

Section name references in L^AT_EX^{*}

Sebastian Rahtz (deceased)
Heiko Oberdiek (inactive)
The L^AT_EX Project
<https://github.com/latex3/hyperref/issues>

2023-06-18

Documentation overview for hyperref

The documentation for package `hyperref` consists of several files:

[Manual](#) The **USER MANUAL** (also available as HTML).

[ChangeLog](#) This file records the version history.

[Bookmark talk, slides](#) Slides for the talk “PDF information and navigation elements with hyperref, pdfTeX and thumbpdf” at EuroT_EX 1999.

[Bookmark talk, paper](#) The paper version of the talk.

Source code documentation:

[hyperref.dtx](#) This is the source code documentation for hyperref.

[backref.dtx](#) “Back referencing from bibliographical citations”

📖 [nameref.dtx](#) “Section name references in L^AT_EX” (this file)

Contents

1	Introduction	2
2	Background and advice for package and class authors	2
3	History	3

^{*}This file has version number v2.52, last revised 2023-06-18.

4	Implementation	4
4.1	<code>\label</code> stuff	4
4.2	Changes of section macros	7
4.2.1	Class beamer	10
4.2.2	Theorems	11
4.3	Referencing stuff	11
4.4	Usage and frontend	14
4.5	Package ifthen support	15
4.6	Compatibility with <code>varioref</code>	15
4.7	Support for package <code>listings</code>	16
5	Index	16

1 Introduction

Cross-referencing to include the *name* of the section, rather than just the number or page. This works by redefining some of the inside \LaTeX macros, so it is vulnerable to future changes.

2 Background and advice for package and class authors

The package redefines the `\label` command to write additionally `\@currentlabelname` to the `.aux` file. This can then be referenced with `\nameref`. Package authors who want to support `nameref` should define this command (locally) in a suitable way. The content should be so that it can be safely written to the `.aux` file. `nameref` itself uses the package `getttitlestring` but this is not required.

`nameref` patches a number of commands (mostly sectioning commands) and environments so that they store `\@currentlabelname`. A class or a package that want to provide native support instead can suppress this patches by defining commands described below. The commands must be defined before the patch is made, in most cases before `nameref` is loaded, sometimes only before begin document.

sectioning commands Redefined are

- `\@sect`: beside adding a command that stores the title of a sectioning command (if present the optional argument is used) `nameref` also stores the level number in a counter `section@level` (reason is unknown, only two packages, `e-french` and `pdfscreen` seem to use it), and surrounds the text with `\Sectionformat` (only used by `acmart`, `memoir`, `pdfscreen`, `pdfslide`), a command which takes two argument: the first the text, the second the level.
- `\@ssect`: command to store the title added, `\Sectionformat` is added.
- `\M@sect` (`memoir` class): command to store the title added
- `\@part`, `\@spart`, `\@chapter`, `\@schapter`: command to store the title added
- `\ttl@sect@i` (from the `titlesec` package): command to store the title added

All the patches excepted the last are disabled if the command `\NR@nopatch@sectioning` is defined (the actual definition is irrelevant, only existence is tested). The titlesec patch is disabled if `\NR@nopatch@titlesec` is defined. This currently only suppress the actual patches, the counter, `\Sectionformat` and also the internal copies `\NR@sect` etc are still defined.

captions The following commands are patched

- `\@caption`: command to store the title added. This is done at begin document, but only if `hyperref` is not detected. With `hyperref` the patch is done there (and must be disabled in `hyperref`).
This patch can be disabled by defining `\NR@nopatch@caption`
- `\LT@cc@ption` (from the `longtable` package): command to store the title added.
This patch can be disabled by defining `\NR@nopatch@longtable`
- `\lst@MakeCaption` (from the `listings` package)
This patch can be disabled by defining `\NR@nopatch@listings`

lists The following command is patched

- `\descriptionlabel`: command to store the label text added. To reference this text the `\label` must be put *inside* the label. This is not compatible with the `enumitem` package as internal formatting commands are written to the `.aux` file too.
This patch can be disabled by defining `\NR@nopatch@lists`

theorems • `\@opargbegintheorem`: command to store the title added.
This patch can be disabled by defining `\NR@nopatch@theorem`

- `\@begintheorem` (if `amsthm` is loaded and if the command has a tested meaning): command to store the title added.
This patch can be disabled by defining `\NR@nopatch@amsthm`

beamer In the `beamer` class the following commands are patched: `\beamer@section`, `\beamer@subsection`, `\beamer@subsubsection`, `\beamer@descriptionitem` and the template `theorem begin`. If `\NR@nopatch@beamer` is defined nothing is done.

3 History

Sebastian Rahtz, for Lou Burnard, March 15th 1994;
 SPQR CERN July 1994;
 Last mod. Sept. 3th MG;
 Sept. 19th SPQR;
 April 11th 1995 SPQR (added section formatting hook);
 April 14th 1995 SPQR (compatibility with `hyperref`);
 June 22 1995 SPQR (removed typeout from `Sectionformat`);
 September 22 1997 added `varioref` hacks by Corey Minyard;
 September 28th changes by David Carlisle.
 More recent changes are recorded in `ChangeLog`.

The versions before 2009/11/27 v2.32 did not expand the title strings (of `\section`, `\caption`, ...). Then the behaviour switched to expanding, because this allows to remove unwanted macros (`\label`, ...). Despite this method is used in package `titleref` and class `memoir`, the first feedbacks let me conclude that this is not robust enough. Therefore I wrote package `getttitlestring` that uses the non-expanding method as default. It also allows me to use this package in package `zref-titleref`. See the package documentation of package `getttitlestring` how to change the method. It also provides a hook to remove additional unwanted macros, not supported by the package. Example:

```
\usepackage{getttitlestring}
\GetTitleStringDisableCommands{%
  \let\mylabel\@gobble
  \renewcommand\myindex[2]{}%
}
```

4 Implementation

```
1 (*package)
2 \RequirePackage{refcount}[2006/02/12]
3 \RequirePackage{getttitlestring}[2009/12/18]
4 \RequirePackage{ltxcmds}[2009/12/12]
```

In formats older than 2023-06-01 we redefine `\label` so that it also writes the name of the current section to the `.aux` file; if the name ends in a dot, we zap it. To allow for the `hyperref` package, also write fourth and fifth fields (empty by default; used for cross-ref name, and file).

`\NR@strip@period`

```
5 \def\NR@strip@period#1.\ltx@empty#2\@nil{#1}
```

`\strip@period` Macro `\strip@period` was removed in `nameref` 2012/07/28 v2.41 and reinserted in 2012/07/31 v2.42 for compatibility reasons with package `subfig`.

```
6 \def\strip@period#1.\relax#2\@@@{#1}

7 \def\NR@sanitize@labelname{%
8   \@onelevel@sanitize\@currentlabelname
9   \edef\@currentlabelname{%
10     \expandafter\NR@strip@period\@currentlabelname
11     \ltx@empty.\ltx@empty\@nil
12   }%
13 }
```

4.1 `\label` stuff

Here is tested, whether package `showkeys` is loaded. But if option `final` is used, the macros of `showkeys` are not defined, so we have to check an additional test.

`\ifNR@showkeys`

```
14 \newif\ifNR@showkeys
15 \NR@showkeysfalse
16 \ifpackageloaded{showkeys}{%
17   \begingroup
```

```

18   \ifundefined{SK@@label}{%
19   }{%
20     \global\NR@showkeysttrue
21   }%
22   \endgroup
23 }{}

```

`\label@hook` Starting with LaTeX 2023-06-01 it is not longer needed to redefine `\label` as the kernel provides a hook and stores `\@currentlabelname`. But as there are packages like `ntheorem` and `revtex` which overwrites the kernel definition and then break `nameref` and `hyperref` we add a guard. We still support `\label@hook` for now as it is used below in `\slabel` and also in `hyperref`.

```

24 \providecommand*{\label@hook}{}
25 \ltx@GlobalAppendToMacro{\label@hook}{%
26   \NR@sanitize@labelname
27 }
28 \ifl@t@r\fmtversion{2023-06-01}
29 {
30   \def\NR@label@copy#1{\@bsphack
31     \begingroup
32     \UseHookWithArguments{label}{1}{#1}%
33     \protected@write\@auxout{%
34       {\string\newlabel{#1}{\@currentlabel}{\thepage}%
35       {\@currentlabelname}{\@currentHref}{\@kernel@reserved@label@data}}}%
36   \endgroup
37   \@esphack}
38   \ifx\label\NR@label@copy
39   \else
40     \PackageWarning{nameref}{The definition of \string\label\space has changed!
41       \MessageBreak Check your packages!
42       \MessageBreak Replacing it with the kernel definition}
43     \let\label\NR@label@copy
44   \fi
45   \AddToHookWithArguments{label}{\def\label@name{#1}\label@hook}
46 }
47 {
48

```

`\label`

```

49   \def\label#1{%
50     \@bsphack
51     \begingroup
52     \def\label@name{#1}%
53     \label@hook
54     \protected@write\@auxout{%
55       {\string\newlabel{#1}{%
56         {\@currentlabel}%
57         {\thepage}%
58         {\@currentlabelname}%
59         {\@currentHref}}}%
60     }%
61     }%
62   \endgroup
63   \@esphack

```

```

64 }%
65 \ifNR@showkeys
66   \def\label#1{%
67     \@bsphack
68     \SK@\SK@@label{#1}%
69     \begingroup
70     \def\label@name{#1}%
71     \label@hook
72     \protected@write\@auxout{}\{%
73       \string\newlabel{#1}\{%
74         {\@currentlabel}%
75         {\thepage}%
76         {\@currentlabelname}%
77         {\@currentHref}\}%
78     }%
79   }%
80   \endgroup
81   \@esphack
82 }%
83 \fi
84 }

```

`\ltx@label` Starting with LaTeX 2023-06-01 it is not longer needed to update the `amsmath` command `\ltx@label` as `nameref` no longer changes `\label`

```

85 \ifl@t@r\fmtversion{2023-06-01}
86 {}{\let\ltx@label\label}

```

Needed for the *subeqnarray* package.

```

\slabel
87 \ifundefined{slabel}{}\{%
88   \def\slabel#1{%
89     \@bsphack
90     \if@filesw
91       \begingroup
92       \def\label@name{#1}%
93       \label@hook
94       \let\thepage\relax
95       \def\protect{\noexpand\noexpand\noexpand}%
96       \edef\@tempa{%
97         \write\@auxout{%
98           \string\newlabel{#1}\{%
99             {\thesubequation}%
100             {\thepage}%
101             {\@currentlabelname}%
102             {\@currentHref}\}%
103         }%
104       }%
105     }%
106     \expandafter\endgroup
107     \@tempa
108     \if@nobreak\ifvmode\nobreak\fi\fi
109   \fi
110   \@esphack

```

```

111 }%
112 }

```

Overload an AMS L^AT_EX command, which uses `\newlabel`. Sigh!

`\@writetocindents@`

```

113 \def\@writetocindents@{%
114   \begingroup
115   \@for\@tempa:=-1,0,1,2,3\do{%
116     \immediate\write\@auxout{%
117       \string\newlabel{tocindent\@tempa}{%
118         \csname r@tocindent\@tempa\endcsname}{-}{-}{-}%
119     }%
120   }%
121 }%
122 \endgroup
123 }

```

4.2 Changes of section macros

Add to the underlying section heading macros so that they note the section name for use by label.

If a section heading or the like has a `\label` in it, we need to extract it, or subsequent processing breaks.

`\NR@getttitle`

```

124 \def\NR@getttitle#1{%
125   \GetTitleString{#1}%
126   \let\@currentlabelname\GetTitleStringResult
127 }

```

First the numbered sections. While we are about it, put in a useful section formatting macro.

`\NR@ssect`

```

128 \let\NR@ssect\@ssect
129 \newcounter{section@level}

```

`\@ssect`

```

130 \ifundefined{NR@nopatch@sectioning}
131 {\def\@ssect#1#2#3#4#5#6[#7]#8{%
132   \setcounter{section@level}{#2}%
133   \NR@getttitle{#7}%
134   \NR@ssect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{\Sectionformat{#8}{#2}}%
135 }}{}

```

and now the unnumbered ones

`\NR@ssect`

```

136 \let\NR@ssect\@ssect

```

\@ssect

```
137 \@ifundefined{NR@nopatch@sectioning}
138 {\def\@ssect#1#2#3#4#5{%
139   \NR@getttitle{#5}%
140   \NR@ssect{#1}{#2}{#3}{#4}{\Sectionformat{#5}{#1}}%
141 }}{}
```

Support for class memoir.

```
142 \@ifundefined{NR@nopatch@sectioning}
143 {\let\IfUndefined\ifheadnameref}{%
144   {%
145     \let\IfUndefined\M@ssect}{%
146     {%
147       \let\NRorg\M@ssect\M@ssect
148       \def\M@ssect#1#2#3#4#5#6[#7][#8]{%
149         \ifheadnameref
150           \NR@getttitle{#8}%
151         \else
152           \NR@getttitle{#7}%
153         \fi
154         \NRorg\M@ssect{#1}{#2}{#3}{#4}{#5}{#6}[[#7]][[#8]]%
155       }%
156     }%
157   }}{}
```

Parts and chapters are treated differently. sigh. \@part and \@spart are \long because of class memoir.

```
158 \let\NR@part\@part
159 \let\NR@spart\@spart
160 \let\NR@chapter\@chapter
161 \let\NR@schapter\@schapter
162 \@ifundefined{NR@nopatch@sectioning}
163 {%
164   \long\def\@part[#1]#2{%
165     \NR@getttitle{#1}%
166     \NR@part[[#1]][#2]%
167   }
168   \long\def\@spart#1{%
169     \NR@getttitle{#1}%
170     \NR@spart{#1}%
171   }
172   \def\@chapter[#1]#2{%
173     \NR@getttitle{#1}%
174     \NR@chapter[[#1]][#2]%
175   }
176   \@ifclassloaded{memoir}{%
177     \let\IfUndefined\ifheadnameref}{%
178     {%
179       \def\@chapter[#1]#2{%
180         \let\IfUndefined\ch@pt@c}{%
181         \NR@getttitle{#1}%
182       }{%
183         \ifx\ch@pt@c\ltx@empty
184           \NR@getttitle{#2}%
185         }
186       }
187     }
188   }
```



```

185         \else
186         \def\NR@temp{#1}%
187         \ifx\NR@temp\ltx@empty
188             \expandafter\NR@getttitle\expandafter{\ch@pt@c}%
189         \else
190             \ifheadnameref
191                 \NR@getttitle{#1}%
192             \else
193                 \expandafter\NR@getttitle\expandafter{\ch@pt@c}%
194             \fi
195         \fi
196     \fi
197 }%
198 \NR@chapter[{#1}]{#2}%
199 }%
200 }%
201 {}
202 \def\@schapter#1{%
203     \NR@getttitle{#1}%
204     \NR@schapter{#1}%
205 }{}

```

Captions

```

206 \AtBeginDocument{%
207     \@ifpackageloaded{hyperref}{%
208     {%
209         \@ifundefined{NR@nopatch@caption}%
210         {\let\NR@@caption\@caption
211         \long\def\@caption#1[#2]{%
212             \NR@getttitle{#2}%
213             \NR@@caption{#1}[{#2}]}%
214         }}%
215     }%
216 }%
217 \@ifpackageloaded{longtable}{%
218     \@ifundefined{NR@nopatch@longtable}%
219     {%
220         \let\NRorg@LT@c@ption\LT@c@ption
221         \def\LT@c@ption#1[#2]#3{%
222             \NRorg@LT@c@ption{#1}[{#2}]{#3}%
223         \def\@tempa{#2}%
224         \ifx\@tempa\@empty
225             \else
226                 \NR@getttitle{#2}%
227             \fi
228         }%
229     }{}%
230 }{}%

```

Environment ‘description’.

```

231 \ltx@ifundefined{descriptionlabel}{%
232 }{%
233     \@ifundefined{NR@nopatch@lists}%
234     {\let\NRorg@descriptionlabel\descriptionlabel

```

```

235     \def\descriptionlabel#1{%
236       \NR@getttitle{#1}%
237       \NRorg@descriptionlabel{#1}%
238     }%
239   }{}%
240 }%
241 }

```

Compatibility for package titlesec.

```

242 \AtBeginDocument{%
243   \@ifpackageloaded{titlesec}{%
244     \let\NRorg@ttl@sect@i\ttl@sect@i
245     \@ifundefined{NR@nopatch@titlesec}{
246       {%
247         \def\ttl@sect@i#1#2[#3]#4{%
248           \NR@getttitle{#4}%
249           \NRorg@ttl@sect@i{#1}{#2}[{#3}]{#4}%
250         }%
251       }{}%
252     }{}%
253 }

```

4.2.1 Class beamer

```

254 \@ifclassloaded{beamer}{%
255   \@ifclasslater{beamer}{2022-05-17}
256   {}%do nothing
257   {%
258     \@ifundefined{NR@nopatch@beamer}{
259       {%
260         \def\NR@PatchBeamer#1{%
261           \expandafter\let\csname NRorg@beamer@#1\expandafter\endcsname
262             \csname beamer@#1\endcsname
263           \begingroup
264             \edef\x{\endgroup
265               \long\def\expandafter\noexpand\csname beamer@#1\endcsname
266                 [####1]{% hash-ok
267                   \noexpand\NR@getttitle{####1}%
268                   \expandafter\noexpand\csname NRorg@beamer@#1\endcsname
269                     [{####1]}%
270                 }%
271             }%
272           \x
273         }%
274         \AddToHook{class/beamer/after}{%
275           \NR@PatchBeamer{section}%
276           \NR@PatchBeamer{subsection}%
277           \NR@PatchBeamer{subsubsection}%

```

Theorem names.

```

278   \addtobeamertemplate{theorem begin}{%
279     \expandafter\NR@getttitle\expandafter{\inserttheoremaddition}%
280   }{}%
281   \@ifdefinable{\NRorg@beamer@descriptionitem}{%
282     \let\NRorg@beamer@descriptionitem\beamer@descriptionitem

```

```

283     \renewcommand{\beamer@descriptionitem}[1]{%
284         \NR@getttitle{#1}%
285         \NRorg@beamer@descriptionitem{#1}%
286     }%
287 }%
288 }%Hook
289 }{}%@ifundefined
290 }%class later
291 }{}

```

4.2.2 Theorems

```

292 \ltx@ifundefined{@opargbegintheorem}{}{%
293     \let\NRorg@opargbegintheorem\opargbegintheorem
294     \def\@opargbegintheorem#1#2#3{%
295         \NR@getttitle{#3}%
296         \NRorg@opargbegintheorem{#1}{#2}{#3}%
297     }%
298 }
299 \AtBeginDocument{%
300     \ifpackageloaded{amsthm}{%
301         \let\NRorg@begintheorem\begintheorem
302         \begingroup
303             \edef\x{\macro:\string#1\string#2[\string#3]}%
304             \@onelevel@sanitize\x
305             \def\y#1->#2\@nil{#1}%
306             \edef\z{\expandafter\y\meaning\@begintheorem->\@nil}%
307             \@onelevel@sanitize\z
308             \expandafter\endgroup
309             \ifx\x\z
310                 \def\@begintheorem#1#2[#3]{%
311                     \NR@getttitle{#3}%
312                     \NRorg@begintheorem{#1}{#2}[\string#3]}%
313                 }%
314             \fi
315         }{}%
316 }

```

4.3 Referencing stuff

We default the label and hypertext reference to be empty.

```

317 \providecommand*{\@currentlabelname}{}
318 \providecommand*{\@currentHref}{}

```

Since the second part of the preserved reference now has five parts (number, page, name, hypertext reference and file), we need extra utility macros:

```

\@firstoffive
319 \long\def\@firstoffive#1#2#3#4#5{#1}

\@secondoffive
320 \long\def\@secondoffive#1#2#3#4#5{#2}

\@thirdoffive
321 \long\def\@thirdoffive#1#2#3#4#5{#3}

```

```
\@fourthoffive
322 \long\def\@fourthoffive#1#2#3#4#5{#4}
```

```
\@fifthoffive
323 \long\def\@fifthoffive#1#2#3#4#5{#5}
```

We have to redefine `\ref`, `\Ref` and `\pageref` to know about extra reference elements. Make them robust, and compatible with Babel. We also define starred versions so that it doesn't depend on `hyperref` if they are defined or not. We use the same internal names as `hyperref`. The Babel switch is mimicked if not already defined. Some support for package `showkeys` is implemented. If option `notref` of that package is set, `\SK@ref` has the meaning of `\@empty`.

```
\@safe@activetrue
324 \providecommand*\@safe@activetrue{}%
```

```
\@safe@activesfalse
325 \providecommand*\@safe@activesfalse{}%
```

```
\NR@ref@showkeys
326 \newcommand\NR@ref@showkeys[1]{}%
```

```
\NR@setref
327 \def\NR@setref#1{%
328   \begingroup
329     \@safe@activetrue
330     \expandafter
331   \endgroup
332   \expandafter\NR@@setref\csname r@#1\endcsname
333 }
```

```
\NR@@setref
334 \def\NR@@setref#1{%
335   \ifx\@undefined#1%
336     \let#1\relax
337   \fi
338   \@setref#1%
339 }
```

```
\T@ref
340 \def\T@ref#1{%
341   \NR@ref@showkeys{#1}%
342   \NR@setref{#1}\@firstoffive{#1}%
343 }%
```

```
\@refstar
344 \def\@refstar#1{%
345   \NR@ref@showkeys{#1}%
346   \NR@setref{#1}\@firstoffive{#1}%
347 }%
```

```

\T@pageref
348 \def\T@pageref#1{%
349   \NR@ref@showkeys{#1}%
350   \NR@setref{#1}\@secondoffive{#1}%
351 }%

\@pagerefstar
352 \def\@pagerefstar#1{%
353   \NR@ref@showkeys{#1}%
354   \NR@setref{#1}\@secondoffive{#1}%
355 }%

\T@Ref
356 \def\T@Ref#1{%
357   \NR@ref@showkeys{#1}%
358   \NR@setref{#1}\NR@MakeUppercaseFirstOfFive{#1}%
359 }%
360 \def\NR@MakeUppercaseFirstOfFive#1#2#3#4#5{%
361   \MakeUppercase#1%
362 }%

\@Refstar
363 \def\@Refstar#1{%
364   \NR@ref@showkeys{#1}%
365   \NR@setref{#1}\NR@MakeUppercaseFirstOfFive{#1}%
366 }%

367 \ifNR@showkeys
368   \ifx\SK@ref\@empty
369   \else
370     \renewcommand\NR@ref@showkeys[1]{%
371       \@safe@activetrue
372       \SK@\SK@ref{#1}%
373       \@safe@activesfalse}
374   \fi
375 \fi

```

Package `hyperref` uses the same definitions of `\ref`, `\Ref` and `\pageref` but has to redefine the non-starred command to add the hyperlink support. `\DeclareRobustCommand` is used by `hyperref`. Package `nameref` can be loaded before, after `hyperref` or after `hyperref`'s definitions in `\AtBeginDocument`. We have to postpone the definition to `\AtBeginDocument` to avoid that `showkeys` overwrites them again.

```

376 \AddToHook{begindocument}{%

```

```

\ref
377 \DeclareDocumentCommand\ref{s}
378   {\IfBooleanTF{#1}{\@refstar}{\T@ref}}%

```

```

\pageref
379 \DeclareDocumentCommand\pageref{s}
380   {\IfBooleanTF{#1}{\@pagerefstar}{\T@pageref}}%

```

\Ref

```
381 \DeclareDocumentCommand\Ref{s}
382 {\IfBooleanTF{#1}{\@Refstar}{\T@Ref}}%
383 }
384 \DeclareHookRule{begindocument}{showkeys}{before}{nameref}
```

4.4 Usage and frontend

Access the (third) name part with \nameref;

\T@nameref

```
385 \def\T@nameref#1{%
386 \NR@ref@showkeys{#1}%
387 \begingroup
388 \let\label\@gobble
389 \NR@setref{#1}\@thirdoffive{#1}%
390 \endgroup
391 }%
```

\@namerefstar

```
392 \def\@namerefstar#1{%
393 \NR@ref@showkeys{#1}%
394 \begingroup
395 \let\label\@gobble
396 \NR@setref{#1}\@thirdoffive{#1}%
397 \endgroup
398 }%
```

\nameref

```
399 \@ifundefined{nameref}
400 {
401 \NewDocumentCommand\nameref{s}
402 {\IfBooleanTF{#1}{\@namerefstar}{\T@nameref}}
403 }
404 {
405 \PackageWarning{nameref}{Redefining \string\nameref}
406 \RenewDocumentCommand\nameref{s}
407 {\IfBooleanTF{#1}{\@namerefstar}{\T@nameref}}
408 }
```

\Nameref An extended form which gives title and page number. Not really useful, quotes are english, and no starred version. varioref can do that better. Remove??

```
409 \def\Nameref#1{`\nameref{#1}' on page~\pageref{#1}}
```

\Sectionformat The default for \Sectionformat

```
410 \providecommand\Sectionformat[2]{#1}
```

4.5 Package ifthen support

Package ifthen's `\isodd` does not work with `\pageref` because of the extra link and the star form. Therefore we need an expandable variant.

Unfortunately there is no hook in `\ifthenelse` in order to provide expandable versions without link of `\ref` and `\pageref`. As possible target I could only find `\begingroup`: Changed/disabled 2022-04-13: ifthen takes care itself to change `\pageref` to an expandable version.

```

411 \ifundefined{@kernel@pageref@exp}
412   {\ifpackageloaded{ifthen}{%
413     \let\NROrg@ifthenelse\ifthenelse
414     \def\ifthenelse{%
415       \let\begingroup\NR@TE@begingroup
416       \NROrg@ifthenelse
417     }%
418     \let\NROrg@begingroup\begingroup
419     \def\NR@TE@begingroup{%
420       \let\begingroup\NROrg@begingroup
421       \begingroup
422       \def\ref##1{\getrefbykeydefault{##1}{}{??}}%
423       \def\pageref##1{\getrefbykeydefault{##1}{page}{0}}%
424     }%
425   }}{}

```

4.6 Compatibility with varioref

[This section was derived by Corey Minyard minyard@acm.org from the `varioref` package] Changed in 2019-09-12 by Frank Mittelbach to adapt to changes in `varioref`

```

426 \AtBeginDocument{%
427   \ifx\csname @vppageref\endcsname\relax
428   \else
This requires a varioref newer than 2019-09-12
429     \let\NR@@vppageref\@vppageref
430     \def\@vppageref#1[#2]#3{%
431       \begingroup
432         \csname @safe@activestrue\endcsname
433         \edef\x{#3}%
434         \@onelevel@sanitize\x
435         \toks@{%
436           \NR@@vppageref{#1}[{#2}]%
437         }%
438         \edef\x{\endgroup
439           \the\toks@{x}%
440         }%
441       \x
442     }%
443     \DeclareRobustCommand\vnameref[1]{%
444       \unskip~\nameref{#1} %
445       \@vppageref[\unskip]{#1}%
446     }%
447   \fi
448 }

```

4.7 Support for package listings

```

449 \AtBeginDocument{%
450   \ifpackageloaded{listings}{%
451     \ifundefined{NR@nopatch@listings}
452       {%
453         \let\NR@org@lst@MakeCaption\lst@MakeCaption
454         \def\lst@MakeCaption{%
455           \ifx\lst@label\@empty
456             \else
457               \let\@currentlabelname\lst@@caption
458             \fi
459           \NR@org@lst@MakeCaption
460         }%
461       }{}%
462     }{}%
463 }
464 \end{package}

```

5 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

Symbols		
\@@@	..... 6	\@ifl@t@r 28, 85
\@@vpageref	.. 429, 430	\@ifpackageloaded .
\@Refstar	.... 363, 382	.. 16, 207, 217,
\@auxout	.....	243, 300, 412, 450
	33, 54, 72, 97, 116	\@ifundefined
\@begintheorem	....	18, 87, 130, 137,
....	301, 306, 310	142, 162, 209,
\@bsphack	. 30, 50, 67, 89	218, 233, 245,
\@caption	.... 210, 211	258, 399, 411, 451
\@chapter	. 160, 172, 179	\@kernel@reserved@label@data
\@currentHref	.....	..... 35
	35, 59, 77, 102, 318	\@namerefstar
\@currentlabel	34, 56, 74	.... 392, 402, 407
\@currentlabelname	8,	\@nil
	9, 10, 35, 58, 76,	.... 5, 11, 305, 306
	101, 126, 317, 457	\@onelevel@sanitize
\@empty	... 224, 368, 455	.. 8, 304, 307, 434
\@esphack	37, 63, 81, 110	\@opargbegintheorem
\@fifthoffive	..... 323	..... 293, 294
\@firstoffive	.....	\@pagerefstar . 352, 380
	319, 342, 346	\@part
\@for	..... 115	..... 158, 164
\@fourthoffive	.... 322	\@refstar
\@gobble	..... 388, 395	.... 344, 378
\@ifclasslater	.... 255	\@safe@activesfalse
\@ifclassloaded	176, 254	..... 325, 373
\@ifdefinable	..... 281	\@safe@activetrue
		.... 324, 329, 371
		\@schapter
		... 161, 202
		\@secondoffive
		.... 51, 69, 91, 114,
		263, 302, 328,
		\@sect
		..... 128, 130
		\@setref
		..... 338
		\@spart
		..... 159, 168
		\@sssect
		..... 136, 137
		\@tempa
		96, 107, 115,
		117, 118, 223, 224
		\@thirdoffive
		..... 321, 389, 396
		\@undefined
		..... 335
		\@vpageref
		..... 445
		\@writetocindent@
		113
		A
		\addtobeamertemplate
		..... 278
		\AddToHook
		... 274, 376
		\AddToHookWithArguments
		..... 45
		\AtBeginDocument
		206,
		242, 299, 426, 449
		B
		\beamer@descriptionitem
		..... 282, 283
		\begingroup
		. 17, 31,
		51, 69, 91, 114,
		263, 302, 328,

387, 394, 415, 418, 420, 421, 431			
C		F	
\ch@pt@c .. 183, 188, 193		\fi 44, 83, 108, 109, 153, 194, 195, 196, 227, 314, 337, 374, 375, 447, 458	\LT@c@ption .. 220, 221
\csname 118, 261, 262, 265, 268, 332, 427, 432		\fmtversion 28, 85	\ltx@empty 5, 11, 183, 187
			\ltx@GlobalAppendToMacro 25
			\ltx@ifUndefined 143, 145, 177, 180, 231, 292
			\ltx@label 85
D		G	M
\DeclareDocumentCommand 377, 379, 381		\getrefbykeydefault 422, 423	\M@sect 147, 148
\DeclareHookRule .. 384		\GetTitleString ... 125	\MakeUppercase 361
\DeclareRobustCommand 443		\GetTitleStringResult 126	\meaning 306
\def . 5, 6, 7, 30, 45, 49, 52, 66, 70, 88, 92, 95, 113, 124, 131, 138, 148, 164, 168, 172, 179, 186, 202, 211, 221, 223, 235, 247, 260, 265, 294, 305, 310, 319, 320, 321, 322, 323, 327, 334, 340, 344, 348, 352, 356, 360, 363, 385, 392, 409, 414, 419, 422, 423, 430, 454		\global 20	\MessageBreak ... 41, 42
\descriptionlabel 234, 235			
\do 115		I	N
E		\if@filesw 90	\Nameref 409
\edef 9, 96, 264, 303, 306, 433, 438		\if@nobreak 108	\nameref .. 399, 409, 444
\else 39, 151, 185, 189, 192, 225, 369, 428, 456		\IfBooleanTF .. 378, 380, 382, 402, 407	\newcommand 326
\endcsname 118, 261, 262, 265, 268, 332, 427, 432		\ifheadnameref 149, 190	\newcounter 129
\endgroup 22, 36, 62, 80, 106, 122, 264, 308, 331, 390, 397, 438		\ifNR@showkeys 14, 65, 367	\NewDocumentCommand 401
\expandafter 10, 106, 188, 193, 261, 265, 268, 279, 306, 308, 330, 332		\ifthenelse .. 413, 414	\newif 14
		\ifvmode 108	\newlabel 34, 55, 73, 98, 117
		\ifx 38, 183, 187, 224, 309, 335, 368, 427, 455	\nobreak 108
		\immediate 116	\noexpand 95, 265, 267, 268
		\inserttheoremaddition 279	\NR@@caption . 210, 213
			\NR@@setref .. 332, 334
		L	\NR@@vpageref . 429, 436
		\label 38, 40, 43, 49, 86, 388, 395	\NR@chapter 160, 174, 198
		\label@hook 24, 53, 71, 93	\NR@gettitle .. 124, 133, 139, 150, 152, 165, 169, 173, 181, 184, 188, 191, 193, 203, 212, 226, 236, 248, 267, 279, 284, 295, 311
		\label@name 45, 52, 70, 92	\NR@label@copy 30, 38, 43
		\let 43, 86, 94, 126, 128, 136, 147, 158, 159, 160, 161, 210, 220, 234, 244, 261, 282, 293, 301, 336, 388, 395, 413, 415, 418, 420, 429, 453, 457	\NR@MakeUppercaseFirstOfFive 358, 360, 365
		\long 164, 168, 211, 265, 319, 320, 321, 322, 323	\NR@part 158, 166
		\lst@@caption 457	\NR@PatchBeamer 260, 275, 276, 277
		\lst@label 455	\NR@ref@showkeys .. . 326, 341, 345, 349, 353, 357, 364, 370, 386, 393
		\lst@MakeCaption 453, 454	\NR@sanitize@labelname 7, 26
			\NR@schapter . 161, 204
			\NR@sect 128, 134

<code>\NR@setref</code> 327 , 342 , 346 , 350 , 354 , 358 , 365 , 389 , 396		
<code>\NR@showkeysfalse</code> .. 15		
<code>\NR@showkeystrue</code> ... 20		
<code>\NR@spart</code> 159 , 170		
<code>\NR@ssect</code> 136 , 140		
<code>\NR@strip@period</code> . 5 , 10		
<code>\NR@TE@begingroup</code> 415 , 419		
<code>\NR@temp</code> 186 , 187		
<code>\NRorg@beamer@descriptionlabel</code> 281 , 282 , 285		
<code>\NRorg@begingroup</code> 418 , 420		
<code>\NRorg@begintheorem</code> 301 , 312		
<code>\NRorg@descriptionlabel</code> 234 , 237		
<code>\NRorg@ifthenelse</code> 413 , 416		
<code>\NRorg@lst@MakeCaption</code> 453 , 459		
<code>\NRorg@LT@caption</code> 220 , 222		
<code>\NRorg@M@ssect</code> . 147 , 154		
<code>\NRorg@opargbegintheorem</code> 293 , 296		
<code>\NRorg@ttl@ssect@i</code> 244 , 249		
	P	T
	<code>\PackageWarning</code> 40 , 405	<code>\T@nameref</code> 385 , 402 , 407
	<code>\pageref</code> .. 379 , 409 , 423	<code>\T@pageref</code> ... 348 , 380
	<code>\protect</code> 95	<code>\T@Ref</code> 356 , 382
	<code>\protected@write</code> 33 , 54 , 72	<code>\T@ref</code> 340 , 378
	<code>\providecommand</code> 24 , 317 , 318 , 324 , 325 , 410	<code>\the</code> 439
		<code>\thepage</code> 34 , 57 , 75 , 94 , 100
		<code>\thesubequation</code> 99
		<code>\toks@</code> 435 , 439
		<code>\ttl@ssect@i</code> .. 244 , 247
	R	U
	<code>\Ref</code> 381	<code>\unskip</code> 444 , 445
	<code>\relax</code> ... 6 , 94 , 336 , 427	<code>\UseHookWithArguments</code> 32
	<code>\renewcommand</code> . 283 , 370	
	<code>\RenewDocumentCommand</code> 406	
	<code>\RequirePackage</code> . 2 , 3 , 4	
	S	V
	<code>\Sectionformat</code> 134 , 140 , 410	<code>\vnameref</code> 443
	<code>\setcounter</code> 132	
	<code>\SK@</code> 68 , 372	W
	<code>\SK@@label</code> 68	<code>\write</code> 97 , 116
	<code>\SK@@ref</code> 372	
	<code>\SK@ref</code> 368	X
	<code>\slabel</code> 87	<code>\x</code> 264 , 272 , 303 , 304 , 309 , 433 , 434 , 438 , 439 , 441
	<code>\space</code> 40	
	<code>\string</code> .. 34 , 40 , 55 , 73 , 98 , 117 , 303 , 405	Y
	<code>\strip@period</code> 6	<code>\y</code> 305 , 306
		Z
		<code>\z</code> 306 , 307 , 309