The `varioref` package[*]

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Bug reports can be opened (category `tools`) at
https://latex-project.org/bugs.html.

Abstract

This package defines the commands `\vref`, `\vpageref`, `\vrefrange`, and `\vpagerefrange` for LaTeX 2ε. `\vref` is similar to `\ref` but adds an additional page reference, like 'on the facing page' or 'on page 27' whenever the corresponding `\label` is not on the same page. The command `\vpageref` is a variation to `\pageref` with a similar functionality. The `\v...range` commands take two labels as arguments and produce strings which depend on whether or not these labels fall onto a single page or on different pages. Generated strings are customizable so that these commands are usable with various languages.

Contents

1 Introduction

In many cases it is helpful when referring to a figure or table to put both a `\ref` and a `\pageref` command into the document especially when there are one or more pages between the reference and the object. Therefore some people use a command like

```
\newcommand{\fullref}[1]{\ref{#1} on page~\pageref{#1}}
```

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[*]This file has version number v1.6c, last revised 2020/01/23.

which reduces the number of key strokes, necessary to make such a complete reference. But since one never knows where the referenced object finally falls, using such a device may result in a page reference to the current page which is disturbing and therefore should be avoided.

2   Loading the package

The suggested way of loading the package these days is by *always* using the package option `nospace`, i.e.,

```
\usepackage[nospace]{varioref}
```

See below for an explanation of why this is needed. There are some other options that you may want to use additionally; they are explained on page 7.

3   The user interface

`\vref`   The implementation of `\vref` below produces only a `\ref` when reference and `\label` are on the same page. It will additionally produce one of the strings 'on the facing page', 'on the preceding page', or 'on the following page', if label and reference differ by one and it will produce both `\ref` and `\pageref` when the difference is larger. The word 'facing' is used when label and reference both fall onto a double spread. However, if a special page numbering scheme is used instead of the usual arabic numbering (e.g., `\pagenumbering{roman}`) then there will be no distinction between one or many pages off.

`\vpageref`   Sometimes one wants to refer only to page number and again such a reference should normally be suppressed if we are referring to the current page. For this purpose the package defines the `\vpageref` command. It will produce the same strings as `\vref` except that it doesn't start with the `\ref`. A further difference is that it will produce the string that is saved in `\reftextcurrent` if label and reference fall onto the same page (and no optional argument is used). By defining `\reftextcurrent` to produce "on this page" or something similar, we can avoid that

```
... see the example \vpageref{ex:foo} which shows ...
```

comes out as "... see the example which shows ...", which could be misleading.

A space in front of `\vpageref` it will be ignored if the command doesn't produce any text at all.

But in fact `\vpageref` allows even more control. If has two optional arguments. With the first one, one can specify the text that should be used if label and reference fall on the same page. This is very helpful if both are near to each other, so that they may or may not be separated by a page break. In such a case we usually know (!) whether the reference is before or after the label so that we can say something like

```
... see the example \vpageref[above]{ex:foo} which shows ...
```

which will then come out as "... see the example above which shows ..." if we are still on the same page, but as "... see the example on the page before which shows ..." (or something similar depending on the settings of the

`\reftext..before` commands) when there was a page break in the meantime. One warning however, if you use `\vpageref` with the optional argument to refer to a figure or table, keep in mind that depending on the float placement parameters the float may show up on top of the current page and therefore before the reference even if it came after it in the source file.

But maybe you prefer to say "... see the above example" if example and reference fall onto the same page, i.e., reverse the word order. In fact, in some languages the word order automatically changes in that case. To allow for this variation the second optional argument can be used. It specifies the text preceding the generated reference if object and reference do not fall onto the same page. Thus one would write

```
... see the \vpageref[above example][example]{ex:foo}
    which shows ...
```

to achieve the desired effect.

`\vrefrange`   This command is similar to `\vref` but it takes two mandatory arguments denoting a range to refer to (e.g., a sequences of figures or a sequence of equations, etc.). So if `fig:a` is your first figure in the sequence and `fig:c` your last you can write

```
... see figures \vrefrange{fig:a}{fig:c} ...
```

which would then be formatted as

... see figures 3.4 to 3.6 on pages 23–24 ...

or, if they happen to all fall onto the next page, as

... see figures 3.4 to 3.6 on the following page ...

i.e., the command is deciding what to say depending on where the two labels are placed in relation to each other; it is essentially implemented using `\vpagerefrange` described below. The optional argument the command may take is the text to use in case both labels are placed on the current page.

`\vpagerefrange`   This command is similar to `\vpageref` but takes two mandatory arguments which are two labels denoting a range. If both labels fall onto the same page, the command acts exactly like `\vpageref` (with a single label), otherwise it produces something like "on pages 15–18" (see customization possibilities below). The optional argument it may take is the text to use in case both labels are placed on the current page.

`\vrefpagenum`   This macro is provided to allow the user to write their own small commands which implement functions similar to those provided by the two previous commands. It takes two arguments: the second is a label (i.e., as used in `\label` or `\ref`) and the first is an arbitrary command name (make sure you use our own) that receives the page number related to this label. So if you have two (or more) labels you could retrieve their page numbers, compare them and then decide what to print. For example, the following not very serious definition (also using the `ifthen` package)

```
\newcommand\amusingversion[2]{the definition%
  \vrefpagenum\firstnum{#1}%
  \vrefpagenum\secondnum{#2}%
  \ifthenelse{\equal\firstnum\secondnum}%
```

```
      {s of \ref{#1} and \ref{#2} \vpageref{#1}}%
      { of \ref{#1} \vpageref{#1} and of \ref{#2} \vpageref{#2}}%
 }

 ...\amusingversion{foo}{bar}
```

will print something like

> . . . the definitions of 3 and 4 on the previous page

in the case both labels are on the same page but something like

> . . . the definition of 3 on the next page and of 4 on page 13

in case they are on different pages.

`\vpagerefcompare`   For this kind of application the package also provides **\vpagerefcompare** as a command that takes four argument: two labels for comparison and a ⟨*true*⟩ and ⟨*false*⟩ argument. One of them is executed depending on whether the two labels are on the same page or on different pages. With its help the above definition could be shortened to

```
\newcommand\amusingversion[2]{the definition%
  \vpagerefcompare{#1}{#2}%
    {s of \ref{#1} and \ref{#2} \vpageref{#1}}%
    { of \ref{#1} \vpageref{#1} and of \ref{#2} \vpageref{#2}}%
 }
```

and you don't have to load the `ifthen` package any longer to make it work.

`\vpagerefnearby`   Another command for conditional processing is **\vpagerefnearby**. It takes three arguments: a label and a ⟨*true*⟩ and ⟨*false*⟩ argument. It compares the page reference to the label with the current page number and if both are arabic number and only differ by ± 1 the ⟨*true*⟩ argument is executed otherwise the ⟨*false*⟩ argument. In other words it tells you if a **\vpageref** to the label would result in a textual reference to the previous, current or next page.[1]

If you don't use the `nospace` option the user commands **\vref**, **\vpageref**, and **\vpagerefrange** all work by first removing any space on their left and then inserting some space of their own (**\vref**, for example, a nonbreakable space). That seemed like a good idea back then, but it has the disadvantage that you can't use these macros in situations where you definitely do not want any space before the generated text. E.g., in situations like (**\vref{foo} ...**) you end up with a space after the open parenthesis.

`\vref*`
`\vpageref*`
`\vpagerefrange*`   Since it was too late to change the default in 2001 I added star versions of the macros which do not add any space before the generated text (they do nevertheless remove space at the left).

However, that too has problems (one is that `hyperref` introduced the star forms as a means to generating references without hyperlinks (which is clearly the more important application). So these days I recommend to always call the package with the option `nospace` which prevents `varioref` from messing with the space in front. Of course you are then responsible to always add it when necessary, but that does make the source more readable so it is a good thing. This also has

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[1]There is also a **\vpagerefcomparenearby** but this is only meant for package writers, so it is only documented in the implementation section.

the advantage that the star forms are now unnecessary again and can be used in the way implemeented by `hyperref` if both packages are used together.

In fact it would be much nicer to make that the default but the package has been used by many people for so many years that changing the default would break way to many older documents.

\labelformat — A reference via `\ref` produces by default the data associated with the corresponding `\label` command (typically a number); any additional formatting has to be provided by the user. With `\labelformat` it is possible to declare scuch formatting for each "reference" counter, e.g.,

```
\labelformat{section}{section~#1}
\labelformat{equation}{equation~(#1)}}
```

\Vref
\Ref — A side effect of using `\labelformat` is that, depending on the defined formatting, it becomes impossible to use `\ref` at the beginning of a sentence (if its replacement text starts with a lowercase letter). For that reason `varioref` provided the commands `\Ref` and `\Vref`. They behave like `\ref` and `\vref` except that they uppercase the first token of the generated string. These days `\labelformat` and `\Ref` are already provided by the LaTeX kernel; only `\Vref` is still defined within the `varioref` package.

<div style="border:1px solid">Changed in 2019</div>

To make `\Ref` or `\Vref` work properly the very first token in the second argument of `\labelformat` has to be a simple ASCII or UTF-8 letter, otherwise the capitalization will fail or worse, you will end up with some error messages. If you actually need something more complicated in this place (e.g., an accented letter not written as a UTF-8 character) you have to explicitly surround it with braces, to identify the part that needs to be capitalized. For example, for figure references in the Hungarian language you might want to write `\labelformat{figure}{{\'a}bra~\thefigure}` or use `\labelformat{figure}{ábra~\thefigure}` which avoids the brace problem.

\thevpagerefnum — If you like to have `\vref` suppress the page number on pages where label and reference fall onto the same page, but prefer reference to page numbers otherwise then `\thevpagerefnum` can be used. This macro hold the current page "number" when `\vpageref` and friends are executed. Thus, by defining, for example

```
\renewcommand\reftextfaceafter {on page~\thevpagerefnum}
\renewcommand\reftextfacebefore{on page~\thevpagerefnum}
\renewcommand\reftextafter     {on page~\thevpagerefnum}
\renewcommand\reftextbefore    {on page~\thevpagerefnum}
```

textual references can be suppressed.

4 Multi-lingual usage

The package works well together with the babel system if it is loaded *after* the babel package, e.g., a document in English (default), French and German text could load the packages as follows:

```
\usepackage[ngerman,french,english]{babel,varioref}
```

(or in two separate lines if you prefer one `\usepackage` line per package). Depending on the current babel language `\vref` and friends would then generate strings

in different languages. If the language options are given as global options to the document class then it is enough to use

```
\usepackage{babel,varioref}
```

to achieve the same effect.

If more than one language is specified with `varioref` then it will start using the last language selected. Switching of languages is managed through Babel; nevertheless all languages of interest need to be specified when `varioref` is loaded so that it can integrate their strings into the Babel system.

5   Customization

The package supports all options defined by the babel package to translate the fixed strings into other languages than English. (Some languages need updating, however—help is appreciated.) It also supports languages currently not in babel (those can only be used standalone, obviously); check the section on options later on.

You can also modify some or all of the strings by redefining the following commands after the package has been loaded. Backward references use `\reftextbefore` if the label is on the preceding page but invisible and `\reftextfacebefore` if it is one the facing page (i.e., if the current page number is odd). Similarly `\reftextafter` is used when the label comes on the next page but one has to turn the page and `\reftextfaceafter` if it is on the following but facing page.

`\reftextbefore`
`\reftextfacebefore`
`\reftextafter`
`\reftextfaceafter`

In fact, `\reftextface...` is used only if the user or the document class specified two-sided printing.

`\reftextfaraway`   Finally we have `\reftextfaraway` which is used whenever label and reference differ by more than one or when they aren't numeric. This macro is a bit different because it takes one argument, the symbolic reference string so that one cane make use of `\pageref` in its replacement text.

`\reftextvario`   To allow a bit random variation in the generated strings one can use the command `\reftextvario` inside the string macros. It takes two arguments and selects one or the other for printing depending on the number of already seens `\vref` or `\vpageref` commands. As an example see the definitions of `\reftextbefore` etc. on page 9.

The commands `\vrefrange` and `\vpagerefrange` produce their text using two macros described below. By redefining them one can modify the results to accommodate special requirements.

They both take two mandatory arguments denoting the first and the last label of the range.

`\reftextpagerange`   This macro produces text that describes the page range of the two labels, e.g., the default for English is "`on pages~\pageref{#1}--\pageref{#2}`".

`\reftextlabelrange`   This macro produces text that describes the range of figures, tables, or whatever the labels refer to, the default for English is "`\ref{#1} to~\ref{#2}`".

New in
1998

5.1   . . . if Babel is used

If babel is being used then the above commands need to be changed using the Babel mechanism, e.g.,

```
\addto\extrasngerman{%
   \renewcommand\reftextfaceafter {auf der n\"achsten Seite}%
    ... }
```

Otherwise babel will reintroduce its own defaults whenever the language is changed (which happens in particular during \begin{document} where the main language is selected).

6   Options

As mentioned above the package supports all standard options offered by the Babel system to customize the strings produced, it may also have a few not supported by babel, for a full list look in section . In addition it offers the option `draft` to turn error messages into warnings during development. The default `final` produces error message when a generated string falls onto a page boundary (see next section).

New in 2019

Newly introduced in 2019 are the options `space` (default) and `nospace`. While the former is the default to allow documents written in the last twenty years to continue to work correctly, I nowadays, suggest that you always use the package with the option `nospace`. This will stop varioref from meddling with the spaces preceding commands and thus make the star forms `\vref*` and `\vpageref*` unnecessary.

This means that the star forms can then be used as defined by `hyperref` for suppressing a hyperlink when both packages are used together (which is a rather typical scenario these days).

7   A few warnings

Defining commands like the ones described above poses some interesting problems. Suppose, for example, that a generated text like 'on the next page' gets broken across pages. If this happens it is very difficult to find an acceptable solution and in fact can even result in a document that will always change from one state to another (i.e., inserting one string, finding that this is wrong, inserting another string on the next run which makes the first string correct again, inserting . . .). The current implementation of `varioref` therefore issues an error message whenever the generated text is broken across page boundaries, e.g.,

table 5 on the current ⟨*page break*⟩ page

would result in an error, which needs to be resolved by the user by replacing the `\vref` command with an ordinary `\ref` just before the final run. This is not \vrefwarning completely satisfactory but in such case no solution really is. During document preparation, while one is still changing the text, such error messages can be turned into warnings by placing a `\vrefwarning` command in the preamble. This is \vrefshowerrors equivalent to specifying "draft" as an option to the package. `\vrefshowerrors` ensures that varioref stops when detecting a possible loop. This is the default and equivalent to specifying "final" as an option.

At the end final a warning: every use of `\vref` will internally generate two macro names to keep track of the string positions within the document. As a

\fullref result you may run out of name space or main memory[2] if you make heavy use of this macro on a small TeX installation. For this reason the primitive command `\fullref` is also provided. This command can be used whenever you know for sure that label and reference can't fall onto nearby pages.

8   The documentation driver file

The next bit of code contains the documentation driver file for TeX, i.e., the file that will produce the documentation you are currently reading. It will be extracted from this file by the `docstrip` program.

```
 1 ⟨*driver⟩
 2 \documentclass{ltxdoc}
 3 \usepackage{multicol,varioref}
 4 \GetFileInfo{varioref.sty}
 5 \setlength\hfuzz{1pt}     % ignore slight overfulls
 6 \EnableCrossrefs
 7 %\DisableCrossrefs   % Say \DisableCrossrefs if index is ready
 8
 9 \RecordChanges        % Gather update information
10 %\OnlyDescription     % comment out for implementation details
11 \begin{document}
12    \DocInput{varioref.dtx}
13 \end{document}
14 ⟨/driver⟩
```

9   The implementation

The main implementation idea is to generate an internal label command for every `\vpageref` and compare the page reference of this label with the page reference of the user-requested label. Since this means one additional macro name for each use of `\vpageref` or `vref` (which is implemented in terms of `\vpageref`) the memory requirements of this package may be high in terms of main and macro name memory. Since the information held in the internal labels is used only once one could envision a different scheme if suitable primitives for this kind of "one place information" would be provided by LaTeX. This type of data structure is planned for LaTeX3 but for the moment we have to live with the memory restrictions.

We start by checking if this file was already loaded. If not we identify the current version. This is actually done at the top of the file, so we comment it out here

```
15 ⟨*package⟩
16 %\NeedsTeXFormat{LaTeX2e}[1994/06/01]
17 %\ProvidesPackage{varioref}[\filedate\space\fileversion\space
18 %                    LaTeX2e package for extended references (FMi)]
```

\vref@addto To support the use of babel we want to add the additional strings to the `\extras`⟨*language*⟩ commands. Since `\addto` in the current implementation of

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[2]Not really that likely these days, but one never knows . . . . In any case TeX will process your document a tiny bit faster.

babel has a bug that does not allow to use arguments containing hashmarks we
do this by hand.

```
19 \def\vref@addto#1#2{%
20   #2%
21   \@temptokena{#2}%
22   \ifx#1\undefined
23     \edef#1{\the\@temptokena}%
24   \else
25     \toks@\expandafter{#1}%
26     \edef#1{\the\toks@\the\@temptokena}%
27   \fi
28   \@temptokena{}\toks@\@temptokena
29 }
30 \@onlypreamble\vref@addto
```

9.1 Options

\vref@excuse Excuse that we don't know the strings for a certain language.

```
31 \def\vref@excuse#1{%
32   \PackageWarningNoLine{varioref}{Sorry, language '#1'
33            not supported%
34            \MessageBreak
35            in this version.
36            English strings used by default.
37            \MessageBreak
38            Please modify \protect\reftext... commands manually.%
39            \MessageBreak\MessageBreak
40            If you can suggest translations for
41            this language,%
42            \MessageBreak
43            please mail them
44            to the author of this package}}
45 \@onlypreamble\vref@excuse
```

\vref@stringwarning And we sometimes just don't know some strings ...

```
46 \def\vref@stringwarning#1{%
47   \PackageWarningNoLine{varioref}{Sorry, there is no proper
48            translation for the string\MessageBreak
49            produced by \protect#1\on@line.\MessageBreak
50            English string used instead.\MessageBreak
51            \MessageBreak
52            If you can suggest translations for
53            the current\MessageBreak
54            language, please mail them
55            to the author of this\MessageBreak package}}
```

\reftextfaceafter   The options do set the macros that generate the textual strings. Note, that they
\reftextfacebefore do not start with a space, the space is already added in the main macro below.
\reftextafter   Afrikaans option contributed by Danie Els (dnjels@sun.ac.za).
\reftextbefore
\reftextcurrent
```
56 \DeclareOption{afrikaans}
57   {\vref@addto\extrasafrikaans{%
58     \def\reftextfaceafter {op die \reftextvario{regterbladsy}%
59                                              {bladsy langsaan}}%
```

```
60      \def\reftextfacebefore{op die \reftextvario{linkerbladsy}%
61                                             {bladsy langsaan}}%
62      \def\reftextafter     {op die \reftextvario{volgende bladsy}%
63                                             {bladsy hierna}}%
64      \def\reftextbefore     {op die \reftextvario{vorige bladsy}%
65                                             {bladsy hiervoor}}%
66      \def\reftextcurrent    {op \reftextvario{hierdie}%
67                                             {die huidige} bladsy}%
68      \def\reftextfaraway#1{op bladsy~\pageref{#1}}%
69      \def\reftextpagerange#1#2{op bladsye~\pageref{#1}--\pageref{#2}}%
70      \def\reftextlabelrange#1#2{\ref{#1} tot~\ref{#2}}%
71   }}
72 \DeclareOption{american}
73   {\vref@addto\extrasamerican{%
74      \def\reftextfaceafter {on the \reftextvario{facing}{next} page}%
75      \def\reftextfacebefore{on the \reftextvario{facing}{preceding}
76                             page}%
77      \def\reftextafter     {on the \reftextvario{following}{next} page}%
78      \def\reftextbefore     {on the \reftextvario{preceding}{previous} page}%
79      \def\reftextcurrent    {on \reftextvario{this}{the current} page}%
80      \def\reftextfaraway#1{on page~\pageref{#1}}%
81      \def\reftextpagerange#1#2{on pages~\pageref{#1}--\pageref{#2}}%
82      \def\reftextlabelrange#1#2{\ref{#1} to~\ref{#2}}%
83   }}
```

Arabic option text was contributed by Ihab Samir Mattar (`dr_kremlin@hotmail.com`).
As our standard documentation workflow uses pdfTeX the Arabic letters can't be displayed easily, so you will see missing glyphs below. To see the real letters you have to look at the source or package file.

```
84 \DeclareOption{arabic}
85   {\vref@addto\extrasarabic{%
86      \def\reftextfaceafter {□□□□□□ \reftextvario{□□□□□□□}{□□□□□□□}}%
87      \def\reftextfacebefore{□□□□□□ \reftextvario{□□□□□□□}{□□□□□□□□□□□□□}}%
88      \def\reftextafter     {□□□□□□ \reftextvario{□□□□□□□}{□□□□□□□}}%
89      \def\reftextbefore     {□□□□□□ \reftextvario{□□□□□□□}{□□□□□□□□□□□□□}}%
90      \def\reftextcurrent    {□\reftextvario{□□□□□ □□□□□□□}{□□□ □□□□□□}}%
91      \def\reftextfaraway#1{□□□□□□ □□□~\pageref{#1}}%
92      \def\reftextpagerange#1#2{□□□□□□□□~\pageref{#1}--\pageref{#2}}%
93      \def\reftextlabelrange#1#2{\ref{#1} □□□~\ref{#2}}%
94   }}
```

The austrian defaults are the same as the german ones.

```
95 \DeclareOption{austrian}
96   {\vref@addto\extrasaustrian{%
97      \def\reftextfaceafter {auf der n\"achsten Seite}%
98      \def\reftextfacebefore{auf der vorherigen Seite}%
99      \let\reftextafter     \reftextfaceafter
100     \let\reftextbefore     \reftextfacebefore
101     \def\reftextcurrent    {auf dieser Seite}%
102     \def\reftextfaraway#1{auf Seite~\pageref{#1}}%
103     \def\reftextpagerange#1#2{auf Seiten~\pageref{#1}--\pageref{#2}}%
104     \def\reftextlabelrange#1#2{\ref{#1} bis~\ref{#2}}%
105   }}
```

The naustrian defaults are the same but needed for "Neue Rechtschreibung".

```
106 \DeclareOption{naustrian}
107   {\vref@addto\extrasnaustrian{%
108     \def\reftextfaceafter {auf der n\"achsten Seite}%
109     \def\reftextfacebefore{auf der vorherigen Seite}%
110     \let\reftextafter     \reftextfaceafter
111     \let\reftextbefore     \reftextfacebefore
112     \def\reftextcurrent   {auf dieser Seite}%
113     \def\reftextfaraway#1{auf Seite~\pageref{#1}}%
114     \def\reftextpagerange#1#2{auf Seiten~\pageref{#1}--\pageref{#2}}%
115     \def\reftextlabelrange#1#2{\ref{#1} bis~\ref{#2}}%
116   }}
```

Text for basque defaults was contributed by Iñaki Larrañaga Murgoitio (aka dooteo) (<dooteo@euskalgnu.org>).

```
117 \DeclareOption{basque}
118   {\vref@addto\extrasbasque{%
119     \def\reftextfaceafter {hurrengo orrialdean}%
120     \def\reftextfacebefore{aurreko orrialdean}%
121     \let\reftextafter     \reftextfaceafter
122     \let\reftextbefore     \reftextfacebefore
123     \def\reftextcurrent   {uneko orrialdean}%
124     \def\reftextfaraway#1{~\pageref{#1}. orrialdean}%
125     \def\reftextpagerange#1#2{~\pageref{#1}--\pageref{#2} orrialdeetan}%
126     \def\reftextlabelrange#1#2{\ref{#1}.etik \ref{#2}.eraino}%
127   }}
```

Text for the Bahasa Malaysia defaults was contributed by Bob Margolis 2005-12-02.

Notes: pada muka surat translates as "on the page" though BM has no definite (or indefinite) article; adjectives and other modifiers follow the noun (clause); bertentangan is "opposite" in the sense of "facing"; berikutnya is "next" (in this context - actually next-to-this, literally); berikutnya also translates as "following this" sebelumnya is "preceding"; also "previous" "ini" translates, literally, as "this" but is also used in the sense of current page.

```
128 \DeclareOption{bahasam}
129   {\vref@addto\extrasbahasam{%
130     \def\reftextfaceafter {pada muka surat \reftextvario{bertentangan}{berikutnya}}%
131     \def\reftextfacebefore{pada muka surat \reftextvario{bertentangan}{sebelumnya} }%
132     \def\reftextafter     {pada muka surat berikutnya}%
133     \def\reftextbefore     {pada muka surat sebelumnya}%
134     \def\reftextcurrent   {pada muka surat ini}%
135     \def\reftextfaraway#1{pada muka surat~\pageref{#1}}%
136     \def\reftextpagerange#1#2{pada muka surat~\pageref{#1}--\pageref{#2}}%
137     \def\reftextlabelrange#1#2{\ref{#1}--\ref{#2}}%
138   }}
```

Text for brazil defaults was contributed by Alcino Dall Igna Junior (adij@di.ufpe.br).

```
139 \DeclareOption{brazil}
140   {\vref@addto\extrasbrazil{%
141     \def\reftextfaceafter {na \reftextvario{p\'agina oposta}{pr\'oxima
142                            p\'agina}}%
143     \def\reftextfacebefore{na p\'agina \reftextvario{oposta}{anterior}}%
144     \def\reftextafter     {na \reftextvario{p\'agina seguinte}{pr\'oxima
145                            p\'agina}}%
```

```
146    \def\reftextbefore{na p\'agina \reftextvario{anterior}{precedente}}%
147    \def\reftextcurrent   {\reftextvario{nesta p\'agina}{na p\'agina
148                            corrente}}%
149    \def\reftextfaraway#1{na p\'agina~\pageref{#1}}%
150    \def\reftextpagerange#1#2{nas p\'aginas~\pageref{#1}--\pageref{#2}}%
151    \def\reftextlabelrange#1#2{\ref{#1} a~\ref{#2}}%
152  }}
```

Text for Breton defaults was contributed by Christian ROLLAND
(`Christian.Rolland@univ-brest.fr`).

```
153 \DeclareOption{breton}
154  {\vref@excuse{breton}%
155   \vref@addto\extrasbreton{%
156    \def\reftextfaceafter {war ar bajenn \reftextvario{a-dal}{da heul}}%
157    \def\reftextfacebefore{war ar bajenn \reftextvario{a-dal}{a-raok}}%
158    \def\reftextafter      {war ar bajenn da heul}%
159    \def\reftextbefore     {war ar bajenn a-raok}%
160    \def\reftextcurrent   {war ar \reftextvario{bajenn-ma\~n}%
161                                              {bajenn war-wel}}%
162    \def\reftextfaraway#1{war ar bajenn~\pageref{#1}}%
163    \def\reftextpagerange#1#2{\vref@stringwarning\reftextpagerange
164                            on pages~\pageref{#1}--\pageref{#2}}%
165    \def\reftextlabelrange#1#2{\vref@stringwarning\reflabelpagerange
166                            \ref{#1} to~\ref{#2}}%
167  }}
```

Text for Bulgarian defaults was contributed by Georgi Boshnakov
(`georgi.boshnakov@gmail.com`).

```
168 \DeclareOption{bulgarian}%
169  {\vref@addto\extrasbulgarian{%
170    \def\reftextfaceafter{\cyrn\cyra\
171        \reftextvario{\cyrs\cyrery\cyrs\cyre\cyrd\cyrn\cyra\cyrt\cyra}%
172                    {\cyrs\cyrl\cyre\cyrd\cyrv\cyra\cyrshch\cyra\cyrt\cyra}
173        \cyrs\cyrt\cyrr\cyra\cyrn\cyri\cyrc\cyra}%
174    \def\reftextfacebefore{\cyrn\cyra\
175        \reftextvario{\cyrs\cyrery\cyrs\cyre\cyrd\cyrn\cyra\cyrt\cyra}%
176                    {\cyrp\cyrr\cyre\cyrd\cyrn\cyra\cyrt\cyra}
177        \cyrs\cyrt\cyrr\cyra\cyrn\cyri\cyrc\cyra}%
178    \def\reftextafter{\cyrn\cyra\
179        \reftextvario{\cyrs\cyrl\cyre\cyrd\cyrv\cyra\cyrshch\cyra\cyrt\cyra}%
180                    {\cyrs\cyrl\cyre\cyrd\cyrv\cyra\cyrshch\cyra\cyrt\cyra}
181        \cyrs\cyrt\cyrr\cyra\cyrn\cyri\cyrc\cyra}%
182    \def\reftextbefore{\cyrn\cyra\
183        \reftextvario{\cyrp\cyrr\cyre\cyrd\cyrn\cyra\cyrt\cyra}%
184                    {\cyrp\cyrr\cyre\cyrd\cyri\cyrsh\cyrn\cyra\cyrt\cyra}
185        \cyrs\cyrt\cyrr\cyra\cyrn\cyri\cyrc\cyra}%
186    \def\reftextcurrent{\cyrn\cyra\
187        \reftextvario{\cyrt\cyra\cyrz\cyri}%
188                    {\cyrt\cyre\cyrk\cyru\cyrshch\cyra\cyrt\cyra}
189        \cyrs\cyrt\cyrr\cyra\cyrn\cyri\cyrc\cyra}%
190    \def\reftextfaraway#1{\cyrn\cyra\ \cyrs\cyrt\cyrr\cyra\cyrn\cyri\cyrc\cyra
191                        ~\pageref{#1}}%
192    \def\reftextpagerange#1#2{\cyrn\cyra\
193                        \cyrs\cyrt\cyrr\cyra\cyrn\cyri\cyrc\cyri
194                        ~\pageref{#1}--\pageref{#2}}%
```

```
195    \def\reftextlabelrange#1#2{\ref{#1} \cyrd\cyro~\ref{#2}}%
196  }}
```

Text for catalan defaults was contributed by Robert Fuster
(`rfuster@mat.upv.es`).

```
197 \DeclareOption{catalan}
198   {\vref@addto\extrascatalan{%
199     \def\reftextfaceafter {a la p\'agina seg\"uent}%
200     \def\reftextfacebefore{a la p\'agina anterior}%
201     \let\reftextafter      \reftextfaceafter
202     \let\reftextbefore     \reftextfacebefore
203     \def\reftextcurrent    {en aquesta p\'agina}%
204     \def\reftextfaraway#1{a la p\'agina~\pageref{#1}}%
205     \def\reftextpagerange#1#2{a les
206                     p\'agines~\pageref{#1}--\pageref{#2}}%
207     \def\reftextlabelrange#1#2{\ref{#1} a~\ref{#2}}%
208   }}
```

Text for croatian defaults was contributed by Šime Ungar (`ungar@math.hr`).

```
209 \DeclareOption{croatian}
210   {\vref@addto\extrascroatian{%
211     \def\reftextfaceafter {na sljede\'coj stranici}%
212     \def\reftextfacebefore{na prethodnoj stranici}%
213     \let\reftextafter      \reftextfaceafter
214     \let\reftextbefore     \reftextfacebefore
215     \def\reftextcurrent    {na ovoj stranici}%
216     \def\reftextfaraway#1{na stranici~\pageref{#1}}%
217     \def\reftextpagerange#1#2{na stranicama~\pageref{#1}--\pageref{#2}}%
218     \def\reftextlabelrange#1#2{\ref{#1} do~\ref{#2}}%
219   }}
```

Defaults for the Czech option provided by Milan Vancura <`milan@suse.cz`>.

```
220 \DeclareOption{czech}
221   {%\vref@excuse{czech}%
222   \vref@addto\extrasczech{%
223     \def\reftextfaceafter {na n\'a\-sle\-du\-j\'\i c\'\i\ stran\v{e}}%
224     \def\reftextfacebefore{na p\v{r}ed\-choz\'\i\ stran\v{e}}%
225     \def\reftextafter      {na n\'a\-sle\-du\-j\'\i c\'\i\ stran\v{e}}%
226     \def\reftextbefore     {na p\v{r}ed\-choz\'\i\ stran\v{e}}%
227     \def\reftextcurrent    {na t\'eto stran\v{e}}%
228     \def\reftextfaraway#1{na stran\v{e}~\pageref{#1}}%
229     \def\reftextpagerange#1#2{na stran\'ach~\pageref{#1}\--\pageref{#2}}%
230     \def\reftextlabelrange#1#2{\ref{#1} a\v{z}~\ref{#2}}%
231   }}
```

Defaults for Danish provided by Torsten Martinsen (`tmar91@kom.auc.dk`). Further defaults by Ole Laursen (`olau@hardworking.dk`).

```
232 \DeclareOption{danish}
233   {\vref@addto\extrasdanish{%
234     \def\reftextfaceafter {p\aa{} \reftextvario{modst\aa ende}%
235                                          {n\ae ste} side}%
236     \def\reftextfacebefore{p\aa{} \reftextvario{modst\aa ende}%
237                                          {forrige} side}%
238     \def\reftextafter      {p\aa{} \reftextvario{den f\o lgende}%
239                                          {n\ae ste} side}%
240     \def\reftextbefore     {p\aa{} \reftextvario{forrige side}
```

```
241                                                  {foreg\aa ende side}}%
242     \def\reftextcurrent    {p\aa{} denne side}%
243     \def\reftextfaraway#1{p\aa{} side~\pageref{#1}}%
244     \def\reftextpagerange#1#2{p\aa{} side~\pageref{#1}--\pageref{#2}}%
245     \def\reftextlabelrange#1#2{\ref{#1} til~\ref{#2}}%
246   }}
```

Default string for dutch have been contributed by Frank Poppe (`POPPE@SWOV.NL`). This option currently supports one additional string macro `\refpagename` so that you can easily change to `bladzijde` instead of `pagina` if you prefer this word for "page". However, I will not guarantee that this will survive future versions of this package, so use it on your own risk (you can always update the full strings to be on the safe side).

```
247 \DeclareOption{dutch}
248   {\vref@addto\extrasdutch{%
249     \def\refpagename{pagina}%
250     \def\reftextfaceafter {op de \reftextvario{rechter \refpagename}%
251                                     {\refpagename\ hiernaast}}%
252     \def\reftextfacebefore{op de \reftextvario{linker \refpagename}%
253                                     {\refpagename\ hiernaast}}%
254     \def\reftextafter      {op de \reftextvario{volgende \refpagename}%
255                                         {\refpagename\ hierna}}%
256     \def\reftextbefore     {op de \reftextvario{vorige \refpagename}%
257                                         {\refpagename\ hiervoor}}%
258     \def\reftextcurrent    {op deze \refpagename}%
259     \def\reftextfaraway#1{op \refpagename~\pageref{#1}}%
```

Concerning the next defaults I received the following comment by Frederik Fouvry `<fouvry@coli.uni-sb.de>`: "In the Dutch options (where I can exert a proper language judgement ;-), 't/m' is not used in formal (scientific) texts. I would either use '–' or 'tot en met' (the abbreviation written out). "

```
260     \def\reftextpagerange#1#2{op pagina's~\pageref{#1}--\pageref{#2}}%
261     \def\reftextlabelrange#1#2{\ref{#1}--\ref{#2}}%
262   }}

263 \DeclareOption{english}
264   {\vref@addto\extrasenglish{%
265     \def\reftextfaceafter {on the \reftextvario{facing}{next} page}%
266     \def\reftextfacebefore{on the \reftextvario{facing}{preceding}
267                              page}%
268     \def\reftextafter      {on the \reftextvario{following}{next} page}%
269     \def\reftextbefore     {on the \reftextvario{preceding}{previous} page}%
270     \def\reftextcurrent    {on \reftextvario{this}{the current} page}%
271     \def\reftextfaraway#1{on page~\pageref{#1}}%
272     \def\reftextpagerange#1#2{on pages~\pageref{#1}--\pageref{#2}}%
273     \def\reftextlabelrange#1#2{\ref{#1} to~\ref{#2}}%
274   }}
```

The esperanto strings were suggested by Albert Reiner (`areiner@tph.tuwien.ac.at`).

```
275 \DeclareOption{esperanto}
276   {\vref@addto\extrasesperanto{%
277     \def\reftextfaceafter{en la
278         \reftextvario{flanka}{sekva} pa\^go}%
279     \def\reftextfacebefore{en la
```

```
280        \reftextvario{flanka}{anta\u ua} pa\^go}%
281     \def\reftextafter{en la sekva pa\^go}%
282     \def\reftextbefore{en la anta\u ua pa\^go}%
283     \def\reftextcurrent{\reftextvario{\^ci-pa\^ge}%
284        {en \^ci tiu pa\^go}}%
285     \def\reftextfaraway#1{en pa\^go~\pageref{#1}}%
286     \def\reftextpagerange#1#2{en pa\^goj~\pageref{#1} \^gis \pageref{#2}}%
287     \def\reftextlabelrange#1#2{\ref{#1} \^gis~\ref{#2}}%
288  }}
```

The finnish strings were suggested by Matti Rintala (`bitti@cs.tut.fi`) and
Hillevi Gavel `Hillevi.Gavel@mdh.se`.

```
289 \DeclareOption{finnish}
290   {\vref@addto\extrasfinnish{%
291     \def\reftextfaceafter {\reftextvario{viereisell\"a}%
292                                       {seuraavalla} sivulla}%
293     \def\reftextfacebefore{\reftextvario{viereisell\"a}%
294                                       {edellisell\"a} sivulla}%
295     \def\reftextafter     {seuraavalla sivulla}%
296     \def\reftextbefore    {edellisell\"a sivulla}%
297     \def\reftextcurrent   {t\"all\"a sivulla}%
298     \def\reftextfaraway#1{sivulla~\pageref{#1}}%
299      \def\reftextpagerange#1#2{sivuilla~\pageref{#1}--\pageref{#2}}%
```

Can't combine numbers with the necessary suffix well.

```
300      \def\reftextlabelrange#1#2{\ref{#1}--\ref{#2}}%
301  }}
```

French defaults are provided by Daniel Flippo (`Daniel.Flipo@univ-lille1.fr`).


```
302 \DeclareOption{french}
303   {\vref@addto\extrasfrench{%
304     \def\reftextfaceafter {page \reftextvario{ci-contre}{suivante}}%
305     \def\reftextfacebefore{page \reftextvario{ci-contre}%
306                             {pr\'ec\'edente}}%
307     \def\reftextafter     {page suivante}%
308     \def\reftextbefore    {page pr\'ec\'edente}%
309     \def\reftextcurrent   {de la pr\'esente page}%
310     \def\reftextfaraway#1{page~\pageref{#1}}%
311     \def\reftextpagerange#1#2{pages~\pageref{#1}--\pageref{#2}}%
312     \def\reftextlabelrange#1#2{\ref{#1} \`a~\ref{#2}}%
313  }}
```

Galician defaults are provided by Matthias Moebius
(`Matthias.Moebius@uni-konstanz.de`).

```
314 \DeclareOption{galician}
315   {\vref@addto\extrasgalician{%
316     \def\reftextfaceafter {na p\'axina oposta}%
317     \def\reftextfacebefore\reftextfaceafter
318     \def\reftextafter     {na p\'axina seguinte}%
319     \def\reftextbefore    {na p\'axina anterior}%
320     \def\reftextcurrent   {nesta p\'axina}%
321     \def\reftextfaraway#1{na p\'axina~\pageref{#1}}%
322      \def\reftextpagerange#1#2{%
323             nas p\'axinas~\pageref{#1}-\pageref{#2}}%
```

```
324      \def\reftextlabelrange#1#2{\ref{#1} a~\ref{#2}}%
325    }}
```

There are no good variants for German (I think and still think but this is a matter
of taste :-). The following definitions were recently suggested to me but since
the original are in for a long time i don't want to change them now since that
could make a lot of documents change their formatting. If you fancy them, add a
redefinition of the corresponding macro(s) to the preamble of your document.

```
\def\reftextfaceafter {auf der \reftextvario
        {gegen\"uberliegenden}{anderen} Seite}%
\def\reftextfacebefore {auf der \reftextvario
        {gegen\"uberliegenden}{anderen} Seite}%
\def\reftextafter     {auf der \reftextvario
        {n\"achsten}{folgenden} Seite}%
\def\reftextbefore    {auf der \reftextvario
        {vorigen}{vorhergehenden} Seite}%
\def\reftextcurrent   {\reftextvario
        {auf dieser}{diese} Seite}%
```

```
326 \DeclareOption{german}
327   {\vref@addto\extrasgerman{%
328     \def\reftextfaceafter {auf der n\"achsten Seite}%
329     \def\reftextfacebefore{auf der vorherigen Seite}%
330     \let\reftextafter      \reftextfaceafter
331     \let\reftextbefore     \reftextfacebefore
332     \def\reftextcurrent   {auf dieser Seite}%
333     \def\reftextfaraway#1{auf Seite~\pageref{#1}}%
334     \def\reftextpagerange#1#2{auf den Seiten~\pageref{#1}--\pageref{#2}}%
335     \def\reftextlabelrange#1#2{\ref{#1} bis~\ref{#2}}%
336    }}
```

The ngerman defaults are the same but needed for "Neue Rechtschreibung" (i.e.,
a different set of hyphenation patterns).

```
337 \DeclareOption{ngerman}
338   {\vref@addto\extrasngerman{%
339     \def\reftextfaceafter {auf der n\"achsten Seite}%
340     \def\reftextfacebefore{auf der vorherigen Seite}%
341     \let\reftextafter      \reftextfaceafter
342     \let\reftextbefore     \reftextfacebefore
343     \def\reftextcurrent   {auf dieser Seite}%
344     \def\reftextfaraway#1{auf Seite~\pageref{#1}}%
345     \def\reftextpagerange#1#2{auf den Seiten~\pageref{#1}--\pageref{#2}}%
346     \def\reftextlabelrange#1#2{\ref{#1} bis~\ref{#2}}%
347    }}
```

Defaults for greek suggested by Apostolos Syropoulos
(apostolo@obelix.ee.duth.gr).

```
348 \DeclareOption{greek}
349   {\vref@addto\extrasgreek{%
350     \def\reftextfaceafter {sthn \reftextvario{paro'usa}%
351                           {ep'omenh} sel'ida}%
352     \def\reftextfacebefore{sthn \reftextvario{paro'usa}{prohgo'umenh}
353                           sel'ida}%
354     \def\reftextafter     {sthn ep'omenh sel'ida}%
```

```
355    \def\reftextbefore    {sthn prohgo'umenh sel'ida}%
356    \def\reftextcurrent   {s'' aut'h th sel'ida}%
357    \def\reftextfaraway#1{sth sel'ida\nobreakspace\pageref{#1}}%
358    \def\reftextpagerange#1#2{stis sel'ides\nobreakspace
359                          \pageref{#1}---\pageref{#2}}%
360    \def\reftextlabelrange#1#2{\ref{#1} ws\nobreakspace\ref{#2}}%
361  }}
```

Icelandic defaults suggested by Thorhallur Sverrisson (`thorhs@basis.is`).

```
362 \DeclareOption{icelandic}
363   {\vref@addto\extrasicelandic{%
364    \def\reftextfaceafter {\'{a} \reftextvario{n{\ae}stu}%
365                                        {n{\ae}stu} s\'{i}{\dh}u}%
366    \def\reftextfacebefore{\'{a} \reftextvario{fyrri}%
367                                        {fyrri} s\'{i}{\dh}u}%
368    \def\reftextafter     {\'{a} \reftextvario{n{\ae}stu}%
369                                        {n{\ae}stu} s\'{i}{\dh}u}%
370    \def\reftextbefore    {\'{a} \reftextvario{fyrri}{fyrri} s\'{i}{\dh}u}%
371    \def\reftextcurrent   {\'{a} \reftextvario{{\th}essari}%
372                                        {{\th}essari} s\'{i}{\dh}u}%
373    \def\reftextfaraway#1{\'{a} s\'{i}{\dh}u~\pageref{#1}}%
374    \def\reftextpagerange#1#2{\'{a} s\'{i}{\dh}um~\pageref{#1}--\pageref{#2}}%
375    \def\reftextlabelrange#1#2{\ref{#1} til~\ref{#2}}%
376  }}
```

Defaults for Italian suggested by Giovanni Pensa (`pensa@dsi.unimi.it`) with iTₑXnici.

```
377 \DeclareOption{italian}
378   {\vref@addto\extrasitalian{%
379    \def\reftextfaceafter {\reftextvario{a fronte}%
380                             {nella pagina successiva}}%
381    \def\reftextfacebefore{\reftextvario{a fronte}%
382                             {nella pagina precedente}}%
383    \def\reftextafter     {nella pagina \reftextvario{seguente}%
384                             {successiva}}%
385    \def\reftextbefore    {nella pagina precedente}%
386    \def\reftextcurrent   {in questa pagina}%
387    \def\reftextfaraway#1{a pagina~\pageref{#1}}%
388    \def\reftextpagerange#1#2{nelle pagine~\pageref{#1}--\pageref{#2}}%
389    \def\reftextlabelrange#1#2{da~\ref{#1} a~\ref{#2}}%
390  }}
```

Defaults for Hungarian by Jeff Goldberg (`jeffrey@goldmark.org`). There is a problem with the use of the definite article *a* or *az* in Hungarian before expansions of \vref or \ref. The problem is that the word should be *az* if the number following would begin with a vowel if spelled out, and *a* if the number would begin with a consonant.

The option assumes that there is a command \aza defined which helps resolving this problem.[3]

```
391 \DeclareOption{magyar}
392   {\vref@addto\extrasmagyar{%
393    \def\reftextafter {a k\"o\-vet\-kez\H{o} ol\-da\-lon}%
```

---

[3]This information is actually quite old but unfortunately never made it into varioref. In case any work has been undertaken to resolve this please inform the author about it.

```
394    \def\reftextbefore{az el\H{o}\-z\H{o} ol\-da\-lon}%
395    \def\reftextfaceafter {\reftextvario{a t\'ul\-ol\-da\-lon}%
396                          {a k\"o\-vet\-kez\H{o} ol\-da\-lon}}%
397    \def\reftextfacebefore{\reftextvario{a t\'ul\-ol\-da\-lon}%
398                          {az el\H{o}\-z\H{o} ol\-da\-lon}}%
399    \def\reftextcurrent   {ezen az ol\-da\-lon}%
```

The following suggested patch has not been added yet (pending changes in babel system).

```
    \def\reftextfaraway#1{a~\csname @@magyar@az@lowxu\endcsname
                                          {\pageref{#1}}.~ol\-da\-lon}%
    \def\reftextpagerange#1#2{a~\csname @@magyar@az@lowxu\endcsname
                                          {\pageref{#1}}%
  --\pageref{#2}.~ol\-da\-la\-kon}%
    \def\reftextlabelrange#1#2{{}\csname @@magyar@told\endcsname\ref{#1}+tol
    \ref{#2}-ig}% Dat: '{}' is here for anti-\capitalize
```

```
400    \def\reftextfaraway#1{\aza{\pageref{#1}} \pageref{#1}.~ol\-da\-lon}%
401    \def\reftextpagerange#1#2{\vref@stringwarning\reftextpagerange
402                          on pages~\pageref{#1}--\pageref{#2}}%
403    \def\reftextlabelrange#1#2{\vref@stringwarning\reflabelpagerange
404                          \ref{#1} to~\ref{#2}}%
405    }%
```

The `\AtBeginDocument` needs to be executed when the option is processed and not inside the babel interface.

```
406    \AtBeginDocument{\providecommand\aza[1]{a/az%
407        \PackageError{varioref}{%
408          Proper definition for command \noexpand\aza missing}%
409        {You need to (re)define the command \noexpand\aza that
410         takes one argument (a number or a \noexpand\pageref command)
411         and produces the string 'a' or 'az' depending on the argument
412         value. It should also accept an optional argument (default 'l')
413         to denote whether or not the string should be lowercase or
414         uppercase.}}}%
415    }
```

The Norwegian and 'nynorsk' translations have been provided by Dag F Langmyhr <dag@ifi.uio.no> and Karl Ove Hufthammer <huftis@bigfoot.com>.

```
416 \DeclareOption{norsk}
417   {\vref@addto\extrasnorsk{%
418    \def\reftextfaceafter {p\aa{} neste side}%
419    \def\reftextfacebefore{p\aa{} forrige side}%
420    \def\reftextafter     {p\aa{} neste side}%
421    \def\reftextbefore    {p\aa{} forrige side}%
422    \def\reftextcurrent   {p\aa{} denne siden}%
423    \def\reftextfaraway#1{p\aa{} side~\pageref{#1}}%
424    \def\reftextpagerange#1#2{p\aa{} side~\pageref{#1}--\pageref{#2}}%
425    \def\reftextlabelrange#1#2{\ref{#1} til~\ref{#2}}%
426  }}
427 \DeclareOption{nynorsk}
428   {\vref@addto\extrasnynorsk{%
429    \def\reftextfaceafter {p\aa{} neste side}%
430    \def\reftextfacebefore{p\aa{} f\o{}rre side}%
431    \def\reftextafter     {p\aa{} neste side}%
```

```
432    \def\reftextbefore    {p\aa{} f\o{}rre side}%
433    \def\reftextcurrent   {p\aa{} denne sida}%
434    \def\reftextfaraway#1{p\aa{} side~\pageref{#1}}%
435    \def\reftextpagerange#1#2{p\aa{} side~\pageref{#1}--\pageref{#2}}%
436    \def\reftextlabelrange#1#2{\ref{#1} til~\ref{#2}}%
437  }}
```

The polish translations have been provided by Tomasz Michniewski `<tomekm@ias.wat.waw.pl>`. The use of the command `\eob` and `aob` etc. requires appropriate definitions as provided, for example, by the babel system. This should probably be handled differently but it would require modifications in babel's language support.

```
438 \DeclareOption{polish}
439  {\vref@addto\extraspolish{%
440    \def\reftextfaceafter {na \reftextvario{s\aob{}siedniej}%
441                                  {nast\eob{}pnej} stronie}%
442    \def\reftextfacebefore{na \reftextvario{s\aob{}siedniej}%
443                                  {poprzedniej} stronie}%
444    \def\reftextafter     {na nast\eob{}pnej stronie}%
445    \def\reftextbefore    {na poprzedniej stronie}%
446    \def\reftextcurrent   {na \reftextvario{tej
447                           samej}{bie\zkb{}\aob{}cej} stronie}%
448    \def\reftextfaraway#1{na stronie~\pageref{#1}}%
449    \def\reftextpagerange#1#2{na stronach~\pageref{#1}--\pageref{#2}}%
450    \def\reftextlabelrange#1#2{od~\ref{#1} do~\ref{#2}}%
451  }}
```

The portuguese default text has been provided by José Carlos Oliveira Santos `jcsantos@fc.up.pt`.

```
452 \DeclareOption{portuges}
453  {\vref@addto\extrasportuges{%
454    \def\reftextfaceafter {na \reftextvario{p\'agina ao lado}{pr\'oxima
455                           p\'agina}}%
456    \def\reftextfacebefore{na p\'agina \reftextvario{ao lado}{anterior}}%
457    \def\reftextafter     {na \reftextvario{p\'agina seguinte}{pr\'oxima
458                           p\'agina}}%
459    \def\reftextbefore{na p\'agina \reftextvario{anterior}{precedente}}%
460    \def\reftextcurrent   {nesta p\'agina}%
461    \def\reftextfaraway#1{na p\'agina~\pageref{#1}}%
462     \def\reftextpagerange#1#2{nas p\'aginas~\pageref{#1}--\pageref{#2}}%
463     \def\reftextlabelrange#1#2{\ref{#1} a~\ref{#2}}%
464  }}
```

Updates to the default text for Romanian have been suggested by Florin Oprina (`<florin.oprina@gmail.com>`).

```
465 \DeclareOption{romanian}
466  {\vref@addto\extrasromanian{%
467    \def\reftextfaceafter {pe pagina \reftextvario{opus\u{a}}{urm\u{a}toarei}}%
468    \def\reftextfacebefore{pe pagina \reftextvario{opus\u{a}}{precedentei}}%
469    \def\reftextafter     {\reftextvario{pe pagina urm\u{a}toare}%
470                                  {pe urm\u{a}toarea pagin\u{a}}}%
471    \def\reftextbefore    {pe pagina \reftextvario{precedent\u{a}}%
472                                          {precedentei}}%
473    \def\reftextcurrent   {pe aceast\u{a} pagin\u{a}}%
474    \def\reftextfaraway#1{pe pagina~\pageref{#1}}%
```

```
475    \def\reftextpagerange#1#2{pe paginile~\pageref{#1}--\pageref{#2}}%
476    \def\reftextlabelrange#1#2{\ref{#1} la~\ref{#2}}%
477  }}
```

The text for russian was taken from the book in Russian by I. A. Kotelnikov
and P. Z. Chebotaev, and adapted to the encoding-independent form by Vladimir
Volovich (`vvv@vsu.ru`).

```
478 \DeclareOption{russian}
479   {\vref@addto\extrasrussian{%
480    \def\reftextfaceafter{\cyrn\cyra\ \reftextvario{\cyrp\cyrr\cyro
481      \cyrt\cyri\cyrv\cyro\cyrp\cyro\cyrl\cyro\cyrzh\cyrn\cyro\cyrishrt}%
482      {\cyrs\cyrl\cyre\cyrd\cyru\cyryu\cyrshch\cyre\cyrishrt}\ \cyrs\cyrt
483      \cyrr\cyra\cyrn\cyri\cyrc\cyre}%
484    \def\reftextfacebefore{\cyrn\cyra\ \reftextvario{\cyrp\cyrr\cyro
485      \cyrt\cyri\cyrv\cyro\cyrp\cyro\cyrl\cyro\cyrzh\cyrn\cyro\cyrishrt}%
486      {\cyrp\cyrr\cyre\cyrd\cyrery\cyrd\cyru\cyrshch\cyre\cyrishrt}\
487      \cyrs\cyrt\cyrr\cyra\cyrn\cyri\cyrc\cyre}%
488    \def\reftextafter{\cyrn\cyra\ \cyrs\cyrl\cyre\cyrd\cyru\cyryu\cyrshch
489      \cyre\cyrishrt\ \cyrs\cyrt\cyrr\cyra\cyrn\cyri\cyrc\cyre}%
490    \def\reftextbefore{\cyrn\cyra\ \reftextvario{\cyrp\cyrr\cyre\cyrd
491      \cyrsh\cyre\cyrs\cyrt\cyrv\cyru\cyryu\cyrshch\cyre\cyrishrt}%
492      {\cyrp\cyrr\cyre\cyrd\cyrery\cyrd\cyru\cyrshch\cyre\cyrishrt}%
493      \ \cyrs\cyrt\cyrr\cyra\cyrn\cyri\cyrc\cyre}%
494    \def\reftextcurrent{\cyrn\cyra\ \reftextvario{\cyrerev\cyrt\cyro
495      \cyrishrt}{\cyrd\cyra\cyrn\cyrn\cyro\cyrishrt}\ \cyrs\cyrt\cyrr
496      \cyra\cyrn\cyri\cyrc\cyre}%
497    \def\reftextfaraway#1{\cyrn\cyra\ \cyrs.~\pageref{#1}}%
498    \def\reftextpagerange#1#2{\cyrn\cyra\ \cyrs\cyrt\cyrr\cyra\cyrn
499      \cyri\cyrc\cyra\cyrh~\pageref{#1}--\pageref{#2}}%
500    \def\reftextlabelrange#1#2{\cyrs~\ref{#1}\ \cyrp\cyro~\ref{#2}}%
501  }}
```

The text for slovak defaults was contributed by Miroslav Sedivy
(`<miro@slovensko.com>`).

```
502 \DeclareOption{slovak}
503   {\vref@addto\extrasslovak{%
504    \def\reftextfaceafter {na \reftextvario{proti\v lahlej}%
505                          {nasleduj\'ucej} strane}%
506    \def\reftextfacebefore{na \reftextvario{proti\v lahlej}%
507                          {predch\'adzaj\'ucej} strane}%
508    \def\reftextafter     {na \reftextvario{nasleduj\'ucej}%
509                          {\v dal\v sej} strane}%
510    \def\reftextbefore    {na \reftextvario{predch\'adzaj\'ucej}%
511                          {predo\v slej} strane}%
512    \def\reftextcurrent   {na tejto strane}%
513    \def\reftextfaraway#1{na strane~\pageref{#1}}%
514    \def\reftextpagerange#1#2{na stran\'ach~\pageref{#1}--\pageref{#2}}%
515    \def\reftextlabelrange#1#2{\ref{#1} a\v z~\ref{#2}}%
516  }}
```

The text for slovene defaults was contributed by Roman Maurer
(`<roman.maurer@amis.net>`).

```
517 \DeclareOption{slovene}
518   {\vref@addto\extrasslovene{%
519    \def\reftextfaceafter {na naslednji strani}%
```

```
520    \def\reftextfacebefore{na prej\v{s}nji strani}%
521    \let\reftextafter      \reftextfaceafter
522    \let\reftextbefore      \reftextfacebefore
523    \def\reftextcurrent    {na \reftextvario{tej}{trenutni} strani}%
524    \def\reftextfaraway#1{na strani~\pageref{#1}}%
525    \def\reftextpagerange#1#2{na straneh~\pageref{#1}--\pageref{#2}}%
526    \def\reftextlabelrange#1#2{od~\ref{#1} do~\ref{#2}}%
527  }}
```

Text for spanish defaults was contributed by Julio Sanchez (`jsanchez@gmv.es`) and Fernando Dobladez (`<ferd@fuego.com>`).

```
528 \DeclareOption{spanish}
529  {\vref@addto\extrasspanish{%
530    \def\reftextfaceafter {en la p\'agina siguiente}%
531    \def\reftextfacebefore{en la p\'agina anterior}%
532    \let\reftextafter      \reftextfaceafter
533    \let\reftextbefore      \reftextfacebefore
534    \def\reftextcurrent    {en esta p\'agina}%
535    \def\reftextfaraway#1{en la p\'agina~\pageref{#1}}%
536    \def\reftextpagerange#1#2{en las p\'aginas~\pageref{#1}%
537                                          -\pageref{#2}}%
538    \def\reftextlabelrange#1#2{\ref{#1} a~\ref{#2}}%
539  }}
```

The text for swedish was contributed by Mats Dahlgren (`matsd@sssk.se`).

```
540 \DeclareOption{swedish}
541  {\vref@addto\extrasswedish{%
542    \def\reftextfaceafter {p\aa\ \reftextvario{motst\aa ende}%
543                                          {n\"{a}sta} sida}%
544    \def\reftextfacebefore{p\aa\ \reftextvario{motst\aa ende}%
545                                          {f\"{o}reg\aa ende} sida}%
546    \def\reftextafter      {p\aa\ \reftextvario{f\"{o}ljande}%
547                                          {n\"{a}sta} sida}%
548    \def\reftextbefore      {p\aa\ f\"{o}reg\aa ende sida}%
549    \def\reftextcurrent    {p\aa\ denna sida}%
550    \def\reftextfaraway#1{p\aa\ sidan~\pageref{#1}}%
551    \def\reftextpagerange#1#2{p\aa\
552                                  sidorna~\pageref{#1}--\pageref{#2}}%
553    \def\reftextlabelrange#1#2{\ref{#1} till~\ref{#2}}%
554  }}
555 \DeclareOption{turkish}
556  {\vref@excuse{turkish}%
557   \vref@addto\extrasturkish{%
558    \def\reftextfaceafter {on the \reftextvario{facing}{next} page}%
559    \def\reftextfacebefore{on the \reftextvario{facing}{preceding}
560                                  page}%
561    \def\reftextafter      {on the \reftextvario{following}{next} page}%
562    \def\reftextbefore      {on the \reftextvario{preceding}{previous} page}%
563    \def\reftextcurrent    {on \reftextvario{this}{the current} page}%
564    \def\reftextfaraway#1{on page~\pageref{#1}}%
565    \def\reftextpagerange#1#2{on pages~\pageref{#1}--\pageref{#2}}%
566    \def\reftextlabelrange#1#2{\ref{#1} to~\ref{#2}}%
567  }}
```

The text for Ukrainian defaults was contributed by Mykola Lyakhovych

(<lyakhovych@mail.ru>).

```
568 \DeclareOption{ukrainian}
569   {\vref@addto\extrasukrainian{%
570     \def\reftextfaceafter{\cyrn\cyra\ \reftextvario{\cyrp\cyrr\cyro
571       \cyrt\cyri\cyrl\cyre\cyrzh\cyrn\cyrii\cyrishrt}%
572       {\cyrn\cyra\cyrs\cyrt\cyru\cyrp\cyrn\cyrii\cyrishrt}\ \cyrs\cyrt
573       \cyro\cyrr\cyri\cyrn\cyrc\cyrii}%
574     \def\reftextfacebefore{\cyrn\cyra\ \reftextvario{\cyrp\cyrr\cyro
575       \cyrt\cyri\cyrl\cyre\cyrzh\cyrn\cyrii\cyrishrt}%
576       {\cyrp\cyro\cyrp\cyre\cyrr\cyre\cyrd\cyrn\cyrii\cyrishrt}\
577       \cyrs\cyrt\cyro\cyrr\cyrii\cyrn\cyrc\cyrii}%
578     \def\reftextafter{\cyrn\cyra\ \cyrn\cyra\cyrs\cyrt\cyru\cyrp\cyrn
579       \cyrii\cyrishrt\ \cyrs\cyrt\cyro\cyrr\cyrii\cyrn\cyrc\cyrii}%
580     \def\reftextbefore{\cyrn\cyra\ \cyrp\cyro\cyrp\cyre\cyrr\cyre\cyrd
581       \cyrn\cyrii\cyrishrt\ \cyrs\cyrt\cyro\cyrr\cyrii\cyrn\cyrc\cyrii}%
582     \def\reftextcurrent{\cyrn\cyra\ \reftextvario{\cyrc\cyrii\cyrishrt}%
583       {\cyrd\cyra\cyrn\cyrii\cyrishrt}\ \cyrs\cyrt\cyro\cyrr\cyrii\cyrn
584       \cyrc\cyrii}%
585     \def\reftextfaraway#1{\cyrn\cyra\ \cyrs.~\pageref{#1}}%
586     \def\reftextpagerange#1#2{\cyrn\cyra\ \cyrs\cyrt\cyro\cyrr\cyrii
587       \cyrn\cyrk\cyra\cyrh~\pageref{#1}--\pageref{#2}}%
588     \def\reftextlabelrange#1#2{\cyrz~\ref{#1}\ \cyrd\cyro~\ref{#2}}%
589   }}
```

We support francais as an alternative to french since people might be used to it, but we discurrage it.

```
590 \DeclareOption{francais}{%
591   \typeout{Please use 'french' instead of 'francais'}%
592   \ExecuteOptions{french}}
593 \DeclareOption{germanb}{%
594   \typeout{Please use 'german' instead of 'germanb'}%
595   \ExecuteOptions{german}}
```

During document preparation errors due to \vref are usually of not much interest. For this reason the draft option turns them into warnings by issuing a \vrefwarning command. The final option (default) stops with an error message when varioref detects a possible loop.

```
596 \DeclareOption{draft}{\AtEndOfPackage\vrefwarning}
597 \DeclareOption{final}{\AtEndOfPackage\vrefshowerrors} % the default
```

Whether or not varioref uses its own white space and removes the one in the source document is handeled by the following two options. For historical reasons the default is to handle the space, but the recommendation these days is to use nospace.

```
598 \newif\if@vrefhandlespace
599 \DeclareOption{space}  {\@vrefhandlespacetrue}
600 \DeclareOption{nospace}{\@vrefhandlespacefalse}
```

After all options are declared we execute the default option english to set up the defaults and then call \ProcessOptions* to handle any option passed to the package. The star form is used since we want to execute the options in the order they are given (in case this isn't used together with the babel package).

```
601 \ExecuteOptions{english,final,space}
602 \ProcessOptions*
```

9.2 Defining the main macros

\vr@cnt   To generate new labels we use a counter and construct the internal label names by prefixing the current counter value with the string vr@. We need a LATEX counter to get \includes handled correctly.

```
603 \newcounter{vrcnt}
```

\vpageref
\vp@geref
   The command \vpageref generates the appropriate string by first parsing the optional arguments (if any) and then compares the internal and the user label. This command should be robust since the user might put it anywhere.

   We now start by scanning for a star and then call either \vp@gerefstar or \vp@geref. The space handling logic is a bit twisted these days: if the option space is in force then preceding spaces in the document are removed and the star means that the command should not add its own space. However, with option nospace any space already in the source will be left alone and the command doesn't add its own space either. Thus in this case the star form doesn't have any effect and below \vp@gerefstar is let to \vp@geref. This allows a package like hyperref to redefine it and useit for its own tasks (like denoting that no link should be produced).

```
604 \DeclareRobustCommand\vpageref{\@ifstar
605     {\let\vref@maybe@space\@empty\vp@gerefstar}%
606     {\let\vref@maybe@space\space \vp@geref}}
607 \def\vp@geref{\@ifnextchar[%
```

The default for the first optional argument is the string hidden in the macro \reftextcurrent.

```
608     \@vpageref{\@vpageref[\reftextcurrent]}%
609 }
```

\vref@space
\vref@maybe@space
   A default for \vref@space. This isn't really needed except in the case that somebody has hooked into the varioref interfaces at a lower level (which isn't really supported, but...). So giving a default will prevent an error message in that case (and should hopefully produce the same behavior as before).

```
610 \let\vref@space\space
611 \let\vref@maybe@space\space
```

\@vpageref   More parsing...

```
612 \def\@vpageref[#1]{\@ifnextchar[%
```

By default the second optional argument is empty.

```
613     {\@@vpageref{#1}}{\@@vpageref{#1}[]}}
```

\@@vpageref   The \@@vpageref macro finally generates the references by comparing the value of an internal label with the value of the user label.

```
614 \def\@@vpageref#1[#2]#3{%
```

First it switches to horizontal mode if necessary. If there was a preceding space we remember its size in \@tempskipa and then remove it for reinsertion later.

```
615     \leavevmode
616     \@tempskipa\lastskip \unskip
```

Then it advances the counter \c@vrcnt by one which is used to generate internal label names.

```
617     \global\advance\c@vrcnt\@ne
```

Then it checks if for the current value of `\c@vrcnt` a label command was issued in the last run. If not it pretends that there was one with the value {??}{??}. Thereafter it stores the pageref value for this label in the macro `\@tempa`.

```
618    \vref@pagenum\@tempa{\the\c@vrcnt @vr}%
```

Here we check that the generated text is not going across a page boundary.

```
619    \vref@pagenum\@tempb{\the\c@vrcnt @xvr}%
```

In version 1.0l the label string has been turned around so that the number comes first. This was done to allow easy explicit expansion of the number before it is passed to the `\label` command. In the babel system the argument of `label` was not expanded with the result that wrong label strings have been generated. This is a general problem that might need a completely different solution in babel but for now the change below (and in some other places in the code) should solve the problem for this special combination of packages.

These days we actually use `\vref@label` instead of `\label` as this avoids problems with Babel or `amsmath` redefining the latter command.

```
620    \vref@label{\the\c@vrcnt @xvr}%
```

Since we have removed any leading space above we now insert a space here after the label. It is done here so that it is still visible from following code—the space before the label would be hidden. What kind of space depends on the options to the package. If `space` was specified, we insert our own space, namely `\vref@maybe@space`. This will typeset a space unless the star form of the current command was used.

```
621    \if@vrefhandlespace
622      \vref@maybe@space
623    \else
```

But if `nospace` is in force we simply use the same space value that was used in the source document (unless that was zero or non-existent.

```
624      \ifdim\@tempskipa=\z@ \else
625        \hskip\@tempskipa
626      \fi
627    \fi
```

Inside displays of the `amsmath` package the `\label` command is redefined which makes the test for loops incorrect if a `\vref` is used in, say, `\intertext`. So we test this condition first and only do the test if `\label` doesn't have a special meaning. [This is no longer necessary as `\label` isn't used any more]

```
628 %  \ifx\label\label@in@display\else
629    \ifx\@tempa\@tempb
630      \let\vref@may@loop\relax
631    \else
```

If both points do not fall onto the same page with either issue an error or a warning message. However, we do no longer issue that warning now but wait until we are sure that both labels aren't "far away" because in that case it doesn't matter. So we just save that info in a macro now.

```
632      \edef\vref@may@loop{%
633        \noexpand\vref@err{\noexpand\vref or \noexpand\vpageref
634              at page boundary
635              \@tempb-\@tempa\space (may loop)%
636              }%
```

```
637        }%
638    \fi
639 %  \fi
```

Same game for the user requested label; this time the page reference is saved in \thevpagerefnum.

```
640    \vrefpagenum\thevpagerefnum{#3}%
```

Now after the internal label has served its purpose if would be nice to free the memory it occupies by using something like

```
 \global\expandafter\let
        \csname r@\the\c@vrcnt @vr\endcsname\@empty
```

But this is not possible because it would result in getting 'Labels may have changed...' warnings for every run. Now we are ready to produce the textual strings.

```
641    \ifx\@tempa\thevpagerefnum
```

If they are the same we insert the first argument into the input stream. Otherwise we insert the second argument. Recall that those are the two optional arguments of .... However, if the user explicitly requested an empty text string using the optional argument we cancel any preceding space since in this case we are otherwise likely to end up with spaces one before and one after \vpageref.

```
642      \def\@tempc{#1}%
643      \ifx\@tempc\@empty
644        \unskip
645      \else
646        #1%
647      \fi
648    \else
```

If #2 is empty we do nothing otherwise we insert it followed by a space.

```
649      \def\@tempc{#2}%
650      \ifx\@tempc\@empty \else
651        #2\vref@space
652      \fi
```

Now we check if the page number of the referenced object (stored in \thevpagerefnum is a single positive number.

```
653      \is@pos@number\thevpagerefnum
654        {%
```

If so, we check if the current position (stored in \@tempa) is a positive number. If this is the case we assign this number to the counter register \@tempcnta and add one to it.

```
655        \is@pos@number\@tempa
656        {\@tempcnta\@tempa
657         \advance\@tempcnta\@ne
658        }%
```

If it is not a positive number we assign the largest possible number to \@tempcnta and thereby pretending that label and reference are miles away from each other.

```
659        {\@tempcnta\maxdimen}%
```

Now we are ready to check if reference and object are on nearby pages. \thevpagerefnum will expand to the page number of the object (and we know that this is a number) and \@tempcnta is either one higher than the reference page or completely out of bounds. So if both represent the same value then the object lies one page after its reference.

```
660          \ifnum \thevpagerefnum =\@tempcnta
```

Thus if the object falls onto an odd page then the reference is on the facing even page (and so we insert \reftextfaceafter), otherwise the object can not be seen from the reference (and we in insert \reftextafter). Don't be surprised if we are not using \thevpagerefnum in the check. Since \@tempcnta has the same value it is faster to use the register instead of parsing the macro contents anew.

```
661            \ifodd\@tempcnta
```

In fact we are going to use \reftextfaceafter only if we are doing two-sided printing, otherwise \reftextafter is always used. Since the value of \if@twoside is evaluated before reading in packages we could do better (saving some tokens) by defining the current macro in dependence of this boolean.

```
662            \if@twoside
663              \reftextfaceafter
664            \else
665              \reftextafter
666            \fi
667          \else
668            \reftextafter
669          \fi
```

If the object is not on the page following the reference we check if it is on the page before the reference. In LaTeX this situation is not too common, for example with floats it normally does not occur, but of course it isn't impossible if you more than one reference to the same object, or if you have back references to sections, theorems, etc. To test this we now subtract two from the current value of \@tempcnta (which was set to one higher as the reference page number). Note, that subtraction is also possible if the value was \maxdimen — we still get something that is much larger than any sensible page number.

```
670        \else
671          \advance\@tempcnta-2
```

If now \thevpagerefnum and \@tempcnta have the same value then the object lies one page before the reference.

```
672          \ifnum \thevpagerefnum =\@tempcnta
```

Again we have to check for odd or even pages to distinguish between the facing and the non-facing situation.

```
673            \ifodd\@tempcnta
674              \reftextbefore
675            \else
```

Again the \reftextfacebefore only if @twoside evaluates to true.

```
676            \if@twoside
677              \reftextfacebefore
678            \else
679              \reftextbefore
680            \fi
681          \fi
```

If the above test also returns false then we have object and references on pages which are far away or don't contain simple page numbers. Therefore we generate the `\reftextfaraway` string and drop any possible "looping warning" in `\vref@may@loop`. Recall that this is a macro which has the user label as an argument.

```
682        \else
683          \let\vref@may@loop\relax % added
684          \reftextfaraway{#3}%
685          \fi
686        \fi
687      }%
```

We do the same if our first test (that the page with the object has a positive page number) turns out to be false.

```
688        {%
689          \let\vref@may@loop\relax %added
690          \reftextfaraway{#3}}%
691    \fi
```

Finally we generate the internal label so that it can be check on the next run. This means that we compare the position after the string with the position of the referenced object. There is one thing to note: to conserve space we locally make `\@currentlabel` empty since we are only interested in the page number value of this internal label.

These days we actually use `\vref@label` instead of `\label` as this avoids problems with Babel or `amsmath` redefining the latter command.

```
692    \vref@label{\the\c@vrcnt @vr}%
```

Finally we run `\vref@may@loop` which is either `\relax` or generates a "may loop" warning or error as appropriate.

```
693      \vref@may@loop
694 }
```

`\vp@gerefstar` The default code for the star form is identical to the previous macro `\vp@geref`. It only produces a different result because before calling it we set `\vref@maybe@space` to do nothing.

The `hyperref` package can then change the meaning of this command to suppress a hyperlink.

It is also a good way to check if we are running with a new `varioref` by testing

```
\ifdefined\vp@gerefstar
   ... code fore noew varioref
\else
  ... code for old varioref
\fi
```

```
695 \let\vp@gerefstar\vp@geref
```

`\vref@label` This macro is like `\label` in the kernel but without passing on `\@currentlabel`, ie useful if all we are interested in is the page number. It also has the effect that it is unaffected by `amsmath` or Babel redefining the `\label` command.

```
696 \def\vref@label#1{\@bsphack
697   \protected@write\@auxout{}%
698           {\string\newlabel{#1}{{}{\thepage}}}%
699   \@esphack}
```

\vpagerefnum	This macro allows to define \reftextafter and friends to refer to the page number rather than producing a textual reference.

```
700 \let\thevpagerefnum\@empty
```

\vrefwarning \vrefshowerrors \vref@err	When the \vref command detects a possible crossing over a page boundary it will call \vref@err to generate an error message. During document preparation one can turn such errors into warnings by issuing a \vrefwarning declaration.

```
701 \def\vrefwarning{\def\vref@err{\PackageWarning{varioref}}}
```

```
702 \def\vrefshowerrors{\def\vref@err##1{\PackageError{varioref}{##1}%
703    {Please check the pages in question. You might need to replace
704      the \string\vref\MessageBreak
705      or \noexpand\vpageref by a normal \noexpand\(page)ref to
706      stop LaTeX running forever.}}}
```

\vref	We start by scanning for a star form and then continue in a different macro depending on the result.

```
707 \DeclareRobustCommand\vref{\@ifstar
708    {\vref@star}{\vr@f}}
```

\vref@star	The star form is easy (and just a convenient shortcut), just call \ref followed by \vpageref and pass the optional argument to the latter. We don't support the second optional argument of \vpageref, it that is needed one has to call both commands explicitly

```
709 \newcommand\vref@star[2][]{%
710    \ref{#2}
711    \vpageref[#1]{#2}}
```

\vr@f	The normal case is a little bit more elaborated ...

```
712 \def\vr@f{%
713    \leavevmode
```

If option space is used then we remove a preceding space and add our own unbreakable space instead. Otherwise we don't do any space-handling.

```
714    \if@vrefhandlespace
715      \unskip \nobreakspace
716    \fi
```

The use of \nobreakspace or ~ after the \unskip means that this command will always produce a normal space while something like \nobreak\space will react to settings of \nonfrenchspacing. Unfortunately the latter will also act in cases where one really wants a normal space, e.g., in Fig.~\vref{..}, resulting in a large extra space after the dot. For this reason the first solution is used.

After having handled (or not handled) the spacing we call \vref@star to scan the optional arguments and do the rest. If that command has been altered by hyperref then the current one needs altering too and does the argument scanning explicitly.

```
717    \vref@star                 % in hyperref this needs to be explicit
718 }
```

\is@pos@number	The utility macro \is@pos@number takes three arguments: a string that is tested for being a valid non-negative integer and the actions to be taken in case the test comes out true or false.

We start by passing the string to the macro `\is@pos@num` after prefixing it with a 0 and adding a space after it. To have a well-defined ending point we also add `\@nil` at the end.

719 `\def\is@pos@number#1{\is@pos@num0#1\space\@nil}`

Now we parse the enlarged string into a counter register. To get control back after everything that is regarded by TeX as a number is put into that register we assign `\is@pos@num@` to the `\afterassignment` token. Since the string started with 0, we can be sure that the register assignment will be carried out without an error message. In case of counter assignments leading zeros are discarded.

720 `\def\is@pos@num{\afterassignment\is@pos@num@ \count@}`

Now we have to check whether or not the whole string was parsed into that register or some remainder was left over. Since we have added a `\@nil` token at the very end we can use that to delimit the argument of `\is@pos@num@`. Note, that the added space in `\is@pos@number` above gets parsed away by the counter assignment. If it would be missing, and the full string would consist of a number, TeXwould try to replace `\@nil` by its definition to see if it would contain additional digits and thus we would be in trouble at this point.

721 `\def\is@pos@num@#1\@nil{%`

Now we have to check if the argument is empty. We can do this with an `\ifx` (i.e., in an expandable way) since we know for sure that it can not start with `\@nil`.

722 `  \ifx\@nil#1\@nil`

Depending on the result we execute the second or third argument of the command `\is@pos@number` using a technique that removes the `\else` or `\fi` from the input stream first, so that in principle input stream parsing could be done from within the arguments.

723 `    \expandafter\@firstoftwo \else`
724 `    \expandafter\@secondoftwo  \fi}`

`\reftextvario` This macro gives a little bit of random variation in the text because the outcome depends on the number of `\vref` commands seen before.

725 `\def\reftextvario#1#2{\ifodd\c@vrcnt #1\else#2\fi}`

`\fullref` And here is the primitive command that always produces a `\ref` and a `\pageref`.

726 `\def\fullref#1{\ref{#1} \reftextfaraway{#1}}`

9.2.1 Supporting ranges

`\vref@pagenum` This command takes a label as `#1` extracts the page number associated with it and saves the result in a csname which is passed as `#1`. If the label isn't associated with a page number it essentially associates it with `??` for both the label number and the page, thus defining the label this way. This means that no label warning is generated for this label in case it is undefined.

727 `\def\vref@pagenum#1#2{%`
728 `  \@ifundefined{r@#2}{\@namedef{r@#2}{{??}{??}}}{}%`

Extracting and saving the page number turned out to be a source of subtle bugs. Initially it was done through an `\edef` with a bunch of `\expandafter` commands inside. This posed a problem if the page number itself contained code which needed protection (e.g., pr/4080) so this got changed to use `\protected@edef`. However,

that in turn failed with Babel (pr/4093) if the label contained active characters, e.g., a ":" in French. So now we use even more `\expandafter` commands to avoid any expansion other than what is absolutely required—I'm sure there is now a simpler way to code this, but … in fact we didn't use enough initially resulting in another bug (pr/4159):

```
729    \expandafter\expandafter\expandafter\vref@@pagenum
730    \csname r@#2\endcsname{}{}\@nil#1%
731 }
732 \def\vref@@pagenum#1#2#3\@nil#4{%
733    \def#4{#2}%
734 }
```

\vrefpagenum   Same as the above but this time we generate a warning for undefined labels.

```
735 \def\vrefpagenum#1#2{%
736    \@ifundefined{r@#2}%
737      {\G@refundefinedtrue
738       \@latex@warning{Reference '#2' on page \thepage \space
739             undefined}}{}%
740    \vref@pagenum{#1}{#2}}
```

\vpagerefrange   If both labels refer to the same page then we produce a `\vpageref`. Otherwise we
\@vpagerefrange   produce the result of `\reftextpagerange`.
\@svpagerefrange   One could think of making this command even more clever by producing a special string if the difference between the two page number is one (but this is not done).

We need two versions to implement a star form:

```
741 \newcommand\@svpagerefrange[3][\reftextcurrent]{%
742    \vrefpagenum\@tempa{#2}%
743    \vrefpagenum\@tempb{#3}%
744    \ifx\@tempa\@tempb
745      \vpageref*[{#1}]{#2}%
746    \else
747      \reftextpagerange{#2}{#3}%
748    \fi
749 }
```

And the same but using `\vpageref`:

```
750 \newcommand\@vpagerefrange[3][\reftextcurrent]{%
751    \vrefpagenum\@tempa{#2}%
752    \vrefpagenum\@tempb{#3}%
753    \ifx\@tempa\@tempb
754      \vpageref[{#1}]{#2}%
755    \else
756      \reftextpagerange{#2}{#3}%
757    \fi
758 }
```

And here we put things together.

```
759 \newcommand\vpagerefrange{\@ifstar\@svpagerefrange\@vpagerefrange}
```

\vrefrange

```
760 \newcommand\vrefrange[3][\reftextcurrent]
761    {\reftextlabelrange{#2}{#3} \vpagerefrange[{#1}]{#2}{#3}}
```

\Vref \Vref is the counterpart to \vref with \ref replaced by \Ref in its definition.

```
762 \DeclareRobustCommand\Vref{\@ifstar
763   {\Vref@star}%
764   {\Vr@f}}
```

\Vref@star

```
765 \newcommand\Vref@star[2][]{%
766   \Ref{#2}
767   \vpageref[#1]{#2}}
```

\Vr@f

```
768 \def\Vr@f{%
769   \if@vrefhandlespace
770     \unskip \vref@space
771   \fi
772   \Vref@star                    % in hyperref this needs to be explicit
773 }
```

\vpagerefcompare

```
774 \DeclareRobustCommand\vpagerefcompare[2]{%  label1, label2, TRUE, FALSE
775   \vrefpagenum\@tempa{#1}%
776   \vrefpagenum\@tempb{#2}%
777   \ifx\@tempa\@tempb
778     \expandafter\@firstoftwo
779   \else
780     \expandafter\@secondoftwo
781   \fi
782 }
```

\vpagerefnearby Test if \vpageref is going to be at most ±1 off from current page.

```
783 \DeclareRobustCommand\vpagerefnearby[1]{%  label, TRUE, FALSE
784   \leavevmode
785   \@tempskipa\lastskip \unskip
786   \global\advance\c@vrcnt\tw@     % keep oddness to not disturb \vrefvario
787   \vref@label{\the\c@vrcnt @vn}%
788   \ifdim\@tempskipa=\z@ \else
789     \hskip\@tempskipa
790   \fi
791   \vref@pagenum\@tempa{\the\c@vrcnt @vn}%
792   \is@pos@number\@tempa
793       {%
794         \vrefpagenum\@tempb{#1}%
795         \is@pos@number\@tempb
796             {%
797               \ifcase\numexpr \@tempa -\@tempb+1\relax
798               \or \or \else \expandafter \@thirdofthree \fi
799               \@firstoftwo
800             }%
801             {\@secondoftwo}%
802       }%
803       {\@secondoftwo}%
804 }
```

\vpagerefcomparenearby   True if the two pages have arabic page numbers are at most off by one so that
\vpageref would produce a special string.

   This is in some sense a general version of \vpagerefnearby for use in more complex situations. I.e., if you try to determine if a larger set of references would be close to the current page and you use each time \vpagerefnearby then you generate a lot of internal labels for the current point. Thus by setting the label yourself you can save processing time and space. On the other hand you have to be careful to place the label into the right place which can be a bit complicated if you look at the definition of \vpagerefnearby that does all this automatically for you. This is why the current macro is not discussed in the user interface section as it is really just for package developers.

```
805 \DeclareRobustCommand\vpagerefcomparenearby[2]{%  label1, label2, TRUE, FALSE
806   \vrefpagenum\@tempa{#1}%
807   \is@pos@number\@tempa
808      {%
809        \vrefpagenum\@tempb{#2}%
810        \is@pos@number\@tempb
811           {%
812             \ifcase\numexpr \@tempa -\@tempb+1\relax
813             \or \or \else \expandafter \@thirdofthree \fi
814             \@firstoftwo
815           }%
816           {\@secondoftwo}%
817      }%
818      {\@secondoftwo}%
819 }
```

9.2.2 Compatibility with older LaTeX formats

\labelformat   We don't need to define \labelformat and \Ref or change the definition of
\Ref   \refstepcounter any longer because this is now done in the LaTeX kernel. How-
\refstepcounter   ever, if this package is used together with an older kernel, this is not true, so for this special case we keep the definitions.

```
820 \ifx\labelformat\@undefined  % assume we are in an older kernel
821   \def\labelformat#1{\expandafter\def\csname p@#1\endcsname##1}
822   \DeclareRobustCommand\Ref[1]{\protected@edef\@tempa{\ref{#1}}%
823      \expandafter\MakeUppercase\@tempa}
824   \def\refstepcounter#1{\stepcounter{#1}%
825      \protected@edef\@currentlabel
826        {\csname p@#1\expandafter\endcsname\csname the#1\endcsname}}
827 \fi
```

```
828 ⟨/package⟩
```

Change History

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