

# The footnoterange package

H.-Martin Münch  
<Martin.Muench at Uni-Bonn.de>

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## Abstract

This package provides the environments `footnoterange` and `footnoterange*`. Multiple footnotes inside these environments are not referenced as e.g. “<sup>1 2 3</sup>” but as “<sup>1-3</sup>”, i.e. the range (from first to last referred footnote at that place) is given. Depending on loading of `hyperref` and use of its `hyperfootnotes`-option the references are hyperlinked. (References to footnotes in `footnoterange*` are never hyperlinked.) The example additionally demonstrates how other footnote-number-representations (`\Roman`, `\roman`, `\Alph`, `\alph`, `\fnsymbol`) are possible, especially for more footnotes than letters in the alphabet or symbols in `fnsymbol`. Creation of smaller link boxes for footnotes is explained in the documentation.

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# 1 Introduction

This L<sup>A</sup>T<sub>E</sub>X package provides the environments `footnoterange` and `footnoterange*`. Multiple footnotes inside these environments are not referenced as e.g. “<sup>1 2 3</sup>” but as “<sup>1–3</sup>”, i.e. the range (from first to last referred footnote at that place) is given. Depending on loading of `hyperref` and use of its `hyperfootnotes`-option the references are hyperlinked. References to footnotes in `footnoterange*` are never hyperlinked.

`\footnotemark\footnotetext` instead of `\footnote` is not supported inside `footnoterange` and `footnoterange*` environments.

The example additionally demonstrates how other footnote-number-representations (`\Roman`, `\roman`, `\Alph`, `\alph`, `\fnsymbol`) are possible, especially for more footnotes than letters in the alphabet or symbols in `fnsymbol`.

Creation of smaller link boxes for footnotes is explained in the following section Usage.

## 2 Usage

Just load the package placing

```
\usepackage{footnoterange}
```

in the preamble of your L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> source file. There are no options to be used. The package should be loaded after `hyperref` (if that package is used) and after any other package redefining footnotes. Usage of the `footnoterange` (or `footnoterange*`) environment is simple: Just encapsulate the footnotes, which shall be referred as range instead of referencing as single ones (see the example file).

About hyperlinks:

Footnote-references in a `footnoterange*` environment are never hyperlinked.

Footnote-references in a `footnoterange` environment may be hyperlinked:

- When the `hyperref` package is not loaded, they are not hyperlinked (naturally).
- When the `hyperref` package is loaded, it depends on the `hyperfootnotes` option of the `hyperref` package:
  - With `hyperfootnotes=true`, the references are hyperlinked.
  - With `hyperfootnotes=false`, the references are not hyperlinked.

`\footnotes` inside of the `footnoterange/footnoterange*` environment can use the optional parameter, i.e. `\footnote[42]{text}` even if this is the third footnote. When giving ranges as reference, this does not seem to be such a good idea, if this is not done consistently (i.e. footnotes [42], [43], [44] resulting in 42–44 is OK, but [42] (original 2), unchanged 3, unchanged 4 resulting in 42–4 is confusing). A warning about these changed footnotemarks is written into the `.log`-file.

When there is only a single footnote in a `footnoterange` environment, this does not produce some reference like “<sup>7–7</sup>”, but only one footnotemark is used automatically. Because it is strange to use a `footnoterange` environment without a range of footnotes, an info is written into the `.log`-file about this.

The usage of other footnote-number-representations (e.g. `\Roman`, `\roman`, `\Alph`, `\alph`, `\fnsymbol`) is also possible, but two things must be taken into account: The number of footnote references is restricted (for example with `\Alph` only references A to Z are possible), which can be fixed e.g. with the <https://ctan.org/pkg/alphalph> package (see `footnoterange-example`), and references to footnote-symbol-ranges (`\fnsymbol`) might not be very clear.

The link boxes for the footnotes span the line-height. If smaller boxes are wanted, this can be accomplished by:

- making a copy of `footnoterange.sty`
- renaming the copy to `footnoterangesb.sty`
- in `\newcommand{\fnr@ifhyperfnrA}{...}` and `\newcommand{\fnr@ifhyperfnrN}{...}` removing the `\hyperref[fnr:\arabic\@mpfn]` and both `\hyperref[fnr:\fnr@first]` (while *not* removing their arguments!)
- replacing the first `\ref*` in `\newcommand{\fnr@ifhyperfnrA}{...}` and the first and second `\ref*` in `\newcommand{\fnr@ifhyperfnrN}{...}` by `\ref` (and saving the `.sty` file)
- moving the `footnoterangesb.sty` into your private `texmf-local` tree
- refreshing the file name databases, for example, T<sub>E</sub>X Live users run `texhash` or `mktexlsr`.
- using `\usepackage{footnoterangesb}` instead of `\usepackage{footnoterange}` in your document.
- Regular footnote(links) are *not* changed by this!

## Options

The `footnoterange` package takes no options.

## 3 Alternatives

The `fnpct` (<https://ctan.org/pkg/fnpct>), 2021-01-21, v1.0, and newer *supports ranges for multiple footnotes natively*. For older versions the setting of multiple footnotes (`\multfootnote`), suppressing of footnotemarks (`*`), and customizing the multi-footnote-separator (`\setfnpct{mult-fn-sep={ something }}`) can be combined with stepping of the footnote-counter to give a `footnoterange`:

```
\documentclass{article}
\usepackage{hyperref}
\usepackage{fnpct}
\begin{document}
The three little pigs built their houses
out of straw\footnote{not to be confused with hay},
sticks\footnote{or lumber according to some sources}
and bricks%
\makeatletter%
\setfnpct{mult-fn-sep={--}}%
\multfootnote{probably fired clay bricks\addtocounter\@mpfn{+1}};%
*or something else;%
what do I know}. %
\makeatother%
\end{document}
```

If you programmed or found another alternative, which is available at <https://www.CTAN.org/>, please send an e-mail to me with the name, location at CTAN, and a short notice, and I will probably list it here.

## 4 Example

```
1 (*example)
2 \NeedsTeXFormat{LaTeX2e}[2022-11-01]
3 \documentclass[british]{article}[2022/07/02]% v1.4n Standard LaTeX document class
4 \usepackage[extension=pdf,%
5 plainpages=false,%
6 pdfpagelabels=true,%
7 hyperindex=false,%
8 pdflang={en},%
9 pdftitle={footnoterange package example},%
10 pdfauthor={H.-Martin Muench},%
11 pdfsubject={Example for the footnoterange package},%
12 pdfkeywords={LaTeX, footnoterange},%
13 pdfview=FitH,%
14 pdfstartview=FitH,%
15 pdfpagelayout=OneColumn,%
16 hyperfootnotes=true%
17 ]{hyperref}[2023-02-07]% v7.00v Hypertext links for LaTeX
18
19 \usepackage{footnoterange}[2023-02-25]% v1.1a References to ranges of footnotes (HMM)
20
21 % For footnotes labelled after Z, z, and ¶ (Pilcrow character):
22 \usepackage{alphalph}[2019/12/09]% v2.6 Convert numbers to letters (HO)
23 \makeatletter
24 \NewCommandCopy{\fnrfnssymbol}{\@fnssymbol}
25 \makeatother
26 \newalphalph{\fnssymbolfnr}[mult]{\fnrfnssymbol}{5}
27
28 \listfiles
29 \begin{document}
30 \pagenumbering{arabic}
31 \section*{Example for footnoterange}
32
33 This example demonstrates the use of package\newline
34 \textsf{footnoterange}, v1.1a as of 2023-02-25,\newline
35 references to ranges of footnotes (HMM).\newline
36 The package does not use options.\newline
37 \verb|footnoterange-example.pdf| can be created by\newline
38 \verb|pdflatex footnoterange-example.tex|,\newline
39 and \verb|footnoterange-example.tex| can be created by\newline
40 \verb|tex footnoterange.dtx|.\newline
41 \verb|footnoterange.dtx| is at
42 \url{https://ctan.org/pkg/footnoterange}.\newline
43
44 \noindent For more details please see the documentation!
45
46 This\footnote{Lorem} text bears a multiplicity of footnotes.
47 Because the \verb|hyperref| package is used with option
48 \verb|hyperfootnotes=true|, the footnotes
49 \begin{footnoterange}
50 \footnote{ipsum}%
51 \footnote{dolor}%
52 \footnote{sit}%
53 \footnote{amet,}%
54 \footnote{consectetur}%
55 \footnote{adipisicing}%
56 \footnote{elit,}%
57 \footnote{sed}%
58 \end{footnoterange}
59 are hyperlinked.\footnote{do eiusmod tempor incididunt %
60 ut labore et dolore magna aliqua.} Using
61 \verb|hyperfootnotes=false| or not using \verb|hyperref|
```

```

62 will remove the hyperlinks to the footnotes.\medskip
63
64 This text also bears a multiplicity of footnotes,
65 but due to the use of the starred
66 \begin{footnoterange*}
67 \footnote{Ut enim}%
68 \footnote{ad minim veniam,}%
69 \footnote{quis}%
70 \footnote{nostrud}%
71 \footnote{exercitation}%
72 \footnote{ullamco}%
73 \footnote{laboris}%
74 \footnote{nisi}%
75 \end{footnoterange*}
76 form of the environment they are not
77 hyperlinked.\footnote{ut aliquip ex ea commodo consequat.}
78 \medskip
79
80 The use of the optional parameter for footnotes%
81 \begin{footnoterange}%
82 \footnote[101]{Duis}%
83 \footnote[102]{aute}%
84 \footnote[103]{irure}%
85 \footnote[104]{dolor}%
86 \footnote[105]{in reprehenderit}%
87 \end{footnoterange}%
88 {} is also possible, but should be used consistently.
89 \pagebreak
90
91 When there is only one footnote
92 \begin{footnoterange}
93 \footnote{a single footnote}
94 \end{footnoterange}
95 in the \verb|footnoterange| environment, only one
96 footnotemark is used and an info is written into the
97 \verb|log|-file.
98
99 \bigskip
100
101 The usage of other footnote-number-representations
102 (e.\,g.\~\verb|\Roman|
103 \renewcommand{\thefootnote}{\Roman{footnote}}%
104 \begin{footnoterange}%
105 \footnote{Nam arcu libero,}%
106 \footnote{nonummy eget,}%
107 \footnote{consectetur id,}%
108 \footnote{vulputate a,}%
109 \footnote{magna.}%
110 \end{footnoterange}%
111 , \verb|\roman|
112 \renewcommand{\thefootnote}{\roman{footnote}}%
113 \begin{footnoterange}%
114 \footnote{in voluptate}%
115 \footnote{velit}%
116 \footnote{esse}%
117 \footnote{cillum}%
118 \footnote{dolore}%
119 \end{footnoterange}%

```

```

120 , \verb|\Alph|%
121 \renewcommand*{\thefootnote}{\AlphAlph{\value{footnote}}}%
122 \begin{footnoterange}%
123 \footnote{eu fugiat}%
124 \footnote{nulla}%
125 \footnote{pariatur.}%
126 \footnote{Excepteur}%
127 \footnote{sint}%
128 \end{footnoterange}%
129 , \verb|\alph|%
130 \renewcommand{\thefootnote}{\alphalph{\value{footnote}}}%
131 \begin{footnoterange}%
132 \footnote{occaecat}%
133 \footnote{cupidatat}%
134 \footnote{non proident,}%
135 \footnote{sunt}%
136 \footnote{in culpa}%
137 \end{footnoterange}%
138 , \verb|\fnsymbol|%
139 \renewcommand{\thefootnote}{\protect\fnsymbolfnr{\arabic{footnote}}}%
140 \begin{footnoterange}%
141 \footnote{qui officia}%
142 \footnote{deserunt}%
143 \footnote{mollit}%
144 \footnote{anim}%
145 \footnote{id est laborum.}%
146 \end{footnoterange}%
147 ) is also possible, but two things must be taken into account:
148
149 \begin{enumerate}
150 \item By default the number of footnote references is restricted
151       (for example with \verb|\Alph| only references A to Z are possible),
152       which needs to be fixed. In this example the
153       \href{https://ctan.org/pkg/alphalph}{\texttt{alphalph}} package}
154       is used for this purpose.
155 \item References to footnote-symbol-ranges (\verb|\fnsymbol|)
156       might not be very clear. For example, if the symbols %
157       \newcounter{fnrxcnt}%
158       \setcounter{fnrxcnt}{1}%
159       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 1
160       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 2
161       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 3
162       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 4
163       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 5
164       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 6
165       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 7
166       {} are used, %
167       \setcounter{fnrxcnt}{2}\fnsymbolfnr{\value{fnrxcnt}}--%
168       \setcounter{fnrxcnt}{7}\fnsymbolfnr{\value{fnrxcnt}} %
169       means second to seventh footnote.\par%
170       But if %
171       \newalphalph{\fnsymbolfnr}[mult]{\fnrfnsymbol}{6}%
172       \setcounter{fnrxcnt}{1}%
173       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 1
174       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 2
175       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 3
176       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 4
177       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 5
178       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 6
179       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 7
180       \fnsymbolfnr{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 8
181       {} are used, %

```

```

182 \setcounter{fnrxcnt}{2}\fnsymbolfnri{\value{fnrxcnt}}--%
183 \setcounter{fnrxcnt}{8}\fnsymbolfnri{\value{fnrxcnt}} %
184 means second to eighth footnote.\par%
185 And if %
186 \newalphalph{\fnsymbolfnrx}[mult]{\fnrfnsymbol}{3}%
187 \setcounter{fnrxcnt}{1}%
188 \fnsymbolfnrx{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 1
189 \fnsymbolfnrx{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 2
190 \fnsymbolfnrx{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 3
191 \fnsymbolfnrx{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 4
192 \fnsymbolfnrx{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 5
193 \fnsymbolfnrx{\value{fnrxcnt}}\stepcounter{fnrxcnt}% 6
194 {} are used, %
195 \setcounter{fnrxcnt}{2}\fnsymbolfnrx{\value{fnrxcnt}}--%
196 \setcounter{fnrxcnt}{5}\fnsymbolfnrx{\value{fnrxcnt}} %
197 means second to fifth footnote.%
198 \end{enumerate}
199
200 \newpage
201
202 The \texttt{Lorem ipsum} text for the footnotes was taken from
203 \url{https://www.lipsum.com/}, where as original source
204 sections~1.10.32 and 1.10.33 of
205 \textquotedblleft de Finibus Bonorum et Malorum\textquotedblright{}
206 by Cicero, written in 45~BCE, is given.
207
208 \end{document}
209 /example)

```

## 5 The implementation

We start off by checking that we are loading into L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> and announcing the name and version of this package.

```

210 (*package)
211 \NeedsTeXFormat{LaTeX2e}[2022-11-01]
212 \ProvidesPackage{footnoterange}[2023-02-25 v1.1a %
213 References to ranges of footnotes (HMM)]
214 %% Provides the footnoterange and footnoterange* environments
215 %% to refer to ranges of footnotes.
216
217 \@ifl@t@r{\fmtversion{2022/11/01}}{% would have understood
218 % \IfFormatAtLeastTF{2022-11-01}{<true code>}{<false code>}
219 }{\PackageError{footnoterange}{%
220     Newer LaTeX format needed or older footnoterange package%
221     }{Needed LaTeX format version: 2022-11-01 or newer.\MessageBreak%
222     Found\space\space LaTeX format version: \fmtversion.\MessageBreak%
223     Either update your TeX distribution\MessageBreak%
224     or use an archived version of footnoterange\MessageBreak%
225     (see section History in the documentation).\MessageBreak%
226     }
227 }
228

```

We use `\ifHy@hyperfootnotes ... \else ... \fi`, but when the `hyperref` package has not been loaded, `\ifHy@hyperfootnotes` is not defined, and L<sup>A</sup>T<sub>E</sub>X relates the `\else` and/or `\fi` (wrongly) to other `\ifs` or groups. Therefore the `\ifHy@hyperfootnotes` are placed in their own commands, which are not looked at when the `hyperref` package has not been loaded.

`\fnr@ifhyperrfn`

```
229 \newcommand{\fnr@ifhyperrfn}{%
230   \ifHy@hyperfootnotes% option hyperfootnotes=true
231   \addtocounter{Hfootnote}{+1}%
232   % Code from the hyperref package
233   \global\let\Hy@saved@currentHref\@currentHref%
234   \hyper@makecurrent{Hfootnote}%
235   \global\let\Hy@footnote@currentHref\@currentHref%
236   \global\let\@currentHref\Hy@saved@currentHref%
237   % End of code from the hyperref package
238   \fi%
239 }
240
```

`\fnr@rangefootnote` The `\fnr@rangefootnote` is the internal replacement for the original `\footnote` command inside of a `footnoterange` environment.

```
241 \newcommand{\fnr@rangefootnote}[2][\empty]{%
    #1 contains the optional argument, which is predefined as \empty.
242   \nolinebreak%
243   % no \footnotemark here
244   \addtocounter{\mpfn}{+1}%
245   \IfPackageLoadedTF{hyperref}{\fnr@ifhyperrfn}{\relax}%
```

See the explanation before the declaration of the `\fnr@ifhyperrfn` command!

```
246 \xdef\fnr@opt{#1}% contains the optional argument
247 \xdef\fnr@arabic{\arabic{\mpfn}}%
248 \protected@edef\fnr@formatted{\thefootnote}%
```

The `\footnotemark` is not set (yet), but the `\footnotetext`, and it gets a label.

```
249 \ifx\fnr@opt\empty\relax%
250   \footnotetext{\label{fnr:\fnr@arabic}#2}%
251 \else%
252   \PackageWarning{footnoterange}{%
253     Custom footnote-numbers used in a footnoterange\MessageBreak%
254     environment: Footnote with natural number\MessageBreak%
255     \ifx\fnr@formatted\fnr@arabic%
256       \fnr@arabic%
257     \else%
258       \space\fnr@arabic\space (\fnr@formatted )%
259     \fi%
260     \MessageBreak%
261     was renumbered to \fnr@opt\MessageBreak%
262   }%
263   \IfPackageLoadedTF{hyperref}{%
264     \footnotetext[#1]{\phantomsection\label{fnr:\fnr@arabic}#2}%
265     }{\footnotetext[#1]{\label{fnr:\fnr@arabic}#2}%
266     }%
267   \fi%
268 }
269
```

`\fnr@ifhyperfnrA` `\ifHy@hyperfootnotes` “encapsulation” again:

```
270 \newcommand{\fnr@ifhyperfnrA}{%
271   \ifHy@hyperfootnotes% option hyperfootnotes=true
272   \hbox{\hyperref[fnr:\fnr@first]{%
273     \@textsuperscript{\normalfont \ref*{fnr:\fnr@first}}}%
274   \else% option hyperfootnotes=false
275   \hbox{\@textsuperscript{\normalfont \ref*{fnr:\fnr@first}}}%
276   \fi%
277 }
278
```

`\fnr@ifhyperfnrN`

```
279 \newcommand{\fnr@ifhyperfnrN}{%
280 \ifHy@hyperfootnotes% option hyperfootnotes=true
281   \hbox{\hyperref[fnr:\fnr@first]{%
282     \@textsuperscript{\normalfont \ref*{fnr:\fnr@first}}}%
283     \@textsuperscript{\normalfont --}%
284     \hyperref[fnr:\arabic\@mpfn]{%
285       \@textsuperscript{\normalfont \ref*{fnr:\arabic\@mpfn}}}}}%
286 \else% option hyperfootnotes=false
287   \hbox{\@textsuperscript{\normalfont \ref*{fnr:\fnr@first}%
288     --\ref*{fnr:\arabic\@mpfn}}}%
289   \fi%
290 }
291
```

`footnoterange` (*env.*) The `footnoterange` environment remembers the next footnote number as `\fnr@first` and the current `\footnote` definition as `\fnr@origfn` and uses `\fnr@rangefootnote` instead.

Because we cannot `\RenewCommandCopy` a command which does not exist, we need to once define `\fnr@origfnmark`.

```
292 \AddToHook{begindocument}{\NewCommandCopy{\fnr@origfnmark}{\footnotemark}}
293
294 \newenvironment{footnoterange}{%
295   % at begin of the footnoterange environment
296   \ifhmode \unskip \fi% FMi
297   \addtocounter\@mpfn{+1}%
298   \xdef\fnr@first{\arabic\@mpfn}%
299   \addtocounter\@mpfn{-1}%
300   \let\fnr@origfn\footnote%
301   \let\footnote\fnr@rangefootnote%
302   \RenewCommandCopy{\fnr@origfnmark}{\footnotemark}%
303   \RenewCommandCopy{\footnotemark}{\fnr@rangefootnotemark}%
304   \ignorespaces% FMi
```

End of the environment:

```
305 }{% at end of the footnoterange environment
306   \ifhmode% FMi
307     \unskip% FMi
```

Remember the spacefactor for restoring after the environment has ended (only in `hmode!`). % FMi

```
308   \xdef\fnr@aftergroup{\spacefactor\the\spacefactor\relax}% FMi
309   \else% FMi
```

Otherwise do something harmless. % FMi

```
310   \xdef\fnr@aftergroup{\relax}%
311   \fi% FMi
```

At the end of the environment the previous definition of `\footnote` is restored

```
312 \let\footnote\fnr@origfn%
313 \RenewCommandCopy{\footnotemark}{\fnr@origfnmark}%
```

and the references are placed:

```
314 \ifx\fnr@first\fnr@arabic\relax% There is only one reference in the environment.
315   \PackageInfo{footnoterange}{%
316     Environment footnoterange used,\MessageBreak%
317     but only one footnote (number \fnr@first ) is contained\MessageBreak}%
318   \IfPackageLoadedTF{hyperref}{\fnr@ifhyperfnrA%
319     }{\hbox{\@textsuperscript{\normalfont \ref{fnr:\fnr@first}}}%
320     }%
321   \else%
```

```

322 \IfPackageLoadedTF{hyperref}{\fnr@ifhyperfnrN%
323   }\hbox{\@textsuperscript{\normalfont \ref{fnr:\fnr@first}}%
324           --\ref{fnr:\arabic\@mpfn}}}%
325   }%
326 \fi%

```

Restore the space-factor after the environment has ended. % FMi

```

327 \aftergroup\fnr@aftergroup% FMi
328 }
329

```

`footnoterange*` (*env.*) The `footnoterange*` environment does the same as the `footnoterange` environment but suppresses all hyperlinks to footnotes inside.

```

330 \newenvironment{footnoterange*}{%
331 % at begin of the footnoterange* environment
332 \ifhmode \unskip \fi% FMi
333 \addtocounter\@mpfn{+1}%
334 \xdef\fnr@first{\arabic\@mpfn}%
335 \addtocounter\@mpfn{-1}%
336 \let\fnr@origfn\footnote%
337 \let\footnote\fnr@rangefootnote%
338 \RenewCommandCopy{\fnr@origfnmark}{\footnotemark}%
339 \RenewCommandCopy{\footnotemark}{\fnr@rangefootnotemark}%
340 \ignorespaces% FMi
341 }{% at end of the footnoterange* environment
342 \ifhmode% FMi
343   \unskip% FMi
344   \xdef\fnr@aftergroup{\spacefactor\the\spacefactor\relax}% FMi
345 \else% FMi
346   \xdef\fnr@aftergroup{\relax}%
347 \fi% FMi
348 \let\footnote\fnr@origfn%
349 \RenewCommandCopy{\footnotemark}{\fnr@origfnmark}%
350 \ifx\fnr@first\fnr@arabic\relax% There is only one reference in the environment.
351   \PackageInfo{footnoterange}{%
352     Environment footnoterange used,\MessageBreak%
353     but only one footnote (number \fnr@first ) is contained\MessageBreak}%
354   \IfPackageLoadedTF{hyperref}{%
355     \hbox{\@textsuperscript{\normalfont \ref*{fnr:\fnr@first}}}%
356     }\hbox{\@textsuperscript{\normalfont \ref{fnr:\fnr@first}}}%
357   }%
358 \else%
359   \IfPackageLoadedTF{hyperref}{%
360     \hbox{\@textsuperscript{\normalfont \ref*{fnr:\fnr@first}}%
361           --\ref*{fnr:\arabic\@mpfn}}}%
362     }\hbox{\@textsuperscript{\normalfont \ref{fnr:\fnr@first}}%
363           --\ref{fnr:\arabic\@mpfn}}}%
364   }%
365 \fi%
366 \aftergroup\fnr@aftergroup% FMi
367 }
368

```

`\fnr@rangefootnotemark` The `footnoterange` package does not handle `\footnotemarks`, but at least the user is made aware of this:

```

369 \newcommand{\fnr@rangefootnotemark}[1][\empty]{%
370 \PackageError{footnoterange}{%
371   \string\footnotemark\space not supported in footnoterange(*) environment%
372 }{The footnoterange package does not handle a \string\footnotemark.\MessageBreak%
373   Either use \string\footnote\string{...\string}\space instead of%
374   \string\footnotemark\space and \string\footnotetext\string{...\string}\MessageBreak%
375   in footnoterange and footnoterange* environments,\MessageBreak%

```

```

376     or do not use those environments around a \string\footnotemark\MessageBreak%
377     (or \string\renewcommand\string{\string\fnr@rangefootnotemark\string}\MessageBreak%
378     with your own fixing code).%
379     }%
380 \xdef\fnr@mopt{#1}%
381 \ifx\fnr@mopt\empty\relax%
382   \fnr@origfnmark%
383 \else%
384   \fnr@origfnmark[#1]%
385 \fi%
386 }
387
388 </package>

```

## 6 Installation

### 6.1 Downloads

Everything is available on CTAN, <https://www.CTAN.org/>, but may need additional packages themselves.

`footnoterange.dtx` For unpacking the `footnoterange.dtx` file and constructing the documentation it is required:

- T<sub>E</sub>XFormat L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> 2022-11-01 or newer: <https://www.CTAN.org>
- document class `ltxdoc`, 2022/06/22, v2.1i, <https://www.ctan.org/pkg/ltxdoc>
- package `holtxdoc`, 2019/12/09, v0.30, <https://www.ctan.org/pkg/holtxdoc>

`footnoterange.sty` The `footnoterange.sty` for L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> (i. e. each document using the `footnoterange` package) requires:

- T<sub>E</sub>XFormat L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> 2022-11-01 or newer: <https://www.CTAN.org>

`footnoterange-example.tex` The `footnoterange-example.tex` requires the same files as all documents using the `footnoterange` package and additionally:

- class `article`, 2022/07/02, v1.4n, from classes: <https://www.ctan.org/pkg/classes>
- package `footnoterange`, 2023-02-25, v1.1a, <https://ctan.org/pkg/footnoterange>  
(Well, it is the example file for this package, and because you are reading the documentation for the `footnoterange` package, it can be assumed that you already have some version of it – is it the current one?)
- package `hyperref`, 2023-02-07, v7.00v, <https://ctan.org/pkg/hyperref>
- package `alphalph`, 2019/12/09, v2.6, <https://ctan.org/pkg/alphalph>

`Oberdiek` All packages of the ‘`oberdiek`’ bundle (especially `alphalph`) are also available in `holtxdoc` a TDS compliant ZIP archive:

`alphalph` <https://mirror.ctan.org/install/macros/latex/contrib/oberdiek.tds.zip>.

It is probably best to download and use this, because the packages in there are quite probably both recent and compatible among themselves.

`hyperref` `hyperref` is not included in that bundle and needs to be downloaded separately, <https://mirror.ctan.org/install/macros/latex/contrib/hyperref.tds.zip>.

`Münch` A hyperlinked list of my (other) packages can be found at <https://ctan.org/author/muench-hm>.

## 6.2 Package, unpacking TDS

**Package.** This package is available on <https://www.CTAN.org>.

<https://mirror.ctan.org/macros/latex/contrib/footnoterange/footnoterange.dtx>  
The source file.

<https://mirror.ctan.org/macros/latex/contrib/footnoterange/footnoterange.pdf>  
The documentation.

<https://mirror.ctan.org/macros/latex/contrib/footnoterange/footnoterange-example.pdf>  
The compiled example file, as it should look like.

<http://mirror.ctan.org/macros/latex/contrib/footnoterange/README>  
The README file.

There is also a `footnoterange.tds.zip` available:

<https://mirror.ctan.org/install/macros/latex/contrib/footnoterange.tds.zip>  
Everything in TDS compliant, compiled format.

which additionally contains

`footnoterange.ins` The installation file.  
`footnoterange.drv` The driver to generate the documentation.  
`footnoterange.sty` The `.sty` file.

For required other packages, please see the preceding subsection.

**Unpacking.** The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain  $\TeX$ :

```
tex footnoterange.dtx
```

About generating the documentation see paragraph 6.4 below.

**TDS.** Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

```
footnoterange.sty      → tex/latex/footnoterange/footnoterange.sty
footnoterange.pdf     → doc/latex/footnoterange/footnoterange.pdf
footnoterange-example.tex → doc/latex/footnoterange/footnoterange-example.tex
footnoterange-example.pdf → doc/latex/footnoterange/footnoterange-example.pdf
footnoterange.dtx     → source/latex/footnoterange/footnoterange.dtx
```

If you have a `docstrip.cfg` that configures and enables `docstrip`'s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

## 6.3 Refresh file name databases

If your  $\TeX$  distribution ( $\TeX$  Live, MiK $\TeX$ , ...) relies on file name databases, you must refresh these. For example,  $\TeX$  Live users run `texhash` or `mktexlsr`.

## 6.4 Some details for the interested

**Unpacking with  $\LaTeX$ .** The `.dtx` chooses its action depending on the format:

**plain  $\TeX$ :** Run `docstrip` and extract the files.

**$\LaTeX$ :** Generate the documentation.

If you insist on using  $\LaTeX$  for `docstrip` (really, `docstrip` does not need  $\LaTeX$ ), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{footnoterange.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

**Generating the documentation.** You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by a configuration file `ltxdoc.cfg`. For instance, put the following line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdfL<sup>A</sup>T<sub>E</sub>X:

```
pdflatex footnoterange.dtx
makeindex -s gind.ist footnoterange.idx
pdflatex footnoterange.dtx
makeindex -s gind.ist footnoterange.idx
pdflatex footnoterange.dtx
```

## 6.5 Compiling the example

The example file, `footnoterange-example.tex`, can be compiled via

```
(pdf)latex footnoterange-example.tex
```

but will need probably at least two compiler runs to get everything right.

`footnoterange-example.tex` can be created by

```
tex footnoterange.dtx.
```

`footnoterange.dtx` is at <https://www.ctan.org/pkg/footnoterange>.

## 7 Acknowledgements

I (H.-Martin Münch) would like to thank HEIKO OBERDIEK for providing a lot of useful packages (from which I also got everything I know about creating a file in `.dtx` format, OK, say it: copying), FRANK MITTELBACH for several bug reports, for code for improving the package, and for pointing me to the `fnpct` package as alternative, WILLIE WONG for reporting a bug and its fix, everybody of the CTAN team for managing CTAN, the `news:comp.text.tex` and `news:de.comp.text.tex` newsgroups, and everybody at <https://tex.stackexchange.com/> for their help in all things T<sub>E</sub>X. This package was created as response to question “Compressing consecutive footnote marks” by user001

(<https://tex.stackexchange.com/users/10127/user001>) on

<https://tex.stackexchange.com/q/44165/6865>.

## 8 History

[2011/02/11 v0.1ff.]

- Some versions at <https://tex.stackexchange.com/q/44165/6865>.

[2012/02/17 v1.0a]

- Package created and uploaded to CTAN.

[2018/10/15 v1.0b]

- Fixed/updated minor details.
- Bug fix: Did not work without `hyperref`, wrong spacefactor.
- Listing the `fnpct` package as alternative.

## [2019/11/24 v1.0c]

- Bug fix: Issue with footnote symbols.
- This version has been archived at <https://web.archive.org/web/20230220154207/https://mirrors.ctan.org/install/macros/latex/contrib/footnoterange.tds.zip>.

## [2023-02-25 v1.1a]

- Converted to UTF-8.
- Updated to L<sup>A</sup>T<sub>E</sub>X format 2022-11-01.
- Example now also demonstrates the usage of footnote-number-representations other than `arabic`: `\Roman`, `\roman`, `\Alph`, `\alph`, `\fnsymbol` (!), especially for more footnotes than A–Z, a–z, \*–¶.
- Creation of smaller link-boxes explained in the documentation.
- Documentation and README updates.

When you find a mistake or have a suggestion for an improvement of this package, please send an e-mail to the maintainer, thanks! (Please see BUG REPORTS in the README.)

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