcommand*{\Glsfirst}{\@ifstar\@sGlsfirst\@Glsfirst}
```

Define the starred form:

```
\newcommand*{\@sGlsfirst}[1][]{\@Glsfirst[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Glsfirst}[2][]{%
\new@ifnextchar[{\@Glsfirst@{#1}{#2}}{\@Glsfirst@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Glsfirst@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentryfirst{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{%
   \expandafter\makefirstuc\expandafter{\@glo@text}#3}%
}%
}
```

`\GLSfirst` behaves like `\Glsfirst` except it displays the text in uppercase.

`\GLSfirst`

```
\newcommand*{\GLSfirst}{\@ifstar\@sGLSfirst\@GLSfirst}
```

Define the starred form:

```
\newcommand*{\@sGLSfirst}[1][]{\@GLSfirst[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLSfirst}[2][]{%
\new@ifnextchar[{\@GLSfirst@{#1}{#2}}{\@GLSfirst@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLSfirst@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentryfirst{#2}}%
```

Call \@gls@link

```
\@gls@link[#1]{#2}{\MakeUppercase{\@glo@text#3}}%
}%
}
```

\glsplural behaves like \gls except it always uses the value given by the plural key and it doesn't mark the entry as used.

\glsplural

```
\newcommand*{\glsplural}{\@ifstar\@sglsplural\@glsplural}
```

Define the starred form:

```
\newcommand*{\@sglsplural}[1][]{\@glsplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@glsplural}[2][]{%
\new@ifnextchar[{\@glsplural@{#1}{#2}}{\@glsplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@glsplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\protected@edef\@glo@text{\glsentryplural{#2}}%
```

Call \@gls@link

```
\@gls@link[#1]{#2}{\@glo@text#3}%
}%
}
```

\Glsplural behaves like \glsplural except that the first letter is converted to uppercase.

\Glsplural

```
\newcommand*{\Glsplural}{\@ifstar\@sGlsplural\@Glsplural}
```

Define the starred form:

```
\newcommand*{\@sGlsplural}[1][]{\@Glsplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Glsplural}[2][]{%
\new@ifnextchar[{\@Glsplural@{#1}{#2}}{\@Glsplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Glsplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\protected@edef\@glo@text{\glsentryplural{#2}}%
```

Call \@gls@link

```
\@gls@link[#1]{#2}{%
   \expandafter\makefirstuc\expandafter{\@glo@text}#3}%
}%
}
```

\GLSplural behaves like \glsplural except that the text is converted to uppercase.

\GLSplural

```
\newcommand*{\GLSplural}{\@ifstar\@sGLSplural\@GLSplural}
```

Define the starred form:

```
\newcommand*{\@sGLSplural}[1][]{\@GLSplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLSplural}[2][]{%
\new@ifnextchar[{\@GLSplural@{#1}{#2}}{\@GLSplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLSplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\protected@edef\@glo@text{\glsentryplural{#2}}%
```

Call \@gls@link

```
\@gls@link[#1]{#2}{\MakeUppercase{\@glo@text#3}}%
}%
}
```

\glsfirstplural behaves like \gls except it always uses the value given by the firstplural key and it doesn't mark the entry as used.

\glsfirstplural

```
\newcommand*{\glsfirstplural}{\@ifstar\@sglsfirstplural\@glsfirstplural}
```

Define the starred form:

```
\newcommand*{\@sglsfirstplural}[1][]{\@glsfirstplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@glsfirstplural}[2][]{%
\new@ifnextchar[{\@glsfirstplural@{#1}{#2}}{\@glsfirstplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@glsfirstplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\protected@edef\@glo@text{\glsentryfirstplural{#2}}%
```

Call \@gls@link

```
\@gls@link[#1]{#2}{\@glo@text#3}%
}%
}
```

\Glsfirstplural behaves like \glsfirstplural except that the first letter is converted to uppercase.

\Glsfirstplural

```
\newcommand*{\Glsfirstplural}{\@ifstar\@sGlsfirstplural\@Glsfirstplural}
```

Define the starred form:

```
\newcommand*{\@sGlsfirstplural}[1][]{\@Glsfirstplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Glsfirstplural}[2][]{%
\new@ifnextchar[{\@Glsfirstplural@{#1}{#2}}{\@Glsfirstplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Glsfirstplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentryfirstplural{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{%
  \expandafter\makefirstuc\expandafter{\@glo@text}#3}%
}%
}
```

`\GLSfirstplural` behaves like `\glsfirstplural` except that the link text is converted to uppercase.

`\GLSfirstplural`

```
\newcommand*{\GLSfirstplural}{\@ifstar\@sGLSfirstplural\@GLSfirstplural}
```

Define the starred form:

```
\newcommand*{\@sGLSfirstplural}[1][]{\@GLSfirstplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLSfirstplural}[2][]{%
\new@ifnextchar[{\@GLSfirstplural@{#1}{#2}}{\@GLSfirstplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLSfirstplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentryfirstplural{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\MakeUppercase{\@glo@text#3}}%
}%
}
```

`\glsname` behaves like `\gls` except it always uses the value given by the name key and it doesn't mark the entry as used.

`\glsname`

```
\newcommand*{\glsname}{\@ifstar\@sglsname\@glsname}
```

Define the starred form:

```
\newcommand*{\@sglsname}[1][]{\@glsname[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@glsname}[2][]{%
\new@ifnextchar[{\@glsname@{#1}{#2}}{\@glsname@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@glsname@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentryname{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\@glo@text#3}%
}%
}
```

`\Glsname` behaves like `\glsname` except that the first letter is converted to uppercase.

`\Glsname`

```
\newcommand*{\Glsname}{\@ifstar\@sGlsname\@Glsname}
```

Define the starred form:

```
\newcommand*{\@sGlsname}[1][]{\@Glsname[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Glsname}[2][]{%
\new@ifnextchar[{\@Glsname@{#1}{#2}}{\@Glsname@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Glsname@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentryname{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{%
  \expandafter\makefirstuc\expandafter{\@glo@text}#3}%
}%
}
```

`\GLSname` behaves like `\glsname` except that the link text is converted to uppercase.

`\GLSname`

```
\newcommand*{\GLSname}{\@ifstar\@sGLSname\@GLSname}
```

Define the starred form:

```
\newcommand*{\@sGLSname}[1][]{\@GLSname[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLSname}[2][]{%
\new@ifnextchar[{\@GLSname@{#1}{#2}}{\@GLSname@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLSname@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentryname{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\MakeUppercase{\@glo@text#3}}%
}%
}
```

`\glsdesc` behaves like `\gls` except it always uses the value given by the description key and it doesn't mark the entry as used.

`\glsdesc`

```
\newcommand*{\glsdesc}{\@ifstar\@sglsdesc\@glsdesc}
```

Define the starred form:

```
\newcommand*{\@sglsdesc}[1][]{\@glsdesc[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@glsdesc}[2][]{%
\new@ifnextchar[{\@glsdesc@{#1}{#2}}{\@glsdesc@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@glsdesc@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrydesc{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\@glo@text#3}%
}%
}
```

`\Glsdesc` behaves like `\glsdesc` except that the first letter is converted to uppercase.

`\Glsdesc`

```
\newcommand*{\Glsdesc}{\@ifstar\@sGlsdesc\@Glsdesc}
```

Define the starred form:

```
\newcommand*{\@sGlsdesc}[1][]{\@Glsdesc[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Glsdesc}[2][]{%
\new@ifnextchar[{\@Glsdesc@{#1}{#2}}{\@Glsdesc@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Glsdesc@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrydesc{#2}}%
```

Call \@gls@link

```
\@gls@link[#1]{#2}{%
  \expandafter\makefirstuc\expandafter{\@glo@text}#3}%
}%
}
```

\GLSdesc behaves like \glsdesc except that the link text is converted to uppercase.

\GLSdesc

```
\newcommand*{\GLSdesc}{\@ifstar\@sGLSdesc\@GLSdesc}
```

Define the starred form:

```
\newcommand*{\@sGLSdesc}[1][]{\@GLSdesc[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLSdesc}[2][]{%
\new@ifnextchar[{\@GLSdesc@{#1}{#2}}{\@GLSdesc@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLSdesc@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\protected@edef\@glo@text{\glsentrydesc{#2}}%
```

Call \@gls@link

```
\@gls@link[#1]{#2}{\MakeUppercase{\@glo@text#3}}%
}%
}
```

\glsdescplural behaves like \gls except it always uses the value given by the descriptionplural key and it doesn't mark the entry as used.

\glsdescplural

```
\newcommand*{\glsdescplural}{\@ifstar\@sglsdescplural\@glsdescplural}
```

Define the starred form:

```
\newcommand*{\@sglsdescplural}[1][]{\@glsdescplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@glsdescplural}[2][]{%
\new@ifnextchar[{\@glsdescplural@{#1}{#2}}{\@glsdescplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@glsdescplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\protected@edef\@glo@text{\glsentrydescplural{#2}}%
```

Call \@gls@link

```
\@gls@link[#1]{#2}{\@glo@text#3}%
}%
}
```

\Glsdescplural behaves like \glsdescplural except that the first letter is converted to uppercase.

\Glsdescplural

```
\newcommand*{\Glsdescplural}{\@ifstar\@sGlsdescplural\@Glsdescplural}
```

Define the starred form:

```
\newcommand*{\@sGlsdescplural}[1][]{\@Glsdescplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Glsdescplural}[2][]{%
\new@ifnextchar[{\@Glsdescplural@{#1}{#2}}{\@Glsdescplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Glsdescplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\protected@edef\@glo@text{\glsentrydescplural{#2}}%
```

Call \@gls@link

```
\@gls@link[#1]{#2}{%
  \expandafter\makefirstuc\expandafter{\@glo@text}#3}%
}%
}
```

\GLSdescplural behaves like \glsdescplural except that the link text is converted to uppercase.

\GLSdescplural

```
\newcommand*{\GLSdescplural}{\@ifstar\@sGLSdescplural\@GLSdescplural}
```

Define the starred form:

```
\newcommand*{\@sGLSdescplural}[1][]{\@GLSdescplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLSdescplural}[2][]{%
\new@ifnextchar[{\@GLSdescplural@{#1}{#2}}{\@GLSdescplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLSdescplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in \@glo@text)

```
\protected@edef\@glo@text{\glsentrydescplural{#2}}%
```

Call \@gls@link

```
\@gls@link[#1]{#2}{\MakeUppercase{\@glo@text#3}}%
}%
}
```

\glssymbol behaves like \gls except it always uses the value given by the symbol key and it doesn't mark the entry as used.

\glssymbol

```
\newcommand*{\glssymbol}{\@ifstar\@sglssymbol\@glssymbol}
```

Define the starred form:

```
\newcommand*{\@sglssymbol}[1][]{\@glssymbol[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@glssymbol}[2][]{%
\new@ifnextchar[{\@glssymbol@{#1}{#2}}{\@glssymbol@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@glssymbol@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrysymbol{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\@glo@text#3}%
}%
}
```

`\Glssymbol` behaves like `\glssymbol` except that the first letter is converted to uppercase.

`\Glssymbol`

```
\newcommand*{\Glssymbol}{\@ifstar\@sGlssymbol\@Glssymbol}
```

Define the starred form:

```
\newcommand*{\@sGlssymbol}[1][]{\@Glssymbol[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Glssymbol}[2][]{%
\new@ifnextchar[{\@Glssymbol@{#1}{#2}}{\@Glssymbol@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Glssymbol@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrysymbol{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{%
   \expandafter\makefirstuc\expandafter{\@glo@text}#3}%
}%
}
```

`\GLSsymbol` behaves like `\glssymbol` except that the link text is converted to uppercase.

`\GLSsymbol`

```
\newcommand*{\GLSsymbol}{\@ifstar\@sGLSsymbol\@GLSsymbol}
```

Define the starred form:

```
\newcommand*{\@sGLSsymbol}[1][]{\@GLSsymbol[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLSsymbol}[2][]{%
\new@ifnextchar[{\@GLSsymbol@{#1}{#2}}{\@GLSsymbol@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLSsymbol@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrysymbol{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\MakeUppercase{\@glo@text#3}}%
}%
}
```

`\glssymbolplural` behaves like `\gls` except it always uses the value given by the symbolplural key and it doesn't mark the entry as used.

`\glssymbolplural`

```
\newcommand*{\glssymbolplural}{\@ifstar\@sglssymbolplural\@glssymbolplural}
```

Define the starred form:

```
\newcommand*{\@sglssymbolplural}[1][]{\@glssymbolplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@glssymbolplural}[2][]{%
\new@ifnextchar[{\@glssymbolplural@{#1}{#2}}{\@glssymbolplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@glssymbolplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrysymbolplural{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\@glo@text#3}%
}%
}
```

`\Glssymbolplural` behaves like `\glssymbolplural` except that the first letter is converted to uppercase.

`\Glssymbolplural`

```
\newcommand*{\Glssymbolplural}{\@ifstar\@sGlssymbolplural\@Glssymbolplural}
```

Define the starred form:

```
\newcommand*{\@sGlssymbolplural}[1][]{\@Glssymbolplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@Glssymbolplural}[2][]{%
\new@ifnextchar[{\@Glssymbolplural@{#1}{#2}}{\@Glssymbolplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@Glssymbolplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrysymbolplural{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{%
   \expandafter\makefirstuc\expandafter{\@glo@text}#3}%
}%
}
```

`\GLSsymbolplural` behaves like `\glssymbolplural` except that the link text is converted to uppercase.

`\GLSsymbolplural`

```
\newcommand*{\GLSsymbolplural}{\@ifstar\@sGLSsymbolplural\@GLSsymbolplural}
```

Define the starred form:

```
\newcommand*{\@sGLSsymbolplural}[1][]{\@GLSsymbolplural[hyper=false,#1]}
```

Defined the un-starred form. Need to determine if there is a final optional argument

```
\newcommand*{\@GLSsymbolplural}[2][]{%
\new@ifnextchar[{\@GLSsymbolplural@{#1}{#2}}{\@GLSsymbolplural@{#1}{#2}[]}}
```

Read in the final optional argument:

```
\def\@GLSsymbolplural@#1#2[#3]{%
\glsdoifexists{#2}{\edef\@glo@type{\glsentrytype{#2}}%
```

Determine what the link text should be (this is stored in `\@glo@text`)

```
\protected@edef\@glo@text{\glsentrysymbolplural{#2}}%
```

Call `\@gls@link`

```
\@gls@link[#1]{#2}{\MakeUppercase{\@glo@text#3}}%
}%
}
```

5.9.2 Displaying entry details without adding information to the glossary

These commands merely display entry information without adding entries in the associated file or having hyperlinks.

Get the entry name (as specified by the name key when the entry was defined). The argument is the label associated with the entry. Note that unless you used `name=false` in the sanitize package option you may get unexpected results if the name key contains any commands.

`\glsentryname`

```
\newcommand*{\glsentryname}[1]{\csname glo@#1@name\endcsname}
```

`\Glsentryname`

```
\newcommand*{\Glsentryname}[1]{%
\protected@edef\@glo@text{\csname glo@#1@name\endcsname}%
\expandafter\makefirstuc\expandafter{\@glo@text}}
```

Get the entry description (as specified by the description when the entry was defined). The argument is the label associated with the entry. Note that unless you used description=false in the sanitize package option you may get unexpected results if the description key contained any commands.

\glsentrydesc

```
\newcommand*{\glsentrydesc}[1]{\csname glo@#1@desc\endcsname}
```

\Glsentrydesc

```
\newcommand*{\Glsentrydesc}[1]{%
\protected@edef\@glo@text{\csname glo@#1@desc\endcsname}%
\expandafter\makefirstuc\expandafter{\@glo@text}}
```

Plural form:

\glsentrydescplural

```
\newcommand*{\glsentrydescplural}[1]{%
\csname glo@#1@descplural\endcsname}
```

\Glsentrydescplural

```
\newcommand*{\Glsentrydescplural}[1]{%
\protected@edef\@glo@text{\csname glo@#1@descplural\endcsname}%
\expandafter\makefirstuc\expandafter{\@glo@text}}
```

Get the entry text, as specified by the text key when the entry was defined. The argument is the label associated with the entry:

\glsentrytext

```
\newcommand*{\glsentrytext}[1]{\csname glo@#1@text\endcsname}
```

\Glsentrytext

```
\newcommand*{\Glsentrytext}[1]{%
\protected@edef\@glo@text{\csname glo@#1@text\endcsname}%
\expandafter\makefirstuc\expandafter{\@glo@text}}
```

Get the plural form:

\glsentryplural

```
\newcommand*{\glsentryplural}[1]{\csname glo@#1@plural\endcsname}
```

\Glsentryplural

```
\newcommand*{\Glsentryplural}[1]{%
\protected@edef\@glo@text{\csname glo@#1@plural\endcsname}%
\expandafter\makefirstuc\expandafter{\@glo@text}}
```

Get the symbol associated with this entry. The argument is the label associated with the entry. Note that unless you used symbol=false in the sanitize package option you may get unexpected results if the symbol key contained any commands.

\glsentrysymbol

```
\newcommand*{\glsentrysymbol}[1]{\csname glo@#1@symbol\endcsname}
```

\Glsentrysymbol

```
\newcommand*{\Glsentrysymbol}[1]{%
\protected@edef\@glo@text{\csname glo@#1@symbol\endcsname}%
\expandafter\makefirstuc\expandafter{\@glo@text}}
```

Plural form:

\glsentrysymbolplural

```
\newcommand*{\glsentrysymbolplural}[1]{%
\csname glo@#1@symbolplural\endcsname}
```

\Glsentrysymbolplural

```
\newcommand*{\Glsentrysymbolplural}[1]{%
\protected@edef\@glo@text{\csname glo@#1@symbolplural\endcsname}%
\expandafter\makefirstuc\expandafter{\@glo@text}}
```

Get the entry text to be used when the entry is first used in the document (as specified by the first key when the entry was defined).

\glsentryfirst

```
\newcommand*{\glsentryfirst}[1]{\csname glo@#1@first\endcsname}
```

\Glsentryfirst

```
\newcommand*{\Glsentryfirst}[1]{%
\protected@edef\@glo@text{\csname glo@#1@first\endcsname}%
\expandafter\makefirstuc\expandafter{\@glo@text}}
```

Get the plural form (as specified by the firstplural key when the entry was defined).

\glsentryfirstplural

```
\newcommand*{\glsentryfirstplural}[1]{%
\csname glo@#1@firstpl\endcsname}
```

\Glsentryfirstplural

```
\newcommand*{\Glsentryfirstplural}[1]{%
\protected@edef\@glo@text{\csname glo@#1@firstpl\endcsname}%
\expandafter\makefirstuc\expandafter{\@glo@text}}
```

Display the glossary type with which this entry is associated (as specified by the type key used when the entry was defined)

\glsentrytype

```
\newcommand*{\glsentrytype}[1]{\csname glo@#1@type\endcsname}
```

Display the sort text used for this entry. Note that the sort key is sanitize, so unexpected results may occur if the sort key contained commands.

\glsentrysort

```
\newcommand*{\glsentrysort}[1]{\csname glo@#1@sort\endcsname}
```

5.10 Adding an entry to the glossary without generating text

The following keys are provided for \glsadd and \glsaddall:

```
\define@key{glossadd}{counter}{\def\@glo@counter{#1}}
\define@key{glossadd}{format}{\def\@glo@format{#1}}
```

This key is only used by \glsaddall:

```
\define@key{glossadd}{types}{\def\@glo@type{#1}}
```

\glsadd[⟨*options*⟩]{⟨*label*⟩}

Add a term to the glossary without generating any link text. The optional argument indicates which counter to use, and how to format it (using a key-value list) the second argument is the entry label. Note that ⟨*options*⟩ only has two keys: counter and format (the types key will be ignored).

\glsadd

```
\newcommand*{\glsadd}[2][]{%
\glsdoifexists{#2}{%
\def\@glo@format{glsnumberformat}%
\edef\@glo@counter{\csname glo@#2@counter\endcsname}%
\setkeys{glossadd}{#1}%
\edef\theglsentrycounter{\expandafter\noexpand\csname the\@glo@counter\endcsname}%
\protected@edef\@glo@sort{\csname glo@#2@sort\endcsname}%
\@gls@checkmkidxchars\@glo@sort
\protected@edef\@@glo@name{\csname glo@#2@name\endcsname}%
\@gls@checkmkidxchars\@@glo@name
\protected@edef\@glo@name{\string\glsnamefont{\@@glo@name}}%
\protected@edef\@glo@desc{\csname glo@#2@desc\endcsname}%
\@gls@checkmkidxchars\@glo@desc
\protected@edef\@glo@symbol{\csname glo@#2@symbol\endcsname}%
\@gls@checkmkidxchars\@glo@symbol
\@set@glo@numformat\@glo@numfmt\@glo@counter\@glo@format
\glossary[\csname glo@#2@type\endcsname]{%
\@glo@sort\@gls@actualchar\string\glossaryentryfield
{#2}{\@glo@name}{\@glo@desc}{\@glo@symbol}\@gls@encapchar
\@glo@numfmt}%
}}
```

\glsaddall[⟨*glossary list*⟩]

Add all terms defined for the listed glossaries (without displaying any text). If types key is omitted, apply to all glossary types.

\glsaddall

```
\newcommand*{\glsaddall}[1][]{%
\def\@glo@type{\@glo@types}%
\setkeys{glossadd}{#1}%
\forallglsentries[\@glo@type]{\@glo@entry}{%
\glsadd[#1]{\@glo@entry}}%
}
```

5.11 Creating associated files

The `\writeist` command creates the associated customized `.ist` `makeindex` style file. While defining this command, some characters have their catcodes temporarily changed to ensure they get written to the `.ist` file correctly. The `makeindex` actual character (usually `@`) is redefined to be a `?`, to allow internal commands to be written to the glossary file output file.

The special characters are stored in `\@gls@actualchar`, `\@gls@encapchar`, `\@glsl@levelchar` and `\@gls@quotechar` to make them easier to use later, but don't change these values, because the characters are encoded in the command definitions that are used to escape the special characters (which means that the user no longer needs to worry about `makeindex` special characters).

The symbols and numbers label for group headings are hardwired into the `.ist` file as `glssymbols` and `glsnumbers`, the group titles can be translated (so that `\glssymbolsgroupname` replaces `glssymbols` and `\glsnumbersgroupname` replaces `glsnumbers`) using the command `\glsgetgrouptitle` which is defined in glossary-hypernav. This is done to prevent any problem characters in `\glssymbolsgroupname` and `\glsnumbersgroupname` from breaking hyperlinks.

Some of these lines are too long to fit on the page, but as I have temporarily disabled the comment character, I can't split the lines. If you want to see the code in full, have a look at `glossaries.sty`.

`\writeist`

```
\newwrite\istfile
\bgroup
\catcode`\%12\relax
\catcode`\"12\relax
\catcode`\|12\relax
\catcode`\!12\relax
\catcode`\?12\relax
\gdef\@gls@actualchar{?}
\gdef\@gls@encapchar{|}
\gdef\@gls@levelchar{!}
\gdef\@gls@quotechar{"}
\gdef\writeist{\relax
\protected@write\@auxout{}{\string\@istfilename{\istfilename}}
\openout\istfile=\istfilename
\write\istfile{% makeindex style file created by the glossaries package}
\write\istfile{% for document '\jobname' on \the\year-\the\month-\the\day}
\write\istfile{actual '\@gls@actualchar'}
\write\istfile{encap '\@gls@encapchar'}
\write\istfile{level '\@gls@levelchar'}
\write\istfile{quote '\@gls@quotechar'}
\write\istfile{keyword "\string\\glossaryentry"}
\write\istfile{preamble "\string\\glossarysection[\string\\glossarytoctitle]{\string\\glossary
\write\istfile{postamble "\string\n\string\\end{theglossary}\string\n\string\\glossarypostambl
\write\istfile{group_skip "\string\\glsgroupskip\string\n"}
\write\istfile{item_0 "\string\n"}
\write\istfile{delim_0 "\{\string\\glossaryentrynumbers\{\string\\relax "}
\write\istfile{delim_t "\}\}"}
\write\istfile{delim_n "\string\\delimN "}
\write\istfile{delim_r "\string\\delimR "}
\write\istfile{headings_flag 1}
```

```
\write\istfile{heading_prefix "\string\\glsgroupheading\{"}
\write\istfile{heading_suffix "\}"}
\write\istfile{symhead_positive "glssymbols"}
\write\istfile{numhead_positive "glsnumbers"}
\write\istfile{page_compositor "\glscompositor"}
\noist}
\egroup
```

The command `\noist` will suppress the creation of the `.ist` file (it simply redefines `\writeist` to do nothing). Obviously you need to use this command before `\writeist` to have any effect. Since the `.ist` file should only be created once, `\noist` is called at the end of `\writeist`.

`\noist`

```
\newcommand{\noist}{\let\writeist\relax}
```

`\@makeglossary` is an internal command that takes an argument indicating the glossary type. This command will create the glossary file required by `makeindex` for the given glossary type, using the extension supplied by the ⟨*out-ext*⟩ parameter used in `\newglossary` (and it will also activate the `\glossary` command, and create the customized `.ist` `makeindex` style file).

Note that you can't use `\@makeglossary` for only some of the defined glossaries. You either need to have a `\makeglossary` for all glossaries or none (otherwise you will end up with a situation where TEX is trying to write to a non-existant file). The relevant glossary must be defined prior to using `\@makeglossary`.

`\@makeglossary`

```
\newcommand*{\@makeglossary}[1]{%
\ifglossaryexists{#1}{%
\edef\glo@out{\csname @glotype@#1@out\endcsname}%
\expandafter\newwrite\csname glo@#1@file\endcsname
\edef\@glo@file{\csname glo@#1@file\endcsname}%
\immediate\openout\@glo@file=\jobname.\glo@out
\@gls@renewglossary
\PackageInfo{glossaries}{Writing glossary file \jobname.\glo@out}
\writeist
}{\PackageError{glossaries}{%
Glossary type `#1' not defined}{New glossaries must be defined before
using \string\makeglossary}}}
```

`\makeglossaries` will use `\@makeglossary` for each glossary type that has been defined. New glossaries need to be defined before using `\makeglossary`, so have `\makeglossaries` redefine `\newglossary` to prevent it being used afterwards.

`\makeglossaries`

```
\newcommand*{\makeglossaries}{%
\@for\@glo@type:=\@glo@types\do{%
\ifthenelse{\equal{\@glo@type}{}}{}{%
\@makeglossary{\@glo@type}}}%
\renewcommand*\newglossary[4][]{%
\PackageError{glossaries}{New glossaries
must be created before \string\makeglossaries}{You need
to move \string\makeglossaries\space after all your
```

```
\string\newglossary\space commands}}%
\let\@makeglossary\empty
\let\makeglossary\empty}
```

The \makeglossary command is redefined to be identical to \makeglossaries. (This is done to reinforce the message that you must either use \@makeglossary for all the glossaries or for none of them.)

\makeglossary

```
\let\makeglossary\makeglossaries
```

5.12 Writing information to associated files

The \glossary command is redefined so that it takes an optional argument ⟨*type*⟩ to specify the glossary type (use \glsdefaulttype glossary by default). This shouldn't be used at user level as \glslink sets the correct format. The associated number should be stored in \theglsentrycounter before using \glossary.

\glossary

```
\renewcommand*{\glossary}[1][\glsdefaulttype]{%
\@glossary[#1]}
```

Define internal \@glossary to ignore its argument. This gets redefined in \@makeglossary.

\@glossary

```
\def\@glossary[#1]{\@bsphack\begingroup\@sanitize\@index}
```

This is a convenience command to set \@glossary. It is used by \@makeglossary and then redefined to do nothing, as it only needs to be done once.

\@gls@renewglossary

```
\newcommand{\@gls@renewglossary}{%
\gdef\@glossary[##1]{\@bsphack\begingroup\@wrglossary{##1}}%
\let\@gls@renewglossary\@empty
}
```

The \@wrglossary command is redefined to have two arguments. The first argument is the glossary type, the second argument is the glossary entry (the format of which is set in \glslink).

\@wrglossary

```
\renewcommand*{\@wrglossary}[2]{%
\expandafter\protected@write\csname glo@#1@file\endcsname{}{%
\string\glossaryentry{#2}{\theglsentrycounter}}\endgroup\@esphack}
```

5.13 Displaying the glossary

An individual glossary is displayed in the text using \printglossary[⟨*key-val list*⟩]. If the type key is omitted, the default glossary is displayed. The optional argument can be used to specify an alternative glossary, and can also be used to set the style, title and entry in the table of contents. Available keys are defined below.

\printglossary The TOC title needs to be processed in a different manner to the main title in case the translator and hyperref packages are both being used.

```
\newcommand*{\printglossary}[1][type=\glsdefaulttype]{%
\def\@glo@type{\glsdefaulttype}%
\def\glossarytitle{\csname @glotype@\@glo@type @title\endcsname}%
\def\@glossarystyle{}%
\def\gls@dotoctitle{\glssettoctitle{\@glo@type}}%
\bgroup
\setkeys{printgloss}{#1}%
\gls@dotoctitle
\@glossarystyle
\makeatletter
\@input@{\jobname.\csname @glotype@\@glo@type @in\endcsname}%
\egroup
}
```

The \printglossaries command will do \printglossary for each glossary type that has been defined. It is better to use \printglossaries rather than individual \printglossary commands to ensure that you don't forget any new glossaries you may have created. It also makes it easier to chop and change the value of the acronym package option. However, if you want to list the glossaries in a different order, or if you want to set the title or table of contents entry, or if you want to use different glossary styles for each glossary, you will need to use \printglossary explicitly for each glossary type.

\printglossaries

```
\newcommand*{\printglossaries}{%
\forallglossaries{\@@glo@type}{\printglossary[type=\@@glo@type]}}
```

The keys that can be used in the optional argument to \printglossary are as follows: The type key sets the glossary type.

```
\define@key{printgloss}{type}{\def\@glo@type{#1}}
```

The title key sets the title used in the glossary section header. This overrides the title used in \newglossary.

```
\define@key{printgloss}{title}{\def\glossarytitle{#1}}
```

The toctitle sets the text used for the relevant entry in the table of contents.

```
\define@key{printgloss}{toctitle}{\def\glossarytoctitle{#1}%
\let\gls@dotoctitle\relax
}
```

The style key sets the glossary style (but only for the given glossary).

```
\define@key{printgloss}{style}{%
\@ifundefined{@glsstyle@#1}{\PackageError{glossaries}{Glossary
style `#1' undefined}{}}{%
\def\@glossarystyle{\csname @glsstyle@#1\endcsname}}}
```

The numberedsection key determines if this glossary should be in a numbered section.

```
\define@choicekey{printgloss}{numberedsection}[\val\nr]{%
false,nolabel,autolabel}[nolabel]{%
\ifcase\nr\relax
  \renewcommand*{\@@glossarysecstar}{*}%
  \renewcommand*{\@@glossaryseclabel}{}%
```

```
\or
  \renewcommand*{\@@glossarysecstar}{}%
  \renewcommand*{\@@glossaryseclabel}{}%
\or
  \renewcommand*{\@@glossarysecstar}{}%
  \renewcommand*{\@@glossaryseclabel}{\label{\glsautoprefix\@glo@type}}%
\fi}
```

The nonumberlist key determines if this glossary should have a number list.

```
\define@boolkey{printgloss}[gls]{nonumberlist}[true]{%
\ifglsnonumberlist
   \def\glossaryentrynumbers##1{}%
\else
   \def\glossaryentrynumbers##1{##1}%
\fi}
```

`theglossary` If the theglossary environment has already been defined, a warning will be issued. This environment should be redefined by glossary styles.

```
\@ifundefined{theglossary}{%
\newenvironment{theglossary}{}{}}{%
\PackageWarning{glossaries}{overriding 'theglossary' environment}%
\renewenvironment{theglossary}{}{}}
```

The glossary header is given by `\glossaryheader`. This forms part of the glossary style, and must indicate what should appear immediately after the start of the theglossary environment. (For example, if the glossary uses a tabular-like environment, it may be used to set the header row.) Note that if you don't want a header row, the glossary style must redefine `\glossaryheader` to do nothing.

`\glossaryheader`

```
\newcommand*{\glossaryheader}{}
```

`\glossaryentryfield{`⟨*label*⟩`}{`⟨*name*⟩`}{`⟨*description*⟩`}{`⟨*symbol*⟩`}{`⟨*page-list*⟩`}`

This command governs how each entry row should be formatted in the glossary. Glossary styles need to redefine this command. Most of the predefined styles ignore ⟨*symbol*⟩.

`\glossaryentryfield`

```
\newcommand*{\glossaryentryfield}[5]{%
\@glstarget{glo:#1}{#2} #4 #3. #5\par}
```

Within each glossary, the entries form 28 distinct groups which are determined by the first character of the sort key. There will be a maximum of 28 groups: symbols, numbers, and the 26 alphabetical groups A, ..., Z. The command `\glsgroupskip` specifies what to do between glossary groups. Glossary styles must redefine this command. (Note that `\glsgroupskip` only occurs between groups, not at the start or end of the glossary.)

`\glsgroupskip`

```
\newcommand*{\glsgroupskip}{}
```

Each of the 28 glossary groups described above is preceded by a group heading. This is formatted by the command `\glsgroupheading` which takes one argument which is the *label* assigned to that group (not the title). The corresponding

labels are: glssymbols, glsnumbers, A, ..., Z. Glossary styles must redefined this command. (In between groups, \glsgroupheading comes immediately after \glsgroupskip.)

\glsgroupheading

```
1302 \newcommand*{\glsgroupheading}[1]{}
```

It is possible to "trick" makeindex into treating entries as though they belong to the same group, even if the terms don't start with the same letter, by modifying the sort key. For example, all entries belonging to one group could be defined so that the sort key starts with an a, while entries belonging to another group could be defined so that the sort key starts with a b, and so on. If you want each group to have a heading, you would then need to modify the translation control sequences \glsgetgrouptitle and \glsgetgrouplabel so that the label is translated into the required title (and vice-versa).

\glsgetgrouptitle{⟨*label*⟩}

This command produces the title for the glossary group whose label is given by ⟨*label*⟩. By default, the group labelled glssymbols produces \glssymbolsgroupname, the group labelled glsnumbers produces \glsnumbersgroupname and all the other groups simply produce their label. As mentioned above, the group labels are: glssymbols, glsnumbers, A, ..., Z. If you want to redefine the group titles, you will need to redefine this command.

\glsgetgrouptitle

```
1303 \newcommand*{\glsgetgrouptitle}[1]{%
1304 \@ifundefined{#1groupname}{#1}{\csname #1groupname\endcsname}}
```

\glsgetgrouplabel{⟨*title*⟩}

This command does the reverse to the previous command. The argument is the group title, and it produces the group label. Note that if you redefine \glsgetgrouptitle, you will also need to redefine \glsgetgrouplabel.

\glsgetgrouplabel

```
1305 \newcommand*{\glsgetgrouplabel}[1]{%
1306 \ifthenelse{\equals{#1}{\glssymbolsgroupname}}{glssymbols}{%
1307 \ifthenelse{\equals{#1}{\glsnumbersgroupname}}{glsnumbers}{#1}}}
```

The command \setentrycounter sets the entry's associated counter (required by \glshypernumber etc.) \glslink and \glsadd encode the \glossary argument so that the relevant counter is set prior to the formatting command.

\setentrycounter

```
1308 \newcommand*{\setentrycounter}[1]{\def\glsentrycounter{#1}}
```

The current glossary style can be set using \glossarystyle{⟨*style*⟩}.

\glossarystyle

```
1309 \newcommand*{\glossarystyle}[1]{%
1310 \@ifundefined{@glsstyle@#1}{\PackageError{glossaries}{Glossary
1311 style '#1' undefined}{}}{%
1312 \csname @glsstyle@#1\endcsname}}
```

New glossary styles can be defined using:

\newglossarystyle{⟨*name*⟩}{⟨*definition*⟩}

The ⟨*definition*⟩ argument should redefine theglossary, \glossaryheader, \glsgroupheading, \glossaryentryfield and \glsgroupskip (see subsection 5.16 for the definitions of predefined styles). Glossary styles should not redefine \glossarypreamble and \glossarypostamble, as the user should be able to switch between styles without affecting the pre- and postambles.

\newglossarystyle

```
\newcommand*{\newglossarystyle}[2]{%
\@ifundefined{@glsstyle@#1}{%
\expandafter\def\csname @glsstyle@#1\endcsname{#2}}{%
\PackageError{glossaries}{Glossary style `#1' is already defined}{}}}
```

Glossary entries are encoded so that the second argument to \glossaryentryfield is always specified as \glsnamefont{⟨*name*⟩}. This allows the user to change the font used to display the name term without having to redefine \glossaryentryfield. The default uses the surrounding font, so in the list type styles (which place the name in the optional argument to \item) the name will appear in bold.

\glsnamefont

```
\newcommand*{\glsnamefont}[1]{#1}
```

Each glossary entry has an associated number list (usually page numbers) that indicate where in the document the entry has been used. The format for these number lists can be changed using the format key in commands like \glslink. The default format is given by \glshypernumber. This takes a single argument which may be a single number, a number range or a number list. The number ranges are delimited with \delimR, the number lists are delimited with \delimN.

If the document doesn't have hyperlinks, the numbers can be displayed just as they are, but if the document supports hyperlinks, the numbers should link to the relevant location. This means extracting the individual numbers from the list or ranges. The hyperref package does this with the \hyperpage command, but this is encoded for comma and dash delimiters and only for the page counter, but this code needs to be more general. So I have adapted the code used in the hyperref package.

\glshypernumber

```
\@ifundefined{hyperlink}{%
\def\glshypernumber#1{#1}}{%
\def\glshypernumber#1{%
\@delimR#1\delimR\delimR\\}}
```

\@delimR displays a range of numbers for the counter whose name is given by \@gls@counter (which must be set prior to using \glshypernumber).

\@delimR

```
\def\@delimR#1\delimR #2\delimR #3\\{%
\ifx\\#2\\%
  \@delimN{#1}%
\else
```

```
  \@gls@numberlink{#1}\delimR\@gls@numberlink{#2}%
\fi}
```

`\@delimN` displays a list of individual numbers, instead of a range:

`\@delimN`

```
\def\@delimN#1{\@@delimN#1\delimN \delimN\\}
\def\@@delimN#1\delimN #2\delimN#3\\{%
\ifx\\#3\\%
  \@gls@numberlink{#1}%
\else
  \@gls@numberlink{#1}\delimN\@gls@numberlink{#2}%
\fi
}
```

The following code is modified from hyperref's `\HyInd@pagelink` where the name of the counter being used is given by `\@gls@counter`.

```
\def\@gls@numberlink#1{%
\begingroup
 \toks@={}%
 \@gls@removespaces#1 \@nil
\endgroup}
```

```
\def\@gls@removespaces#1 #2\@nil{%
 \toks@=\expandafter{\the\toks@#1}%
 \ifx\\#2\\%
   \edef\x{\the\toks@}%
   \ifx\x\empty
   \else
     \hyperlink{\glsentrycounter.\the\toks@}{\the\toks@}%
   \fi
 \else
   \@gls@ReturnAfterFi{%
     \@gls@removespaces#2\@nil
   }%
 \fi
}
\long\def\@gls@ReturnAfterFi#1\fi{\fi#1}
```

The following commands will switch to the appropriate font, and create a hyperlink, if hyperlinks are supported. If hyperlinks are not supported, they will just display their argument in the appropriate font.

`\hyperrm`

```
\newcommand*{\hyperrm}[1]{\textrm{\glshypernumber{#1}}}
```

`\hypersf`

```
\newcommand*{\hypersf}[1]{\textsf{\glshypernumber{#1}}}
```

`\hypertt`

```
\newcommand*{\hypertt}[1]{\texttt{\glshypernumber{#1}}}
```

`\hyperbf`

```
\newcommand*{\hyperbf}[1]{\textbf{\glshypernumber{#1}}}
```

\hypermd
```
1360 \newcommand*{\hypermd}[1]{\textmd{\glshypernumber{#1}}}
```
\hyperit
```
1361 \newcommand*{\hyperit}[1]{\textit{\glshypernumber{#1}}}
```
\hypersl
```
1362 \newcommand*{\hypersl}[1]{\textsl{\glshypernumber{#1}}}
```
\hyperup
```
1363 \newcommand*{\hyperup}[1]{\textup{\glshypernumber{#1}}}
```
\hypersc
```
1364 \newcommand*{\hypersc}[1]{\textsc{\glshypernumber{#1}}}
```
\hyperemph
```
1365 \newcommand*{\hyperemph}[1]{\emph{\glshypernumber{#1}}}
```

5.14 Acronyms

If the acronym package option is used, a new glossary called `acronym` is created

```
1366 \ifglsacronym
1367   \newglossary[alg]{acronym}{acr}{acn}{\acronymname}
```

and `\acronymtype` is set to the name of this new glossary.

```
1368   \renewcommand{\acronymtype}{acronym}
```

In the event that the user redefines `\glsdisplay` and `\glsdisplayfirst`, the relevant commands for the new acronym glossary are set to match the format given by `\newacronym`. If you redefine `\newacronym` you may need to set these to something else.

```
1369   \defglsdisplay[acronym]{#1#4}
1370   \defglsdisplayfirst[acronym]{#1#4}
1371 \fi
```

`\newacronym[`⟨*key-val list*⟩`]{`⟨*label*⟩`}{`⟨*abbrev*⟩`}{`⟨*long*⟩`}`

This is a quick way of defining acronyms, all it does is call `\newglossaryentry` with the appropriate values. It sets the glossary type to `\acronymtype` which will be `acronym` if the package option acronym has been used, otherwise it will be the default glossary. Since `\newacronym` merely calls `\newglossaryentry`, the acronym is treated like any other glossary entry.

If you prefer a different format, you can redefine `\newacronym` as required. The optional argument can be used to override any of the settings.

\newacronym
```
1372 \newcommand{\newacronym}[4][]{%
1373 \newglossaryentry{#2}{type=\acronymtype,%
1374 name={#3},description={#4},text={#3},%
1375 descriptionplural={#4\acrpluralsuffix},%
1376 first={#4 (#3)},plural={#3\acrpluralsuffix},%
1377 firstplural={\@glo@descplural\space (\@glo@plural)},%
1378 #1}}
```

Set up some convenient short cuts. These need to be changed if \newacronym is changed (or if the description key is changed).

\acrpluralsuffix Plural suffix used by \newacronym. This just defaults to \glspluralsuffix but is changed to include \textup if the smallcaps option is used, so that the suffix doesn't appear in small caps as it doesn't look right. For example, ABCS looks as though the "s" is part of the acronym, but ABCs looks as though the "s" is a plural suffix. Since the entire text abcs is set in \textsc, \textup is need to cancel it out.

```
\newcommand*{\acrpluralsuffix}{\glspluralsuffix}
```

Make a note of the keys that are used to store the long and short forms:

\glsshortkey

```
\newcommand*{\glsshortkey}{text}
```

\glsshortpluralkey

```
\newcommand*{\glsshortpluralkey}{plural}
```

\glslongkey

```
\newcommand*{\glslongkey}{description}
```

\glslongpluralkey

```
\newcommand*{\glslongpluralkey}{descriptionplural}
```

Using the default definitions, \acrshort is the same as \glstext, which means that it will print the abbreviation.

\acrshort

```
\newcommand*{\acrshort}[2][]{%
\new@ifnextchar[{\@acrshort{#1}{#2}}{\@acrshort{#1}{#2}[]}}
\def\@acrshort#1#2[#3]{\@glstext@{#1}{#2}[#3]}
```

\Acrshort

```
\newcommand*{\Acrshort}[2][]{%
\new@ifnextchar[{\@Acrshort{#1}{#2}}{\@Acrshort{#1}{#2}[]}}
\def\@Acrshort#1#2[#3]{\@Glstext@{#1}{#2}[#3]}
```

\ACRshort

```
\newcommand*{\ACRshort}[2][]{%
\new@ifnextchar[{\@ACRshort{#1}{#2}}{\@ACRshort{#1}{#2}[]}}
\def\@ACRshort#1#2[#3]{\@GLStext@{#1}{#2}[#3]}
```

Plural:

\acrshortpl

```
\newcommand*{\acrshortpl}[2][]{%
\new@ifnextchar[{\@acrshortpl{#1}{#2}}{\@acrshortpl{#1}{#2}[]}}
\def\@acrshortpl#1#2[#3]{\@glsplural@{#1}{#2}[#3]}
```

\Acrshortpl

```
\newcommand*{\Acrshortpl}[2][]{%
\new@ifnextchar[{\@Acrshortpl{#1}{#2}}{\@Acrshortpl{#1}{#2}[]}}
\def\@Acrshortpl#1#2[#3]{\@Glsplural@{#1}{#2}[#3]}
```

\ACRshortpl

```
\newcommand*{\ACRshortpl}[2][]{%
\new@ifnextchar[{\@ACRshortpl{#1}{#2}}{\@ACRshortpl{#1}{#2}[]}}
\def\@ACRshortpl#1#2[#3]{\@GLSplural@{#1}{#2}[#3]}
```

\acrlong is set to \glsdesc, so it will print the long form, unless the description key has been set to something else.

\acrlong

```
\newcommand*{\acrlong}[2][]{%
\new@ifnextchar[{\@acrlong{#1}{#2}}{\@acrlong{#1}{#2}[]}}
\def\@acrlong#1#2[#3]{\@glsdesc@{#1}{#2}[#3]}
```

\Acrlong

```
\newcommand*{\Acrlong}[2][]{%
\new@ifnextchar[{\@Acrlong{#1}{#2}}{\@Acrlong{#1}{#2}[]}}
\def\@Acrlong#1#2[#3]{\@Glsdesc@{#1}{#2}[#3]}
```

\ACRlong

```
\newcommand*{\ACRlong}[2][]{%
\new@ifnextchar[{\@ACRlong{#1}{#2}}{\@ACRlong{#1}{#2}[]}}
\def\@ACRlong#1#2[#3]{\@GLSdesc@{#1}{#2}[#3]}
```

Plural:

\acrlongpl

```
\newcommand*{\acrlongpl}[2][]{%
\new@ifnextchar[{\@acrlongpl{#1}{#2}}{\@acrlongpl{#1}{#2}[]}}
\def\@acrlongpl#1#2[#3]{\@glsdescplural@{#1}{#2}[#3]}
```

\Acrlongpl

```
\newcommand*{\Acrlongpl}[2][]{%
\new@ifnextchar[{\@Acrlongpl{#1}{#2}}{\@Acrlongpl{#1}{#2}[]}}
\def\@Acrlongpl#1#2[#3]{\@Glsdescplural@{#1}{#2}[#3]}
```

\ACRlongpl

```
\newcommand*{\ACRlongpl}[2][]{%
\new@ifnextchar[{\@ACRlongpl{#1}{#2}}{\@ACRlongpl{#1}{#2}[]}}
\def\@ACRlongpl#1#2[#3]{\@GLSdescplural@{#1}{#2}[#3]}
```

\acrfull is set to \glsfirst, so it should display the full form.

\acrfull

```
\newcommand*{\acrfull}[2][]{%
\new@ifnextchar[{\@acrfull{#1}{#2}}{\@acrfull{#1}{#2}[]}}
\def\@acrfull#1#2[#3]{\@glsfirst@{#1}{#2}[#3]}
```

\Acrfull

```
\newcommand*{\Acrfull}[2][]{%
\new@ifnextchar[{\@Acrfull{#1}{#2}}{\@Acrfull{#1}{#2}[]}}
\def\@Acrfull#1#2[#3]{\@Glsfirst@{#1}{#2}[#3]}
```

\ACRfull

```
\newcommand*{\ACRfull}[2][]{%
\new@ifnextchar[{\@ACRfull{#1}{#2}}{\@ACRfull{#1}{#2}[]}}
\def\@ACRfull#1#2[#3]{\@GLSfirst@{#1}{#2}[#3]}
```

Plural:

\acrfullpl

```
\newcommand*{\acrfullpl}[2][]{%
\new@ifnextchar[{\@acrfullpl{#1}{#2}}{\@acrfullpl{#1}{#2}[]}}
\def\@acrfullpl#1#2[#3]{\@glsfirstplural@{#1}{#2}[#3]}
```

\Acrfullpl

```
\newcommand*{\Acrfullpl}[2][]{%
\new@ifnextchar[{\@Acrfullpl{#1}{#2}}{\@Acrfullpl{#1}{#2}[]}}
\def\@Acrfullpl#1#2[#3]{\@Glsfirstplural@{#1}{#2}[#3]}
```

\ACRfullpl

```
\newcommand*{\ACRfullpl}[2][]{%
\new@ifnextchar[{\@ACRfullpl{#1}{#2}}{\@ACRfullpl{#1}{#2}[]}}
\def\@ACRfullpl#1#2[#3]{\@GLSfirstplural@{#1}{#2}[#3]}
```

5.15 Additional predefined acronym styles

\acronymfont This is only used with the additional acronym styles:

```
\newcommand{\acronymfont}[1]{#1}
```

\firstacronymfont This is only used with the additional acronym styles:

```
\newcommand{\firstacronymfont}[1]{\acronymfont{#1}}
```

```
\ifglsacrdescription
```

If a description and footnote are both required, store the long form in the symbol key. Store the short form in text key.

```
  \ifglsacrfootnote
    \renewcommand{\newacronym}[4][]{%
    \newglossaryentry{#2}{type=\acronymtype,%
    name={\acronymfont{#3}},%
    sort={#3},%
    text={#3},%
    plural={#3\acrpluralsuffix},%
    symbol={#4},%
    symbolplural={#4\acrpluralsuffix},%
    #1}}
```

Set up the commands to make a note of the keys to store the long and short forms:

```
  \def\glsshortkey{text}%
  \def\glsshortpluralkey{plural}%
  \def\glslongkey{symbol}%
  \def\glslongpluralkey{symbolplural}%
```

Set up short cuts. Short form:

```
  \def\@acrshort#1#2[#3]{\acronymfont{\@glstext@{#1}{#2}[#3]}}
  \def\@Acrshort#1#2[#3]{\acronymfont{\@Glstext@{#1}{#2}[#3]}}
  \def\@ACRshort#1#2[#3]{\acronymfont{\@GLStext@{#1}{#2}[#3]}}
```

Plural form:

```
\def\@acrshortpl#1#2[#3]{\acronymfont{\@glsplural@{#1}{#2}[#3]}}
\def\@Acrshortpl#1#2[#3]{\acronymfont{\@Glsplural@{#1}{#2}[#3]}}
\def\@ACRshortpl#1#2[#3]{\acronymfont{\@GLSplural@{#1}{#2}[#3]}}
```

Long form:

```
\def\@acrlong#1#2[#3]{\@glssymbol@{#1}{#2}[#3]}
\def\@Acrlong#1#2[#3]{\@Glssymbol@{#1}{#2}[#3]}
\def\@ACRlong#1#2[#3]{\@GLSsymbol@{#1}{#2}[#3]}
```

Plural long form:

```
\def\@acrlongpl#1#2[#3]{\@glssymbolplural@{#1}{#2}[#3]}
\def\@Acrlongpl#1#2[#3]{\@Glssymbolplural@{#1}{#2}[#3]}
\def\@ACRlongpl#1#2[#3]{\@GLSsymbolplural@{#1}{#2}[#3]}
```

Full form:

```
\def\@acrfull#1#2[#3]{\@glssymbol@{#1}{#2}[#3]
  (\acronymfont{\@glstext@{#1}{#2}[#3]})}
\def\@Acrfull#1#2[#3]{\@Glssymbol@{#1}{#2}[#3]
  (\acronymfont{\@glstext@{#1}{#2}[#3]})}
\def\@ACRfull#1#2[#3]{\@GLSsymbol@{#1}{#2}[#3]
  (\acronymfont{\@GLStext@{#1}{#2}[#3]})}
```

Plural full form:

```
\def\@acrfullpl#1#2[#3]{\@glssymbolplural@{#1}{#2}[#3]
  (\acronymfont{\@glsplural@{#1}{#2}[#3]})}
\def\@Acrfullpl#1#2[#3]{\@Glssymbolplural@{#1}{#2}[#3]
  (\acronymfont{\@glsplural@{#1}{#2}[#3]})}
\def\@ACRfullpl#1#2[#3]{\@GLSsymbolplural@{#1}{#2}[#3]
  (\acronymfont{\@GLSplural@{#1}{#2}[#3]})}
```

If footnote package option is specified, set the first use to append the long form (stored in symbol) as a footnote.

```
\defglsdisplayfirst[\acronymtype]{%
  \firstacronymfont{#1}#4\noexpand\protect\noexpand\footnote{%
  \noexpand\protect\noexpand\glslink
    [\@gls@link@opts]{\@gls@link@label}{#3}}}%
\defglsdisplay[\acronymtype]{\acronymfont{#1}#4}%
```

Redefine \acronymfont if small caps required. The plural suffix is set in an upright font so that it remains in normal lower case, otherwise it looks as though it's part of the acronym.

```
\ifglsacrsmallcaps
   \renewcommand*{\acronymfont}[1]{\textsc{#1}}%
   \renewcommand*{\acrpluralsuffix}{%
      \textup{\glspluralsuffix}}%
\else
   \ifglsacrsmaller
      \renewcommand*{\acronymfont}[1]{{\smaller #1}}%
   \fi
\fi
```

Check for package option clash

```
 \ifglsacrdua
    \PackageError{glossaries}{Option clash: `footnote' and `dua'
     can't both be set}{}%
```

```
    \fi
  \else
```

Footnote not required. Should the acronym always be expanded?

```
    \ifglsacrdua
      \ifglsacrsmallcaps
        \PackageError{glossaries}{Option clash: ‘smallcaps’ and ‘dua’
         can’t both be set}{}%
      \else
         \ifglsacrsmaller
            \PackageError{glossaries}{Option clash: ‘smaller’ and ‘dua’
            can’t both be set}{}%
         \fi
      \fi
      \renewcommand{\newacronym}[4][]{%
      \newglossaryentry{#2}{type=\acronymtype,%
      name={\acronymfont#4},%
      sort={#4},
      text={#4},%
      plural={#4\acrpluralsuffix},%
      symbol={#3},%
      symbolplural={#3\acrpluralsuffix},%
      #1}}
```

Set up the commands to make a note of the keys to store the long and short forms:

```
      \def\glsshortkey{symbol}%
      \def\glsshortpluralkey{symbolplural}%
      \def\glslongkey{first}%
      \def\glslongpluralkey{plural}%
```

Set up short cuts. Short form:

```
      \def\@acrshort#1#2[#3]{\acronymfont{\@glssymbol@{#1}{#2}[#3]}}
      \def\@Acrshort#1#2[#3]{\acronymfont{\@Glssymbol@{#1}{#2}[#3]}}
      \def\@ACRshort#1#2[#3]{\acronymfont{\@GLSsymbol@{#1}{#2}[#3]}}
```

Plural short form:

```
      \def\@acrshortpl#1#2[#3]{%
        \acronymfont{\@glssymbolplural@{#1}{#2}[#3]}}
      \def\@Acrshortpl#1#2[#3]{%
        \acronymfont{\@Glssymbolplural@{#1}{#2}[#3]}}
      \def\@ACRshortpl#1#2[#3]{%
        \acronymfont{\@GLSsymbolplural@{#1}{#2}[#3]}}
```

Long form:

```
      \def\@acrlong#1#2[#3]{\@glsfirst@{#1}{#2}[#3]}
      \def\@Acrlong#1#2[#3]{\@Glsfirst@{#1}{#2}[#3]}
      \def\@ACRlong#1#2[#3]{\@GLSfirst@{#1}{#2}[#3]}
```

Plural long form:

```
      \def\@acrlongpl#1#2[#3]{\@glsfirstplural@{#1}{#2}[#3]}
      \def\@Acrlongpl#1#2[#3]{\@Glsfirstplural@{#1}{#2}[#3]}
      \def\@ACRlongpl#1#2[#3]{\@GLSfirstplural@{#1}{#2}[#3]}
```

Full form:

```
      \def\@acrfull#1#2[#3]{\@glsfirst@{#1}{#2}[#3]
        (\acronymfont{\@glssymbol@{#1}{#2}[#3]})}
      \def\@Acrfull#1#2[#3]{\@Glsfirst@{#1}{#2}[#3]
```

```
      (\acronymfont{\@glssymbol@{#1}{#2}[#3]})}
    \def\@ACRfull#1#2[#3]{\@GLSfirst@{#1}{#2}[#3]
      (\acronymfont{\@GLSsymbol@{#1}{#2}[#3]})}
```

Plural full form:

```
    \def\@acrfullpl#1#2[#3]{\@glsfirstplural@{#1}{#2}[#3]
      (\acronymfont{\@glssymbolplural@{#1}{#2}[#3]})}
    \def\@Acrfullpl#1#2[#3]{\@Glsfirstplural@{#1}{#2}[#3]
      (\acronymfont{\@glssymbolplural@{#1}{#2}[#3]})}
    \def\@ACRfullpl#1#2[#3]{\@GLSfirstplural@{#1}{#2}[#3]
      (\acronymfont{\@GLSsymbolplural@{#1}{#2}[#3]})}
```

Set display.

```
    \defglsdisplayfirst[\acronymtype]{#1#4}
    \defglsdisplay[\acronymtype]{#1#4}
  \else
```

(dua is not set.) Store long form in first key and short form in text and symbol key.

```
    \renewcommand{\newacronym}[4][]{%
    \newglossaryentry{#2}{type=\acronymtype,%
    name={\acronymfont{#3}},%
    sort={#3},%
    first={#4},%
    firstplural={#4\acrpluralsuffix},%
    text={#3},%
    plural={#3\acrpluralsuffix},%
    symbol={\@glo@text},%
    symbolplural={\@glo@plural},%
    #1}}
```

Set up the commands to make a note of the keys to store the long and short forms:

```
    \def\glsshortkey{text}%
    \def\glsshortpluralkey{plural}%
    \def\glslongkey{first}%
    \def\glslongpluralkey{firstplural}%
```

Set up short cuts. Short form:

```
    \def\@acrshort#1#2[#3]{\acronymfont{\@glstext@{#1}{#2}[#3]}}
    \def\@Acrshort#1#2[#3]{\acronymfont{\@Glstext@{#1}{#2}[#3]}}
    \def\@ACRshort#1#2[#3]{\acronymfont{\@GLStext@{#1}{#2}[#3]}}
```

Plural short form:

```
    \def\@acrshortpl#1#2[#3]{\acronymfont{\@glsplural@{#1}{#2}[#3]}}
    \def\@Acrshortpl#1#2[#3]{\acronymfont{\@Glsplural@{#1}{#2}[#3]}}
    \def\@ACRshortpl#1#2[#3]{\acronymfont{\@GLSplural@{#1}{#2}[#3]}}
```

Long form:

```
    \def\@acrlong#1#2[#3]{\@glsfirst@{#1}{#2}[#3]}
    \def\@Acrlong#1#2[#3]{\@Glsfirst@{#1}{#2}[#3]}
    \def\@ACRlong#1#2[#3]{\@GLSfirst@{#1}{#2}[#3]}
```

Plural long form:

```
    \def\@acrlongpl#1#2[#3]{\@glsfirstplural@{#1}{#2}[#3]}
    \def\@Acrlongpl#1#2[#3]{\@Glsfirstplural@{#1}{#2}[#3]}
    \def\@ACRlongpl#1#2[#3]{\@GLSfirstplural@{#1}{#2}[#3]}
```

Full form:

```
      \def\@acrfull#1#2[#3]{\@glsfirst@{#1}{#2}[#3]
        (\acronymfont{\@glssymbol@{#1}{#2}[#3]})}
      \def\@Acrfull#1#2[#3]{\@Glsfirst@{#1}{#2}[#3]
        (\acronymfont{\@glssymbol@{#1}{#2}[#3]})}
      \def\@ACRfull#1#2[#3]{\@GLSfirst@{#1}{#2}[#3]
        (\acronymfont{\@GLSsymbol@{#1}{#2}[#3]})}
```

Plural full form:

```
      \def\@acrfullpl#1#2[#3]{\@glsfirstplural@{#1}{#2}[#3]
        (\acronymfont{\@glssymbolplural@{#1}{#2}[#3]})}
      \def\@Acrfullpl#1#2[#3]{\@Glsfirstplural@{#1}{#2}[#3]
        (\acronymfont{\@glssymbolplural@{#1}{#2}[#3]})}
      \def\@ACRfullpl#1#2[#3]{\@GLSfirstplural@{#1}{#2}[#3]
        (\acronymfont{\@GLSsymbolplural@{#1}{#2}[#3]})}
```

Set display.

```
      \defglsdisplayfirst[\acronymtype]{#1#4 (\firstacronymfont{#3})}
      \defglsdisplay[\acronymtype]{\acronymfont{#1}#4}
```

Redefine `\acronymfont` if small caps required. The plural suffix is set in an upright font so that it remains in normal lower case, otherwise it looks as though it's part of the acronym.

```
      \ifglsacrsmallcaps
         \renewcommand{\acronymfont}[1]{\textsc{#1}}
         \renewcommand*{\acrpluralsuffix}{%
            \textup{\glspluralsuffix}}%
      \else
         \ifglsacrsmaller
            \renewcommand*{\acronymfont}[1]{{\smaller #1}}%
         \fi
      \fi
    \fi
  \fi
\else
```

If here, acronyms do not require additional description.

```
  \ifglsacrfootnote
```

If footnote package option is specified, set the first use to append the long form (stored in description) as a footnote. Use the description key to store the long form.

```
    \renewcommand{\newacronym}[4][]{%
    \newglossaryentry{#2}{type=\acronymtype,%
    name={\acronymfont{#3}},%
    sort={#3},%
    text={#3},%
    plural={#3\acrpluralsuffix},%
    description={#4},%
    descriptionplural={#4\acrpluralsuffix},%
    #1}}
```

Set up the commands to make a note of the keys to store the long and short forms:

```
\def\glsshortkey{text}%
\def\glsshortpluralkey{plural}%
\def\glslongkey{description}%
\def\glslongpluralkey{descriptionplural}%
```

Set display

```
\defglsdisplayfirst[\acronymtype]{%
\firstacronymfont{#1}#4\noexpand\protect\noexpand\footnote{%
   \noexpand\protect\noexpand\glslink
     [\@gls@link@opts]{\@gls@link@label}{#2}}}%
\defglsdisplay[\acronymtype]{\acronymfont{#1}#4}%
```

Set up short cuts. Short form:

```
\def\@acrshort#1#2[#3]{\acronymfont{\@glstext@{#1}{#2}[#3]}}
\def\@Acrshort#1#2[#3]{\acronymfont{\@Glstext@{#1}{#2}[#3]}}
\def\@ACRshort#1#2[#3]{\acronymfont{\@GLStext@{#1}{#2}[#3]}}
```

Plural short form:

```
\def\@acrshortpl#1#2[#3]{\acronymfont{\@glsplural@{#1}{#2}[#3]}}
\def\@Acrshortpl#1#2[#3]{\acronymfont{\@Glsplural@{#1}{#2}[#3]}}
\def\@ACRshortpl#1#2[#3]{\acronymfont{\@GLSplural@{#1}{#2}[#3]}}
```

Long form:

```
\def\@acrlong#1#2[#3]{\@glsdesc@{#1}{#2}[#3]}
\def\@Acrlong#1#2[#3]{\@Glsdesc@{#1}{#2}[#3]}
\def\@ACRlong#1#2[#3]{\@GLSdesc@{#1}{#2}[#3]}
```

Plural long form:

```
\def\@acrlongpl#1#2[#3]{\@glsdescplural@{#1}{#2}[#3]}
\def\@Acrlongpl#1#2[#3]{\@Glsdescplural@{#1}{#2}[#3]}
\def\@ACRlongpl#1#2[#3]{\@GLSdescplural@{#1}{#2}[#3]}
```

Full form:

```
\def\@acrfull#1#2[#3]{\@glsdesc@{#1}{#2}[#3]
  (\@glstext@{#1}{#2}[#3])}
\def\@Acrfull#1#2[#3]{\@Glsdesc@{#1}{#2}[#3]
  (\@glstext@{#1}{#2}[#3])}
\def\@ACRfull#1#2[#3]{\@GLSdesc@{#1}{#2}[#3]
  (\@GLStext@{#1}{#2}[#3])}
```

Plural full form:

```
\def\@acrfullpl#1#2[#3]{\@glsdescplural@{#1}{#2}[#3]
  (\@glsplural@{#1}{#2}[#3])}
\def\@Acrfullpl#1#2[#3]{\@Glsdesctext@{#1}{#2}[#3]
  (\@glsplural@{#1}{#2}[#3])}
\def\@ACRfullpl#1#2[#3]{\@GLSdesctext@{#1}{#2}[#3]
  (\@GLSplural@{#1}{#2}[#3])}
```

Redefine `\acronymfont` if small caps required. The plural suffix is set in an upright font so that it remains in normal lower case, otherwise it looks as though it's part of the acronym.

```
\ifglsacrsmallcaps
   \renewcommand*{\acronymfont}[1]{\textsc{#1}}%
   \renewcommand*{\acrpluralsuffix}{%
      \textup{\glspluralsuffix}}%
\else
   \ifglsacrsmaller
      \renewcommand*{\acronymfont}[1]{{\smaller #1}}%
   \fi
\fi
```

Check for option clash

```
    \ifglsacrdua
       \PackageError{glossaries}{Option clash: 'footnote' and 'dua'
       can't both be set}{}%
    \fi
  \else
```

No footnotes required.

```
    \ifthenelse{\boolean{glsacrsmallcaps}\or\boolean{glsacrsmaller}}{%
```

Neither footnote nor description required. Use the symbol key to store the short form and first to store the long form.

```
      \renewcommand{\newacronym}[4][]{%
      \newglossaryentry{#2}{type=\acronymtype,%
      name={\acronymfont{#3}},%
      sort={#3},%
      text={\@glo@symbol},%
      plural={\@glo@symbolplural},%
      first={#4},%
      firstplural={#4\acrpluralsuffix},%
      description={\@glo@first},%
      descriptionplural={\@glo@firstplural},%
      symbol={#3},%
      symbolplural={#3\acrpluralsuffix},%
      #1}}
```

Set up the commands to make a note of the keys to store the long and short forms:

```
      \def\glsshortkey{symbol}%
      \def\glsshortpluralkey{symbolplural}%
      \def\glslongkey{first}%
      \def\glslongpluralkey{firstplural}%
```

Change the display since first only contains long form.

```
      \defglsdisplayfirst[\acronymtype]{#1#4 (\firstacronymfont{#3})}
      \defglsdisplay[\acronymtype]{\acronymfont{#1}#4}
```

Redefine \acronymfont if small caps required. The plural suffix is set in an upright font so that it remains in normal lower case, otherwise it looks as though it's part of the acronym.

```
      \ifglsacrsmallcaps
        \renewcommand*{\acronymfont}[1]{\textsc{#1}}
        \renewcommand*{\acrpluralsuffix}{%
           \textup{\glspluralsuffix}}%
      \else
        \renewcommand*{\acronymfont}[1]{{\smaller #1}}
      \fi
```

Set up short cuts. Short form:

```
      \def\@acrshort#1#2[#3]{\acronymfont{\@glstext@{#1}{#2}[#3]}}
      \def\@Acrshort#1#2[#3]{\acronymfont{\@Glstext@{#1}{#2}[#3]}}
      \def\@ACRshort#1#2[#3]{\acronymfont{\@GLStext@{#1}{#2}[#3]}}
```

Plural short form:

```
      \def\@acrshortpl#1#2[#3]{\acronymfont{\@glsplural@{#1}{#2}[#3]}}
      \def\@Acrshortpl#1#2[#3]{\acronymfont{\@Glsplural@{#1}{#2}[#3]}}
      \def\@ACRshortpl#1#2[#3]{\acronymfont{\@GLSplural@{#1}{#2}[#3]}}
```

Long form:

```
      \def\@acrlong#1#2[#3]{\@glsfirst@{#1}{#2}[#3]}
      \def\@Acrlong#1#2[#3]{\@Glsfirst@{#1}{#2}[#3]}
      \def\@ACRlong#1#2[#3]{\@GLSfirst@{#1}{#2}[#3]}
```

Plural long form:

```
      \def\@acrlongpl#1#2[#3]{\@glsfirstplural@{#1}{#2}[#3]}
      \def\@Acrlongpl#1#2[#3]{\@Glsfirstplural@{#1}{#2}[#3]}
      \def\@ACRlongpl#1#2[#3]{\@GLSfirstplural@{#1}{#2}[#3]}
```

Full form:

```
      \def\@acrfull#1#2[#3]{\@glsfirst@{#1}{#2}[#3]
        (\acronymfont{\@glstext@{#1}{#2}[#3]})}
      \def\@Acrfull#1#2[#3]{\@Glsfirst@{#1}{#2}[#3]
        (\acronymfont{\@glstext@{#1}{#2}[#3]})}
      \def\@ACRfull#1#2[#3]{\@GLSfirst@{#1}{#2}[#3]
        (\acronymfont{\@GLStext@{#1}{#2}[#3]})}
```

Plural full form:

```
      \def\@acrfullpl#1#2[#3]{\@glsfirstplural@{#1}{#2}[#3]
        (\acronymfont{\@glsplural@{#1}{#2}[#3]})}
      \def\@Acrfullpl#1#2[#3]{\@Glsfirstplural@{#1}{#2}[#3]
        (\acronymfont{\@glsplural@{#1}{#2}[#3]})}
      \def\@ACRfullpl#1#2[#3]{\@GLSfirstplural@{#1}{#2}[#3]
        (\acronymfont{\@GLSplural@{#1}{#2}[#3]})}
```

check for option clash

```
      \ifglsacrdua
        \ifglsacrsmallcaps
          \PackageError{glossaries}{Option clash: `smallcaps' and `dua'
          can't both be set}{}%
        \else
          \PackageError{glossaries}{Option clash: `smaller' and `dua'
          can't both be set}{}%
        \fi
      \fi
    }{%
```

Should acronyms always be expanded?

```
      \ifglsacrdua
        \renewcommand{\newacronym}[4][]{%
        \newglossaryentry{#2}{type=\acronymtype,%
        name={#3},%
        text={#4},%
        plural={#4\acrpluralsuffix},%
        description={#4},%
        symbol={#3},%
        symbolplural={#3\acrpluralsuffix},%
        #1}}
```

Set up the commands to make a note of the keys to store the long and short forms:

```
        \def\glsshortkey{symbol}%
        \def\glsshortpluralkey{symbolplural}%
        \def\glslongkey{text}%
        \def\glslongpluralkey{plural}%
```

Set the display

```
\defglsdisplayfirst[\acronymtype]{#1#4}
\defglsdisplay[\acronymtype]{#1#4}
```

Set up short cuts. Short form:

```
\def\@acrshort#1#2[#3]{\@glssymbol@{#1}{#2}[#3]}
\def\@Acrshort#1#2[#3]{\@Glssymbol@{#1}{#2}[#3]}
\def\@ACRshort#1#2[#3]{\@GLSsymbol@{#1}{#2}[#3]}
```

Plural short form:

```
\def\@acrshortpl#1#2[#3]{\@glssymbolplural@{#1}{#2}[#3]}
\def\@Acrshortpl#1#2[#3]{\@Glssymbolplural@{#1}{#2}[#3]}
\def\@ACRshortpl#1#2[#3]{\@GLSsymbolplural@{#1}{#2}[#3]}
```

Long form:

```
\def\@acrlong#1#2[#3]{\@glstext@{#1}{#2}[#3]}
\def\@Acrlong#1#2[#3]{\@Glstext@{#1}{#2}[#3]}
\def\@ACRlong#1#2[#3]{\@GLStext@{#1}{#2}[#3]}
```

Plural long form:

```
\def\@acrlongpl#1#2[#3]{\@glsplural@{#1}{#2}[#3]}
\def\@Acrlongpl#1#2[#3]{\@Glsplural@{#1}{#2}[#3]}
\def\@ACRlongpl#1#2[#3]{\@GLSplural@{#1}{#2}[#3]}
```

Full form:

```
\def\@acrfull#1#2[#3]{\@glstext@{#1}{#2}[#3]
  (\acronymfont{\@glssymbol@{#1}{#2}[#3]})}
\def\@Acrfull#1#2[#3]{\@Glstext@{#1}{#2}[#3]
  (\acronymfont{\@glssymbol@{#1}{#2}[#3]})}
\def\@ACRfull#1#2[#3]{\@GLStext@{#1}{#2}[#3]
  (\acronymfont{\@GLSsymbol@{#1}{#2}[#3]})}
```

Plural full form:

```
\def\@acrfullpl#1#2[#3]{\@glsplural@{#1}{#2}[#3]
  (\acronymfont{\@glssymbolplural@{#1}{#2}[#3]})}
\def\@Acrfullpl#1#2[#3]{\@Glsplural@{#1}{#2}[#3]
  (\acronymfont{\@glssymbolplural@{#1}{#2}[#3]})}
\def\@ACRfullpl#1#2[#3]{\@GLSplural@{#1}{#2}[#3]
  (\acronymfont{\@GLSsymbolplural@{#1}{#2}[#3]})}
    \fi
  }%
 \fi
\fi
```

Define synonyms if required

```
\ifglsacrshortcuts
```

Short form

\acs

```
\let\acs\acrshort
```

First letter uppercase short form

\Acs

```
\let\Acs\Acrshort
```

Plural short form

\acsp

```
1769  \let\acsp\acrshortpl
```

First letter uppercase plural short form

\Acsp

```
1770  \let\Acsp\Acrshortpl
```

Long form

\acl

```
1771  \let\acl\acrlong
```

Plural long form

\aclp

```
1772  \let\aclp\acrlongpl
```

First letter upper case long form

\Acl

```
1773  \let\Acl\Acrlong
```

First letter upper case plural long form

\Aclp

```
1774  \let\Aclp\Acrlongpl
```

Full form

\acf

```
1775  \let\acf\acrfull
```

Plural full form

\acfp

```
1776  \let\acfp\acrfullpl
```

First letter upper case full form

\Acf

```
1777  \let\Acf\Acrfull
```

First letter upper case plural full form

\Acfp

```
1778  \let\Acfp\Acrfullpl
```

Standard form

\ac

```
1779  \let\ac\gls
```

First upper case standard form

\Ac

```
1780  \let\Ac\Gls
```

Standard plural form

\acp

```
\let\acp\glspl
```

Standard first letter upper case plural form

\Acp

```
\let\Acp\Glspl
\fi
```

5.16 Predefined Glossary Styles

The glossaries bundle comes with some predefined glossary styles which are defined in the following packages:

```
\RequirePackage{glossary-hypernav}
\RequirePackage{glossary-list}
\RequirePackage{glossary-long}
\RequirePackage{glossary-super}
```

The default glossary style is set according to the style package option, but can be overridden by \glossarystyle.

```
\glossarystyle{\@glossary@default@style}
```

6 Mfirstuc Documented Code

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{mfirstuc}[2008/06/18 v1.02 (NLCT)]
```

\makefirstuc Syntax:
\makefirstuc{⟨*text*⟩}
Makes the first letter uppercase, but will skip initial control sequences if they are followed by a group and make the first thing in the group uppercase, unless the group is empty. Thus \makefirstuc{abc} will produce: Abc, \makefirstuc{\ae bc} will produce: Æbc, but \makefirstuc{\emph{abc}} will produce *Abc*. This is required by \Gls and \Glspl.

```
\newif\if@glscs
\def\makefirstuc#1{%
\def\gls@argi{#1}%
\ifx\gls@argi\@empty
\else
  \protected@edef\@gls@tmp{\ #1}%
  \@onelevel@sanitize\@gls@tmp
  \expandafter\@gls@checkcs\@gls@tmp\relax\relax
  \if@glscs
    \@gls@getbody #1{}\@nil
    \ifx\@gls@rest\@empty
      \@gls@makefirstuc{#1}%
    \else
      \expandafter\@gls@split\@gls@rest\@nil
      \ifx\@gls@first\@empty
         \@gls@makefirstuc{#1}%
```

```
      \else
         \@gls@body{\expandafter\@gls@makefirstuc\@gls@first}\@gls@rest%
      \fi
    \fi
  \else
    \@gls@makefirstuc{#1}%
  \fi
\fi
}
```

Put first argument in `\@gls@first` and second argument in `\@gls@rest`:

```
\def\@gls@split#1#2\@nil{\def\@gls@first{#1}\def\@gls@rest{#2}}
```

```
\def\@gls@checkcs#1 #2#3\relax{%
\def\@gls@argi{#1}\def\@gls@argii{#2}%
\ifx\@gls@argi\@gls@argii
  \@glscstrue
\else
  \@glscsfalse
\fi
}
```

Make first thing upper case:

```
\def\@gls@makefirstuc#1{\MakeUppercase #1}
```

Get the first grouped argument and stores in `\@gls@body`.

```
\def\@gls@getbody#1#{\def\@gls@body{#1}\@gls@gobbletonil}
```

Scoup up everything to `\@nil` and store in `\@gls@rest`:

```
\def\@gls@gobbletonil#1\@nil{\def\@gls@rest{#1}}
```

`\xmakefirstuc` Expand argument once before applying `\makefirstuc` (added v1.01).

```
\newcommand*{\xmakefirstuc}[1]{%
\expandafter\makefirstuc\expandafter{#1}}
```

7 Glossary Styles

7.1 Glossary hyper-navigation definitions (glossary-hypernav package)

Package Definition:

```
\ProvidesPackage{glossary-hypernav}[2007/07/04 v1.01 (NLCT)]
```

The commands defined in this package are provided to help navigate around the groups within a glossary (see subsection 5.13.) `\printglossary` (and `\printglossaries`) set `\@glo@type` to the label of the current glossary. This is used to create a unique hypertarget in the event of multiple glossaries.

`\glsnavhyperlink[`⟨*type*⟩`]{`⟨*label*⟩`}{`⟨*text*⟩`}`

This command makes ⟨*text*⟩ a hyperlink to the glossary group whose label is given by ⟨*label*⟩ for the glossary given by ⟨*type*⟩.

\glsnavhyperlink

```
\@ifundefined{hyperlink}{%
\newcommand*{\glsnavhyperlink}[3][]{#3}}{%
\newcommand*{\glsnavhyperlink}[3][\@glo@type]{%
\edef\gls@grplabel{#2}\protected@edef\@gls@grptitle{#3}%
\hyperlink{glsn:#1@#2}{#3}}}
```

\glsnavhypertarget[⟨*type*⟩]{⟨*label*⟩}{⟨*text*⟩}

This command makes ⟨*text*⟩ a hypertarget for the glossary group whose label is given by ⟨*label*⟩ in the glossary given by ⟨*type*⟩.

\glsnavhypertarget

```
\@ifundefined{hypertarget}{%
\newcommand*{\glsnavhypertarget}[3][\@glo@type]{%
\protected@write\@auxout{}{\string\@gls@hypergroup{#1}{#2}}%
#3%
\expandafter
\let\expandafter\@gls@list\csname @gls@hypergrouplist@#1\endcsname
\@for\@gls@elem:=\@gls@list\do{%
\ifthenelse{\equal{\@gls@elem}{#2}}{\@endfortrue}{}}%
\if@endfor
\else
  \PackageWarningNoLine{glossaries}{Navigation panel
    for glossary type `#1'^^Jmissing group `#2'}%
  \gdef\gls@hypergrouprerun{%
    \PackageWarningNoLine{glossaries}{Navigation panel
    has changed. Rerun LaTeX}}%
\fi}}{%
\newcommand*{\glsnavhypertarget}[3][\@glo@type]{%
\protected@write\@auxout{}{\string\@gls@hypergroup{#1}{#2}}%
\hypertarget{glsn:#1@#2}{#3}%
\expandafter
\let\expandafter\@gls@list\csname @gls@hypergrouplist@#1\endcsname
\@for\@gls@elem:=\@gls@list\do{%
\ifthenelse{\equal{\@gls@elem}{#2}}{\@endfortrue}{}}%
\if@endfor
\else
  \PackageWarningNoLine{glossaries}{Navigation panel
     for glossary type `#1'^^Jmissing group `#2'}%
  \gdef\gls@hypergrouprerun{%
    \PackageWarningNoLine{glossaries}{Navigation panel
    has changed. Rerun LaTeX}}%
\fi}}
```

\gls@hypergrouprerun Give a warning at the end if rerun required

```
\let\gls@hypergrouprerun\relax
\AtEndDocument{\gls@hypergrouprerun}
```

\@gls@hypergroup This adds to (or creates) the command \@gls@hypergrouplist@⟨*glossary type*⟩ which lists all groups for a given glossary, so that the navigation bar only contains those groups that are present. However it requires at least 2 runs to ensure the information is up-to-date.

```
\newcommand*{\@gls@hypergroup}[2]{%
\@ifundefined{@gls@hypergrouplist@#1}{%
   \expandafter\xdef\csname @gls@hypergrouplist@#1\endcsname{#2}%
}{%
   \expandafter\let\expandafter\@gls@tmp
      \csname @gls@hypergrouplist@#1\endcsname
   \expandafter\xdef\csname @gls@hypergrouplist@#1\endcsname{%
      \@gls@tmp,#2}%
}%
}
```

The `\glsnavigation` command displays a simple glossary group navigation. The symbol and number elements are defined separately, so that they can be suppressed if need be. Note that this command will produce a link to all 28 groups, but some groups may not be defined if there are groups that do not contain any terms, in which case you will get an undefined hyperlink warning. Now for the whole navigation bit:

`\glsnavigation`

```
\newcommand*{\glsnavigation}{%
\def\@gls@between{}%
\@ifundefined{@gls@hypergrouplist@\@glo@type}{%
   \def\@gls@list{}%
}{%
   \expandafter\let\expandafter\@gls@list
      \csname @gls@hypergrouplist@\@glo@type\endcsname
}%
\@for\@gls@tmp:=\@gls@list\do{%
   \@gls@between
   \glsnavhyperlink{\@gls@tmp}{\glsgetgrouptitle{\@gls@tmp}}%
   \let\@gls@between\glshypernavsep%
}%
}
```

`\glshypernavsep` Separator for the hyper navigation bar.

```
\newcommand*{\glshypernavsep}{\space\textbar\space}
```

The `\glssymbolnav` produces a simple navigation set of links for just the symbol and number groups. This used to be used at the start of `\glsnavigation`. This command is no longer needed.

`\glssymbolnav`

```
\newcommand*{\glssymbolnav}{%
\glsnavhyperlink{glssymbols}{\glsgetgrouptitle{glssymbols}} \textbar\
\glsnavhyperlink{glsnumbers}{\glsgetgrouptitle{glsnumbers}} \textbar\
}
```

7.2 List Style (glossary-list package)

The glossary-list package defines glossary styles that use the description environment. Note that since the entry name is placed in the optional argument to the `\item` command, it will appear in a bold font by default.

```
\ProvidesPackage{glossary-list}[2008/02/16 v1.03 (NLCT)]
```

The list glossary style uses the description environment. The group separator \glsgroupskip is redefined as \indexspace which produces a gap between groups. The glossary heading and the group headings do nothing. This is used as the default style for the glossaries package.

```
\newglossarystyle{list}{%
\renewenvironment{theglossary}{\begin{description}}{\end{description}}%
\renewcommand*{\glossaryheader}{}%
\renewcommand*{\glsgroupheading}[1]{}%
\renewcommand*{\glossaryentryfield}[5]{%
\item[\@glstarget{glo:##1}{##2}] ##3\glspostdescription\space ##5}%
\renewcommand*{\glsgroupskip}{\indexspace}}
```

The listgroup style is like the list style, but the glossary groups have headings.

```
\newglossarystyle{listgroup}{%
\glossarystyle{list}%
\renewcommand*{\glsgroupheading}[1]{\item[\glsgetgrouptitle{##1}]}}
```

The listhypergroup style is like the listgroup style, but has a set of links to the groups at the start of the glossary.

```
\newglossarystyle{listhypergroup}{%
\glossarystyle{list}%
\renewcommand*{\glossaryheader}{%
\item[\glsnavigation]}%
\renewcommand*{\glsgroupheading}[1]{%
\item[\glsnavhypertarget{##1}{\glsgetgrouptitle{##1}}]}}
```

The altlist glossary style is like the list style, but places the description on a new line.

```
\newglossarystyle{altlist}{%
\glossarystyle{list}%
\renewcommand*{\glossaryentryfield}[5]{%
\item[\@glstarget{glo:##1}{##2}]\mbox{}\newline ##3\glspostdescription\space ##5}%
}
```

The altlistgroup glossary style is like the altlist style, but the glossary groups have headings.

```
\newglossarystyle{altlistgroup}{%
\glossarystyle{altlist}%
\renewcommand*{\glsgroupheading}[1]{\item[\glsgetgrouptitle{##1}]}}
```

The altlisthypergroup glossary style is like the altlistgroup style, but has a set of links to the groups at the start of the glossary.

```
\newglossarystyle{altlisthypergroup}{%
\glossarystyle{altlist}%
\renewcommand*{\glossaryheader}{%
\item[\glsnavigation]}%
\renewcommand*{\glsgroupheading}[1]{%
\item[\glsnavhypertarget{##1}{\glsgetgrouptitle{##1}}]}}
```

The listdotted glossary style was supplied by Axel Menzel. I've modified it slightly so that the distance from the start of the name to the end of the dotted line is specified by \glslistdottedwidth.

\glslistdottedwidth

```
\newlength\glslistdottedwidth
\setlength{\glslistdottedwidth}{.5\linewidth}
```

Note that this style ignores the page numbers as well as the symbol.

```
\newglossarystyle{listdotted}{%
\glossarystyle{list}%
\renewcommand*{\glossaryentryfield}[5]{%
\item[]\makebox[\glslistdottedwidth][l]{\@glstarget{glo:##1}{##2}%
\unskip\leaders\hbox to 2.9mm{\hss.}\hfill\strut}##3}}
```

7.3 Glossary Styles using longtable (the glossary-long package)

The glossary styles defined in the glossary-long package used the longtable environment in the glossary.

```
\ProvidesPackage{glossary-long}[2007/07/04 v1.01 (NLCT)]
```

Requires the longtable package:

```
\RequirePackage{longtable}
```

This is a length that governs the width of the description column.

`\glsdescwidth`

```
\newlength\glsdescwidth
```

This is a length that governs the width of the page list column.

`\glspagelistwidth`

```
\newlength\glspagelistwidth
```

Default values:

```
\setlength{\glsdescwidth}{0.6\linewidth}
\setlength{\glspagelistwidth}{0.1\linewidth}
```

The long glossary style command which uses the longtable environment:

```
\newglossarystyle{long}{%
\renewenvironment{theglossary}{\begin{longtable}{lp{\glsdescwidth}}}{%
\end{longtable}}%
\renewcommand*{\glossaryheader}{}%
\renewcommand*{\glsgroupheading}[1]{}%
\renewcommand*{\glossaryentryfield}[5]{%
\@glstarget{glo:##1}{##2} & ##3\glspostdescription\space ##5\\}%
\renewcommand*{\glsgroupskip}{ & \\}}
```

The longborder style is like the above, but with horizontal and vertical lines:

```
\newglossarystyle{longborder}{%
\glossarystyle{long}%
\renewenvironment{theglossary}{%
\begin{longtable}{|l|p{\glsdescwidth}|}}{\end{longtable}}%
\renewcommand*{\glossaryheader}{\hline\endhead\hline\endfoot}%
}
```

The longheader style is like the long style but with a header:

```
\newglossarystyle{longheader}{%
\glossarystyle{long}%
\renewcommand*{\glossaryheader}{%
\bfseries \entryname & \bfseries \descriptionname\\
\endhead}}
```

The longheaderborder style is like the long style but with a header and border:

```
\newglossarystyle{longheaderborder}{%
\glossarystyle{longborder}%
\renewcommand*{\glossaryheader}{%
\hline\bfseries \entryname & \bfseries \descriptionname\\\hline
\endhead
\hline\endfoot}}
```

The long3col style is like long but with 3 columns

```
\newglossarystyle{long3col}{%
\renewenvironment{theglossary}{\begin{longtable}{lp{\glsdescwidth}p{\glspagelistwidth}}}{%
\end{longtable}}%
\renewcommand*{\glossaryheader}{}%
\renewcommand*{\glsgroupheading}[1]{}%
\renewcommand*{\glossaryentryfield}[5]{%
\@glstarget{glo:##1}{##2} & ##3 & ##5\\}%
\renewcommand*{\glsgroupskip}{ & &\\}}
```

The long3colborder style is like the long3col style but with a border:

```
\newglossarystyle{long3colborder}{%
\glossarystyle{long3col}%
\renewenvironment{theglossary}{%
\begin{longtable}{|l|p{\glsdescwidth}|p{\glspagelistwidth}|}}{%
\end{longtable}}%
\renewcommand*{\glossaryheader}{\hline\endhead\hline\endfoot}%
}
```

The long3colheader style is like long3col but with a header row:

```
\newglossarystyle{long3colheader}{%
\glossarystyle{long3col}%
\renewcommand*{\glossaryheader}{%
\bfseries\entryname&\bfseries\descriptionname&
\bfseries\pagelistname\\\endhead}%
}
```

The long3colheaderborder style is like the above but with a border

```
\newglossarystyle{long3colheaderborder}{%
\glossarystyle{long3colborder}%
\renewcommand*{\glossaryheader}{%
\hline
\bfseries\entryname&\bfseries\descriptionname&
\bfseries\pagelistname\\\hline\endhead
\hline\endfoot}%
}
```

The long4col style has four columns where the third column contains the value of the associated symbol key.

```
\newglossarystyle{long4col}{%
\renewenvironment{theglossary}{%
\begin{longtable}{llll}}{%
\end{longtable}}%
\renewcommand*{\glossaryheader}{}%
\renewcommand*{\glsgroupheading}[1]{}%
\renewcommand*{\glossaryentryfield}[5]{%
\@glstarget{glo:##1}{##2} & ##3 & ##4 & ##5\\}%
\renewcommand*{\glsgroupskip}{ & & &\\}}
```

The long4colheader style is like long4col but with a header row.

```
\newglossarystyle{long4colheader}{%
\glossarystyle{long4col}%
\renewcommand*{\glossaryheader}{%
\bfseries\entryname&\bfseries\descriptionname&
\bfseries \symbolname&
\bfseries\pagelistname\\\endhead}%
}
```

The long4colborder style is like long4col but with a border.

```
\newglossarystyle{long4colborder}{%
\glossarystyle{long4col}%
\renewenvironment{theglossary}{%
\begin{longtable}{|l|l|l|l|}}{%
\end{longtable}}%
\renewcommand*{\glossaryheader}{\hline\endhead\hline\endfoot}%
}
```

The long4colheaderborder style is like the above but with a border.

```
\newglossarystyle{long4colheaderborder}{%
\glossarystyle{long4col}%
\renewenvironment{theglossary}{%
\begin{longtable}{|l|l|l|l|}}{%
\end{longtable}}%
\renewcommand*{\glossaryheader}{%
\hline\bfseries\entryname&\bfseries\descriptionname&
\bfseries \symbolname&
\bfseries\pagelistname\\\hline\endhead\hline\endfoot}%
}
```

The altlong4col style is like the long4col style but can have multiline descriptions and page lists.

```
\newglossarystyle{altlong4col}{%
\glossarystyle{long4col}%
\renewenvironment{theglossary}{%
\begin{longtable}{lp{\glsdescwidth}lp{\glspagelistwidth}}}{%
\end{longtable}}%
}
```

The altlong4colheader style is like altlong4col but with a header row.

```
\newglossarystyle{altlong4colheader}{%
\glossarystyle{long4colheader}%
\renewenvironment{theglossary}{%
\begin{longtable}{lp{\glsdescwidth}lp{\glspagelistwidth}}}{%
\end{longtable}}%
}
```

The altlong4colborder style is like altlong4col but with a border.

```
\newglossarystyle{altlong4colborder}{%
\glossarystyle{long4colborder}%
\renewenvironment{theglossary}{%
\begin{longtable}{|l|p{\glsdescwidth}|l|p{\glspagewidthlist}|}}{%
\end{longtable}}%
}
```

The altlong4colheaderborder style is like the above but with a header as well as a border.

```
\newglossarystyle{altlong4colheaderborder}{%
\glossarystyle{long4colheaderborder}%
\renewenvironment{theglossary}{%
\begin{longtable}{|l|p{\glsdescwidth}|l|p{\glspagewidthlist}|}}{%
\end{longtable}}%
}
```

7.4 Glossary Styles using supertabular environment (glossary-super package)

The glossary styles defined in the glossary-super package use the supertabular environment.

```
\ProvidesPackage{glossary-super}[2007/07/04 v1.01 (NLCT)]
```

Requires the supertabular package:

```
\RequirePackage{supertabular}
```

The super glossary style uses the supertabular environment (it uses lengths defined in the glossary-long package.)

```
\newglossarystyle{super}{%
\renewenvironment{theglossary}{%
\tablehead{}\tabletail{}%
\begin{supertabular}{lp{\glsdescwidth}}}{%
\end{supertabular}}%
\renewcommand*{\glossaryheader}{}%
\renewcommand*{\glsgroupheading}[1]{}%
\renewcommand*{\glossaryentryfield}[5]{%
\@glstarget{glo:##1}{##2} & ##3\glspostdescription\space ##5\\}%
\renewcommand*{\glsgroupskip}{ & \\}}
```

The superborder style is like the above, but with horizontal and vertical lines:

```
\newglossarystyle{superborder}{%
\glossarystyle{super}%
\renewenvironment{theglossary}{%
\tablehead{\hline}\tabletail{\hline}%
\begin{supertabular}{|l|p{\glsdescwidth}|}}{\end{supertabular}}%
}
```

The superheader style is like the super style, but with a header:

```
\newglossarystyle{superheader}{%
\glossarystyle{super}%
\renewenvironment{theglossary}{%
\tablehead{\bfseries \entryname & \bfseries \descriptionname\\}%
\tabletail{}%
\begin{supertabular}{lp{\glsdescwidth}}}{\end{supertabular}}%
}
```

The superheaderborder style is like the super style but with a header and border:

```
\newglossarystyle{superheaderborder}{%
\glossarystyle{super}%
\renewenvironment{theglossary}{%
\tablehead{\hline\bfseries \entryname & \bfseries \descriptionname\\\hline}%
\tabletail{\hline}
```

```
\begin{supertabular}{|l|p{\glsdescwidth}|}}{\end{supertabular}}%
}
```

The super3col style is like the super style, but with 3 columns:

```
\newglossarystyle{super3col}{%
\renewenvironment{theglossary}{%
\tablehead{}\tabletail{}%
\begin{supertabular}{lp{\glsdescwidth}p{\glspagelistwidth}}}{%
\end{supertabular}}%
\renewcommand*{\glossaryheader}{}%
\renewcommand*{\glsgroupheading}[1]{}%
\renewcommand*{\glossaryentryfield}[5]{%
\@glstarget{glo:##1}{##2} & ##3 & ##5\\}%
\renewcommand*{\glsgroupskip}{ & &\\}}
```

The super3colborder style is like the super3col style, but with a border:

```
\newglossarystyle{super3colborder}{%
\glossarystyle{super3col}%
\renewenvironment{theglossary}{%
\tablehead{\hline}\tabletail{\hline}%
\begin{supertabular}{|l|p{\glsdescwidth}|p{\glspagelistwidth}|}}{%
\end{supertabular}}%
}
```

The super3colheader style is like the super3col style but with a header row:

```
\newglossarystyle{super3colheader}{%
\glossarystyle{super3col}%
\renewenvironment{theglossary}{%
\tablehead{\bfseries\entryname&\bfseries\descriptionname&
\bfseries\pagelistname\\}\tabletail{}%
\begin{supertabular}{lp{\glsdescwidth}p{\glspagelistwidth}}}{%
\end{supertabular}}%
}
```

The super3colheaderborder style is like the super3col style but with a header and border:

```
\newglossarystyle{super3colheaderborder}{%
\glossarystyle{super3colborder}%
\renewenvironment{theglossary}{%
\tablehead{\hline
\bfseries\entryname&\bfseries\descriptionname&
\bfseries\pagelistname\\\hline}%
\tabletail{\hline}%
\begin{supertabular}{|l|p{\glsdescwidth}|p{\glspagelistwidth}|}}{%
\end{supertabular}}%
}
```

The super4col glossary style has four columns, where the third column contains the value of the corresponding symbol key used when that entry was defined.

```
\newglossarystyle{super4col}{%
\renewenvironment{theglossary}{%
\tablehead{}\tabletail{}%
\begin{supertabular}{llll}}{%
\end{supertabular}}%
\renewcommand*{\glossaryheader}{}%
\renewcommand*{\glsgroupheading}[1]{}%
```

```
\renewcommand*{\glossaryentryfield}[5]{%
\@glstarget{glo:##1}{##2} & ##3 & ##4 & ##5\\}%
\renewcommand*{\glsgroupskip}{ & & &\\}}
```

The super4colheader style is like the super4col but with a header row.

```
\newglossarystyle{super4colheader}{%
\glossarystyle{super4col}%
\renewenvironment{theglossary}{%
\tablehead{\bfseries\entryname&\bfseries\descriptionname&
\bfseries\symbolname &
\bfseries\pagelistname\\}\tabletail{}%
\begin{supertabular}{llll}}{%
\end{supertabular}}%
}
```

The super4colborder style is like the super4col but with a border.

```
\newglossarystyle{super4colborder}{%
\glossarystyle{super4col}%
\renewenvironment{theglossary}{%
\tablehead{\hline}\tabletail{\hline}%
\begin{supertabular}{|l|l|l|l|}}{%
\end{supertabular}}%
}
```

The super4colheaderborder style is like the super4col but with a header and border.

```
\newglossarystyle{super4colheaderborder}{%
\glossarystyle{super4col}%
\renewenvironment{theglossary}{%
\tablehead{\hline\bfseries\entryname&\bfseries\descriptionname&
\bfseries\symbolname &
\bfseries\pagelistname\\}\tabletail{\hline}%
\begin{supertabular}{|l|l|l|l|}}{%
\end{supertabular}}%
}
```

The altsuper4col glossary style is like super4col but has provision for multiline descriptions.

```
\newglossarystyle{altsuper4col}{%
\glossarystyle{super4col}%
\renewenvironment{theglossary}{%
\tablehead{}\tabletail{}%
\begin{supertabular}{lp{\glsdescwidth}lp{\glspagelistwidth}}}{%
\end{supertabular}}%
}
```

The altsuper4colheader style is like the altsuper4col but with a header row.

```
\newglossarystyle{altsuper4colheader}{%
\glossarystyle{super4colheader}%
\renewenvironment{theglossary}{%
\tablehead{\bfseries\entryname&\bfseries\descriptionname&
\bfseries\symbolname &
\bfseries\pagelistname\\}\tabletail{}%
\begin{supertabular}{lp{\glsdescwidth}lp{\glspagelistwidth}}}{%
\end{supertabular}}%
}
```

The altsuper4colborder style is like the altsuper4col but with a border.

```
\newglossarystyle{altsuper4colborder}{%
\glossarystyle{super4colborder}%
\renewenvironment{theglossary}{%
\tablehead{\hline}\tabletail{\hline}%
\begin{supertabular}{|l|p{\glsdescwidth}|l|p{\glspagelistwidth}|}}{%
\end{supertabular}}%
}
```

The altsuper4colheaderborder style is like the altsuper4col but with a header and border.

```
\newglossarystyle{altsuper4colheaderborder}{%
\glossarystyle{super4colheaderborder}%
\renewenvironment{theglossary}{%
\tablehead{\hline\bfseries\entryname&\bfseries\descriptionname&
\bfseries\symbolname &
\bfseries\pagelistname\\}\tabletail{\hline}%
\begin{supertabular}{|l|p{\glsdescwidth}|l|p{\glspagelistwidth}|}}{%
\end{supertabular}}%
}
```

8 Multi-Lingual Support

Many thanks to everyone who contributed to the translations both via email and on comp.text.tex.

8.1 Babel Captions

Define babel captions if multi-lingual support is required, but the translator package is not loaded.

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{glossaries-babel}[2008/02/22 v1.0 (NLCT)]
```

English:

```
\addto\captionsenglish{%
\renewcommand*{\glossaryname}{Glossary}%
\renewcommand*{\acronymname}{Acronyms}%
\renewcommand*{\entryname}{Notation}%
\renewcommand*{\descriptionname}{Description}%
\renewcommand*{\symbolname}{Symbol}%
\renewcommand*{\pagelistname}{Page List}%
\renewcommand*{\glssymbolsgroupname}{Symbols}%
\renewcommand*{\glsnumbersgroupname}{Numbers}%
}%
```

German (quite a few variations were suggested for German; I settled on the following):

```
\addto\captionsgerman{%
\renewcommand*{\glossaryname}{Glossar}%
\renewcommand*{\acronymname}{Akronyme}%
\renewcommand*{\entryname}{Bezeichnung}%
\renewcommand*{\descriptionname}{Beschreibung}%
\renewcommand*{\symbolname}{Symbol}%
```

```
\renewcommand*{\pagelistname}{Seiten}%
\renewcommand*{\glssymbolsgroupname}{Symbole}%
\renewcommand*{\glsnumbersgroupname}{Zahlen}}
```

ngerman is identical to German:

```
\addto\captionsngerman{%
\renewcommand*{\glossaryname}{Glossar}%
\renewcommand*{\acronymname}{Akronyme}%
\renewcommand*{\entryname}{Bezeichnung}%
\renewcommand*{\descriptionname}{Beschreibung}%
\renewcommand*{\symbolname}{Symbol}%
\renewcommand*{\pagelistname}{Seiten}%
\renewcommand*{\glssymbolsgroupname}{Symbole}%
\renewcommand*{\glsnumbersgroupname}{Zahlen}}
```

Italian:

```
\addto\captionsitalian{%
\renewcommand*{\glossaryname}{Glossario}%
\renewcommand*{\acronymname}{Acronimi}%
\renewcommand*{\entryname}{Nomenclatura}%
\renewcommand*{\descriptionname}{Descrizione}%
\renewcommand*{\symbolname}{Simbolo}%
\renewcommand*{\pagelistname}{Elenco delle pagine}%
\renewcommand*{\glssymbolsgroupname}{Simboli}%
\renewcommand*{\glsnumbersgroupname}{Numeri}}
```

Dutch:

```
\addto\captionsdutch{%
\renewcommand*{\glossaryname}{Woordenlijst}%
\renewcommand*{\acronymname}{Acroniemen}%
\renewcommand*{\entryname}{Benaming}%
\renewcommand*{\descriptionname}{Beschrijving}%
\renewcommand*{\symbolname}{Symbool}%
\renewcommand*{\pagelistname}{Pagina's}%
\renewcommand*{\glssymbolsgroupname}{Symbolen}%
\renewcommand*{\glsnumbersgroupname}{Cijfers}}
```

Spanish:

```
\addto\captionsspanish{%
\renewcommand*{\glossaryname}{Glosario}%
\renewcommand*{\acronymname}{Siglas}%
\renewcommand*{\entryname}{Entrada}%
\renewcommand*{\descriptionname}{Descripci\'on}%
\renewcommand*{\symbolname}{S\'{\i}mbolo}%
\renewcommand*{\pagelistname}{Lista de p\'aginas}%
\renewcommand*{\glssymbolsgroupname}{S\'{\i}mbolos}%
\renewcommand*{\glsnumbersgroupname}{N\'umeros}}
```

French:

```
\addto\captionsfrench{%
\renewcommand*{\glossaryname}{Glossaire}%
\renewcommand*{\acronymname}{Acronymes}%
\renewcommand*{\entryname}{Terme}%
\renewcommand*{\descriptionname}{Description}%
\renewcommand*{\symbolname}{Symbole}%
\renewcommand*{\pagelistname}{Pages}%
```

```
\renewcommand*{\glssymbolsgroupname}{Symboles}%
\renewcommand*{\glsnumbersgroupname}{Nombres}}
```

Danish:

```
\addto\captionsdanish{%
\renewcommand*{\glossaryname}{Ordliste}%
\renewcommand*{\acronymname}{Akronymer}%
\renewcommand*{\entryname}{Symbolforklaring}%
\renewcommand*{\descriptionname}{Beskrivelse}%
\renewcommand*{\symbolname}{Symbol}%
\renewcommand*{\pagelistname}{Side}%
\renewcommand*{\glssymbolsgroupname}{Symboler}%
\renewcommand*{\glsnumbersgroupname}{Tal}}
```

Irish:

```
\addto\captionsirish{%
\renewcommand*{\glossaryname}{Gluais}%
\renewcommand*{\acronymname}{Acrainmneacha}%
```

wasn't sure whether to go for Nóta (Note), Ciall ('Meaning', 'sense') or Brí ('Meaning'). In the end I chose Ciall.

```
\renewcommand*{\entryname}{Ciall}%
\renewcommand*{\descriptionname}{Tuairisc}%
```

Again, not sure whether to use Comhartha/Comharthaí or Siombail/Siombaile, so have chosen the former.

```
\renewcommand*{\symbolname}{Comhartha}%
\renewcommand*{\glssymbolsgroupname}{Comhartha\'{\i}}%
\renewcommand*{\pagelistname}{Leathanaigh}%
\renewcommand*{\glsnumbersgroupname}{Uimhreacha}}
```

Hungarian:

```
\addto\captionsmagyar{%
\renewcommand*{\glossaryname}{Sz\'ojegyz\'ek}%
\renewcommand*{\acronymname}{Bet\H uszavak}%
\renewcommand*{\entryname}{Kifejez\'es}%
\renewcommand*{\descriptionname}{Magyar\'azat}%
\renewcommand*{\symbolname}{Jel\"ol\'es}%
\renewcommand*{\pagelistname}{Oldalsz\'am}%
\renewcommand*{\glssymbolsgroupname}{Jelek}%
\renewcommand*{\glsnumbersgroupname}{Sz\'amjegyek}%
}
```

Polish

```
\addto\captionspolish{%
\renewcommand*{\glossaryname}{S{\l}ownik termin\'ow}%
\renewcommand*{\acronymname}{Skr\'ot}%
\renewcommand*{\entryname}{Termin}%
\renewcommand*{\descriptionname}{Opis}%
\renewcommand*{\symbolname}{Symbol}%
\renewcommand*{\pagelistname}{Strony}%
\renewcommand*{\glssymbolsgroupname}{Symbole}%
\renewcommand*{\glsnumbersgroupname}{Liczby}}
```

8.2 Danish Dictionary

This is a dictonary file provided for use with the translator package.

```
\ProvidesDictionary{glossaries-dictionary}{Danish}
```

Provide Danish translations:

```
\providetranslation{Glossary}{Ordliste}
\providetranslation{Acronyms}{Akronymer}
\providetranslation{Notation (glossaries)}{Symbolforklaring}
\providetranslation{Description (glossaries)}{Beskrivelse}
\providetranslation{Symbol (glossaries)}{Symbol}
\providetranslation{Page List (glossaries)}{Side}
\providetranslation{Symbols (glossaries)}{Symboler}
\providetranslation{Numbers (glossaries)}{Tal}
```

8.3 Dutch Dictionary

This is a dictonary file provided for use with the translator package.

```
\ProvidesDictionary{glossaries-dictionary}{Dutch}
```

Provide Dutch translations:

```
\providetranslation{Glossary}{Woordenlijst}
\providetranslation{Acronyms}{Acroniemen}
\providetranslation{Notation (glossaries)}{Benaming}
\providetranslation{Description (glossaries)}{Beschrijving}
\providetranslation{Symbol (glossaries)}{Symbool}
\providetranslation{Page List (glossaries)}{Pagina's}
\providetranslation{Symbols (glossaries)}{Symbolen}
\providetranslation{Numbers (glossaries)}{Cijfers}
```

8.4 English Dictionary

This is a dictonary file provided for use with the translator package.

```
\ProvidesDictionary{glossaries-dictionary}{English}
```

Provide English translations:

```
\providetranslation{Glossary}{Glossary}
\providetranslation{Acronyms}{Acronyms}
\providetranslation{Notation (glossaries)}{Notation}
\providetranslation{Description (glossaries)}{Description}
\providetranslation{Symbol (glossaries)}{Symbol}
\providetranslation{Page List (glossaries)}{Page List}
\providetranslation{Symbols (glossaries)}{Symbols}
\providetranslation{Numbers (glossaries)}{Numbers}
```

8.5 French Dictionary

This is a dictonary file provided for use with the translator package.

```
\ProvidesDictionary{glossaries-dictionary}{French}
```

Provide French translations:

```
\providetranslation{Glossary}{Glossaire}
\providetranslation{Acronyms}{Acronymes}
\providetranslation{Notation (glossaries)}{Terme}
```

```
\providetranslation{Description (glossaries)}{Description}
\providetranslation{Symbol (glossaries)}{Symbole}
\providetranslation{Page List (glossaries)}{Pages}
\providetranslation{Symbols (glossaries)}{Symboles}
\providetranslation{Numbers (glossaries)}{Nombres}
```

8.6 German Dictionary

This is a dictonary file provided for use with the translator package.

```
\ProvidesDictionary{glossaries-dictionary}{German}
```

Provide German translations (quite a few variations were suggested for German; I settled on the following):

```
\providetranslation{Glossary}{Glossar}
\providetranslation{Acronyms}{Akronyme}
\providetranslation{Notation (glossaries)}{Bezeichnung}
\providetranslation{Description (glossaries)}{Beschreibung}
\providetranslation{Symbol (glossaries)}{Symbol}
\providetranslation{Page List (glossaries)}{Seiten}
\providetranslation{Symbols (glossaries)}{Symbole}
\providetranslation{Numbers (glossaries)}{Zahlen}
```

8.7 Irish Dictionary

This is a dictonary file provided for use with the translator package.

```
\ProvidesDictionary{glossaries-dictionary}{Irish}
```

Provide Irish translations:

```
\providetranslation{Glossary}{Gluais}
\providetranslation{Acronyms}{Acrainmneacha}
\providetranslation{Notation (glossaries)}{Ciall}
\providetranslation{Description (glossaries)}{Tuairisc}
\providetranslation{Symbol (glossaries)}{Comhartha}
\providetranslation{Page List (glossaries)}{Leathanaigh}
\providetranslation{Symbols (glossaries)}{Comhartha\'{\i}}
\providetranslation{Numbers (glossaries)}{Uimhreacha}
```

8.8 Italian Dictionary

This is a dictonary file provided for use with the translator package.

```
\ProvidesDictionary{glossaries-dictionary}{Italian}
```

Provide Italian translations:

```
\providetranslation{Glossary}{Glossario}
\providetranslation{Acronyms}{Acronimi}
\providetranslation{Notation (glossaries)}{Nomenclatura}
\providetranslation{Description (glossaries)}{Descrizione}
\providetranslation{Symbol (glossaries)}{Simbolo}
\providetranslation{Page List (glossaries)}{Elenco delle pagine}
\providetranslation{Symbols (glossaries)}{Simboli}
\providetranslation{Numbers (glossaries)}{Numeri}
```

8.9 Magyar Dictionary

This is a dictonary file provided for use with the translator package.

```
\ProvidesDictionary{glossaries-dictionary}{Magyar}
```

Provide translations:

```
\providetranslation{Glossary}{Sz\'ojegyz\'ek}
\providetranslation{Acronyms}{Bet\H uszavak}
\providetranslation{Notation (glossaries)}{Kifejez\'es}
\providetranslation{Description (glossaries)}{Magyar\'azat}
\providetranslation{Symbol (glossaries)}{Jel\"ol\'es}
\providetranslation{Page List (glossaries)}{Oldalsz\'am}
\providetranslation{Symbols (glossaries)}{Jelek}
\providetranslation{Numbers (glossaries)}{Sz\'amjegyek}
```

8.10 Polish Dictionary

This is a dictonary file provided for use with the translator package.

```
\ProvidesDictionary{glossaries-dictionary}{Polish}
```

Provide Polish translations:

```
\providetranslation{Glossary}{S{\l}ownik termin\'ow}
\providetranslation{Acronyms}{Skr\'ot}
\providetranslation{Notation (glossaries)}{Termin}
\providetranslation{Description (glossaries)}{Opis}
\providetranslation{Symbol (glossaries)}{Symbol}
\providetranslation{Page List (glossaries)}{Strony}
\providetranslation{Symbols (glossaries)}{Symbole}
\providetranslation{Numbers (glossaries)}{Liczby}
```

8.11 Spanish Dictionary

This is a dictonary file provided for use with the translator package.

```
\ProvidesDictionary{glossaries-dictionary}{Spanish}
```

Provide Spanish translations:

```
\providetranslation{Glossary}{Glosario}
\providetranslation{Acronyms}{Siglas}
\providetranslation{Notation (glossaries)}{Entrada}
\providetranslation{Description (glossaries)}{Descripci\'on}
\providetranslation{Symbol (glossaries)}{S\'{\i}mbolo}
\providetranslation{Page List (glossaries)}{Lista de p\'aginas}
\providetranslation{Symbols (glossaries)}{S\'{\i}mbolos}
\providetranslation{Numbers (glossaries)}{N\'umeros}
```

Index