

The **thumbs** package

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Abstract

This \LaTeX package allows to create one or more customizable thumb index(es), providing a quick and easy reference methode for large documents.

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Save per page about 200 ml water, 2 g CO₂ and 2 g wood:
Therefore please print only if this is really necessary.

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1 Introduction

This package puts running, customizable thumb marks in the outer margin, moving downward as the chapter number (or whatever shall be marked by the thumb marks) increases. Additionally an overview page/table of thumb marks can be added automatically, which gives the respective names of the thumb objects, the page where the object/thumb mark first appears, and the thumb mark itself at the respective position. The thumb marks are probably useful for documents, where a quick and easy way to find e.g. a chapter is needed, for example in reference guides, anthologies, or quite large documents.

There *are* already some packages for creating thumbs, but because none of them did what I wanted, I wrote this new package.¹

2 Usage

2.1 Loading

Load the package placing

```
\usepackage[<options>]{thumbs}
```

in the preamble of your L^AT_EX 2_ε source file.

2.2 Options

options The thumbs package takes the following options:

2.2.1 pagecolor

pagecolor Option **pagecolor** wants to know the background colour of the pages for use with the **xcolor** package. The default value is **white**.

2.2.2 linefill

linefill Option **linefill** wants to know how the line between object (e.g. chapter name) and page number shall be filled at the overview page. Empty option will result in a blank line, **line** will fill the distance with a line, **dots** will fill the distance with dots.

2.2.3 minheight

minheight Option **minheight** wants to know the minimal vertical extension of each thumb mark. This is only useful in combination with option **height=auto** (see below). When the height is automatically calculated and smaller than the **minheight** value, the height is set equal to the given **minheight** value and a new column/page of thumb marks is used. The default value is 47pt ($\approx 16.5\text{ mm} \approx 0.65\text{ in}$).

2.2.4 height

height Option **height** wants to know the vertical extension of each thumb mark. The default value “**auto**” calculates an appropriate value automatically decreasing with increasing number of thumb marks (but fixed for each document). When the height is smaller than **minheight**, this package deems this as too small and instead uses a new column/page of thumb marks. If smaller thumb marks are really wanted, choose a smaller **minheight** (e.g. 0 pt).

2.2.5 width

width Option **width** wants to know the horizontal extension of each thumb mark. The default option-value “**auto**” calculates a width-value automatically: $(\text{\texttt{\textbackslash paperwidth}} - \text{\texttt{\textbackslash textwidth}})$, which is the total width of inner and outer margin, divided by 4. Instead of this, any positive width given by the user is accepted. (Try **width={\texttt{\textbackslash paperwidth}}** in the example!)

2.2.6 distance

distance Option **distance** wants to know the vertical spacing between two thumb marks. The default value is 2 mm.

2.2.7 topthumbmargin

topthumbmargin Option **topthumbmargin** wants to know the vertical spacing between the upper page (paper) border and top thumb mark. The default (**auto**) is 1 inch plus **\voffset** plus **\topmargin**. Dimensions (e.g. 1 cm) are also accepted.

2.2.8 bottomthumbmargin

bottomthumbmargin Option **bottomthumbmargin** wants to know the vertical spacing between the lower page (paper) border and last thumb mark. The default (**auto**) for the position of the last thumb is $1\text{in} + \text{\texttt{\textbackslash voffset}} + \text{\texttt{\textbackslash topmargin}} - \text{\texttt{\textbackslash thumbs@distance}} + \text{\texttt{\textbackslash th@mbheighty}} + \text{\texttt{\textbackslash headheight}} + \text{\texttt{\textbackslash headsep}} + \text{\texttt{\textbackslash textheight}} + \text{\texttt{\textbackslash footskip}} - \text{\texttt{\textbackslash thumbs@distance}} - \text{\texttt{\textbackslash th@mbheighty}}$. Dimensions (e.g. 1 cm) are also accepted.

2.2.9 thumblink

thumblink Option **thumblink** determines, what is hyperlinked at the thumb marks overview page (when the **hyperref** package is used):

- **none** creates *none* hyperlinks
- **title** hyperlinks the *titles* of the thumb marks
- **page** hyperlinks the *page* numbers of the thumb marks
- **titleandpage** hyperlinks the *title and page* numbers of the thumb marks
- **line** hyperlinks the whole *line*, i.e. title, dots (or line or whatsoever) and page numbers of the thumb marks
- **rule** hyperlinks the whole *rule*.

¹Probably this holds true for the motivation of the authors of quite a lot of packages.

2.2.10 verbose

`verbose` Option `verbose=false` (the default) suppresses some messages, which otherwise are presented at the screen and written into the log file. Look for

***** THUMB dimensions *****

in the log file for height and width of the thumb marks as well as top and bottom thumb marks margins.

2.3 Commands to be used in the document

`\addthumb` To add a thumb mark, use the `\addthumb` command, which has these four parameters:

1. a title for the thumb mark (for the thumb marks overview page, e. g. the chapter title),
2. the text to be displayed in the thumb mark (for example the chapter number: `\thechapter`),
3. the colour of the text in the thumb mark,
4. and the background colour of the thumb mark

(parameters in this order) at the page where you want this thumb mark placed (for the first time).

`\addtitlethumb` When a thumb mark shall not or cannot be placed on a page, e. g. at the title page or when using `\includepdf` from `pdfpages` package, but the reference in the thumb marks overview nevertheless shall name that page number and hyperlink to that page, `\addtitlethumb` can be used at the following page. It has five arguments. The arguments one to four are identical to the ones of `\addthumb` (see above), and the fifth argument consists of the label of the page, where the hyperlink at the thumb marks overview page shall link to. The `thumbs` package does *not* create that label! But for the first page the label `pagesLTS.0` can be use, which is already placed there by the used `pagesLTS` package.

`\stopthumb` When a page (or pages) shall have no thumb marks, use the `\stopthumb` command (without parameters). Placing another
`\continuethumb` thumb mark with `\addthumb` or `\addtitlethumb` or using the command `\continuethumb` continues the thumb marks.

`\thumbsoverview` The command `\thumbsoverview` is used to place the overview page(s) for the thumb marks. Its single parameter is used to mark this page/these pages (e. g. in the page header). If these marks are not wished, `\thumbsoverview{}` will generate empty marks in the page header(s). `\thumbsoverview` could be used more than once (for example at the beginning and at the end of the document), but the label `TableOfThumbs` would than be multilpy defined (no great harm done, but hyperlinks will only link to one of the labels).

`\thumbnewcolumn` With the command `\thumbnewcolumn` a new column can be started, even if the current one was not filled. This could be useful e. g. for a dictionary, which uses one column for translations from language A to language B, and the second column for translations from language B to language A. But in that case one probably should increase the size of the thumb marks, so that 26 thumb marks (in case of the latin alphabet) fill one thumb column. Do not use `\thumbnewcolumn` on a page where `\addthumb` was already used, but use `\addthumb` immediately after `\thumbnewcolumn`.

`\thumbsoverviewtocontents` `\addthumbsoverviewtocontents` with two arguments is a replacement for `\addcontentsline{toc}{<level>}{<text>}`, where the first argument of `\addthumbsoverviewtocontents` is for `<level>` and the second for `<text>`. If an entry of the thumbs mark overview shall be placed in the table of contents, `\addthumbsoverviewtocontents` with its arguments should be used immediately before `\thumbsoverview`.

3 Alternatives

- chapterthumb, 2005/03/10, v0.1, by MARKUS KOHM, available at <http://mirror.ctan.org/info/examples/KOMA-Script-3/Anhang-B/source/chapterthumb.sty>; unfortunately without documentation, which is probably available in the book:
Kohm, M., & Morawski, J.-U. (2008): KOMA-Script. Eine Sammlung von Klassen und Paketen für L^AT_EX₂ε, 3., überarbeitete und erweiterte Auflage für KOMA-Script 3, Lehmanns Media, Berlin, Edition dante, ISBN-13: 978-3-86541-291-1, <http://www.lob.de/isbn/3865412912>; in German.
- eso-pic, 2010/10/06, v2.0c by ROLF NIEPRASCHK, available at <http://www.ctan.org/pkg/eso-pic>, was suggested as alternative. If I understood its code right, `\AtBeginShipout{\AtBeginShipoutUpperLeft{\put(...}` is used there, too. Thus I do not see its advantage. Additionally, while compiling the eso-pic test documents with T_EXLive2010 worked, compiling them with *Scientific WorkPlace* 5.50 Build 2960 (© MacKichan Software, Inc.) led to significant deviations of the placements (also changing from one page to the other).
- fancytabs, 2011/04/16 v1.1, by RAPHAËL PINSON, available at <http://www.ctan.org/pkg/fancytabs>, but requires TikZ from the pgf bundle.
- thumb, 2001, without file version, by INGO KLÖCKEL, available at <ftp://ftp.dante.de/pub/tex/info/examples/ltt/thumb.sty>, unfortunately without documentation, which is probably available in the book:
Klöckel, I. (2001): L^AT_EX₂ε. Tips und Tricks, Dpunkt.Verlag GmbH, ISBN-13: 978-3-93258-837-2; in German.
- thumb (a completely different one), 1997/12/24, v1.0, by CHRISTIAN HOLM, available at <http://www.ctan.org/pkg/thumb>.
- thumbindex, 2009/12/13, without file version, by HISASHI MORITA, available at <http://hisashim.org/2009/12/13/thumbindex.html>.
- thumb-index, from the fancyhdr package, 2005/03/22 v3.2, by PIET VAN OOSTRUM, available at <http://www.ctan.org/pkg/fancyhdr>.
- thumbpdf, 2010/07/07, v3.11, by HEIKO OBERDIEK, is for creating thumbnails in a pdf document, not thumb marks (and therefore *no* alternative); available at <http://www.ctan.org/pkg/thumbpdf>.
- thumby, 2010/01/14, v0.1, by SERGEY GOLDGABER, “is designed to work with the memoir class, and also requires PerlT_EX and tikz” (<http://www.ctan.org/pkg/thumby>), available at <http://www.ctan.org/pkg/thumby>.

(You programmed or found another alternative, which is available at CTAN:?

OK, send an e-mail to me with the name, location at CTAN:, and a short notice, and I will probably include it in the list above.)

4 Example

```
1 \example
2 \documentclass[twoside,british]{article}[2007/10/19]% v1.4h
3 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
4 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
5 %% When compiling with SWP 5.50. Build 2960 %
6 %% (copyright MacKichan Software, Inc.), %
7 %% these additional packages are needed: %
8 %% \usepackage[T1]{fontenc} %
9 %% \usepackage{amsfonts} %
10 %% \usepackage[math]{cellspace} %
11 %% \usepackage{xcolor} %
12 %% \pagecolor{white} %
13 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
14 \usepackage{lipsum}[2011/04/14]% v1.2
15 \usepackage{eurosym}[1998/08/06]% v1.1
16 \usepackage[extension=pdf,%
17 pdfpagelayout=TwoPageRight,pdfpagemode={UseNone},%
18 plainpages=false,%
19 pdfpagelabels=true,%
20 hyperindex=false,%
21 pdflang={en},%
22 pdftitle={thumbs package example},%
23 pdfauthor={Hans-Martin Muench},%
24 pdfsubject={Example for the thumbs package},%
25 pdfkeywords={LaTeX, thumbs, thumb marks, Hans-Martin Muench},%
26 pdfview=Fit,pdfstartview=Fit,%
27 linktoc=all]{hyperref}[2011/04/17]% v6.82g
28 \usepackage[pagecolor=white,thumbink=rule,linefill=dots,height={auto},minheight={47pt},%
29 width={auto},distance={2mm},topthumbmargin={auto},bottomthumbmargin={auto},%
30 verbose=true]{thumbs}[2011/05/20]% v1.0c
31 \gdef\unit#1{\mathord{\thinspace\mathrm{#1}}}%
32 \listfiles
33 \begin{document}
34 \pagenumbering{arabic}
35 \section*{Example for thumbs}
36 \addcontentsline{toc}{section}{Example for thumbs}
37 \markboth{Example for thumbs}{Example for thumbs}
38
39 This example demonstrates the most common uses of package
40 \textsf{thumbs}, v1.0c as of 2011/05/20 (HMM).
41 The used options were \texttt{pagecolor=white},
42 \texttt{thumbink=rule}, \texttt{linefill=dots},
43 \texttt{height=auto}, \texttt{minheight=\{47pt\}},
44 \texttt{width=auto}, \texttt{distance=\{2mm\}}, \texttt{topthumbmargin=\{auto\}},
45 \texttt{bottomthumbmargin=\{auto\}}, and \texttt{verbose=true}.
```

```

46 These are the default options, except \texttt{verbose=true}.
47 For more details please see the documentation!\newline
48
49 \textbf{Hyperlinks or not:} If the \textsf{hyperref} package is loaded,
50 the references in the overview page for the thumb marks are also hyperlinked
51 (except when option \texttt{thumblink=none} is used).\newline
52
53 \bigskip
54
55 {\color{green} Save per page about $200\unit{ml}$ water, $2\unit{g}$ CO$_{2}$
56 and $2\unit{g}$ wood:\newline
57 Therefore please print only if this is really necessary.}
58
59 \newpage
60
61 \addtitlethumb{Frontmatter}{0}{white}{gray}{pagesLTS.0}
62
63 At the first page no thumb mark was used, but we want to begin with thumb marks
64 at the first page, therefore a
65 \begin{verbatim}
66 \addtitlethumb{Frontmatter}{0}{white}{gray}{pagesLTS.0}
67 \end{verbatim}
68 was used at the beginning of this page.
69
70 \newpage
71
72 \tableofcontents
73
74 \newpage
75
76 To include an overview page for the thumb marks,
77 \begin{verbatim}
78 \addthumbsoverviewtocontents{section}{Thumb marks overview}%
79 \thumbsoverview{Table of Thumbs}
80 \end{verbatim}
81 is used, where \textbackslash addthumbsoverviewtocontents adds the thumb
82 marks overview page to the table of contents.
83
84 \addthumbsoverviewtocontents{section}{Thumb marks overview}%
85 \thumbsoverview{Table of Thumbs}
86
87 That were the overview pages for the thumb marks.
88
89 \newpage
90
91 \section{The first section}
92 \addthumb{First section}{\space\Huge{\textbf{$1^{\text{st}}$}}}{yellow}{green}

```



```

93
94 \begin{verbatim}
95 \addthumb{First section}{\space\Huge{\textbf{$1^{\text{st}}$}}}{yellow}{green}
96 \end{verbatim}
97
98 A thumb mark is added for this section. The parameters are: title for the thumb mark,
99 the text to be displayed in the thumb mark (choose your own format),
100 the colour of the text in the thumb mark,
101 and the background colour of the thumb mark (parameters in this order).\newline
102
103 Now for some pages of \textquotedblleft content\textquotedblright\ldots
104
105 \newpage
106 \lipsum[1]
107 \newpage
108 \lipsum[1]
109 \newpage
110 \lipsum[1]
111 \newpage
112
113 \section{The second section}
114 \addthumb{Second section}{\Huge{\textbf{\arabic{section}}}}{green}{yellow}
115
116 For this section, the text to be displayed in the thumb mark was set to
117 \begin{verbatim}
118 \Huge{\textbf{\arabic{section}}}
119 \end{verbatim}
120 i.\,e. the number of the section will be displayed (huge \& bold).\newline
121
122 Let us change the thumb mark on a page with an even number:
123
124 \newpage
125
126 \section{The third section}
127 \addthumb{Third section}{\Huge{\textbf{\arabic{section}}}}{blue}{red}
128
129 No problem!
130
131 And you do not need to have a section to add a thumb:
132
133 \newpage
134
135 \addthumb{Still third section}{\Huge{\textbf{\arabic{section}b}}}{red}{blue}
136
137 This is still the third section, but there is a new thumb mark.
138
139 On the other hand, you can even get rid of the the thumb marks

```

```

140 for some page(s):
141
142 \newpage
143
144 \stopthumb
145
146 The command
147 \begin{verbatim}
148 \stopthumb
149 \end{verbatim}
150 was used here. Until another addthumb (with parameters) or
151 \begin{verbatim}
152 \continuethumb
153 \end{verbatim}
154 is used, there will be no more thumb marks.
155
156 \newpage
157
158 Still no thumb marks.
159
160 \newpage
161
162 Still no thumb marks.
163
164 \newpage
165
166 Still no thumb marks.
167
168 \newpage
169
170 \continuethumb
171
172 Thumb mark continued (unchanged).
173
174 \newpage
175
176 Thumb mark continued (unchanged).
177
178 \newpage
179
180 Time for another thumb,
181
182 \addthumb{Another heading}{Small text}{white}{black}
183
184 and another.
185
186 \addthumb{Huge Text}{\Huge{Huge Text}}{yellow}{green}

```

187
188 `\addthumb{bold text }\textbf{Bf Text}}{pink}{blue}`
189
190 `\addthumb{Huge Bold Text}\Huge{\textbf{HBT}}}{black}{yellow}`
191
192 When there is more than one thumb mark at one page, this is no problem.
193 When more than six (6) thumb marks are at one (1) page,
194 only the first six will be shown,
195 while all will appear in the thumbs overview page.
196 On the following pages the correct, last thumb mark will appear.
197 More than one thumb mark at one page probably does not make much sense.
198 This package was not created to create decorations at the page margin,
199 but if you really need more than six thumb marks at one page,
200 feel free to send an e-mail to the maintainer.
201 If you have got an idea how to dynamically create thumb
202 `\textquotedblleft registers\textquotedblright\` (thereby overcoming
203 this limitation), please send an e-mail to the maintainer, too.
204
205 `\newpage`
206
207 Some text
208
209 `\newpage`
210
211 Some text
212
213 `\newpage`
214
215 Some text
216
217 `\newpage`
218
219 `\section{xcolor}`
220 `\addthumb{xcolor}\Huge{\textbf{xcolor}}{magenta}{cyan}`
221
222 It is probably a good idea to have a look at the `\textsf{xcolor}` package
223 and use other colours than used in this example.
224
225 `\newpage`
226
227 `\addthumb{A mark}\Huge{\textbf{A}}{lime}{darkgray}`
228
229 I just need to add further thumb marks to get them reaching the bottom of the page.
230
231 Generally the vertical size of the thumb marks is set to the value given in the
232 `height` option. If it is `\texttt{auto}`, the size of the thumb marks is decreased,
233 so that they fit all on one page. But when they get smaller than `\texttt{minheight}`,

234 instead of decreasing their size further, a new thumbs column is started
 235 (which will happen here).
 236
 237 \newpage
 238
 239 \addthumb{B mark}{\Huge{\textbf{B}}}{brown}{pink}
 240
 241 There! A new thumb column was started automatically!
 242
 243 \newpage
 244
 245 \addthumb{C mark}{\Huge{\textbf{C}}}{brown}{pink}
 246
 247 You can, of course, keep the colour for more than one thumb mark.
 248
 249 \newpage
 250
 251 \addthumb{\$1/1.\,955\,83\\$, EUR}{\Huge{\textbf{D}}}{orange}{violet}
 252
 253 I am just adding further thumb marks.
 254
 255 If you are curious why the thumb mark between
 256 \textquotedblleft C mark\textquotedblright and \textquotedblleft E mark\textquotedblright has
 257 not been named \textquotedblleft D mark\textquotedblright but
 258 \textquotedblleft \$1/1.\,955\,83\\$, EUR\textquotedblright :
 259
 260 \$1\unit{DM}=1\unit{D\ Mark}=1\unit{Deutsche\ Mark}\$\newline
 261 \$=\frac{1}{1.\,955\,83}\\$, \euro \\$,=1/1.\,955\,83\unit{Euro}=1/1.\,955\,83\unit{EUR}\$.
 262
 263 \newpage
 264
 265 \addthumb{E mark}{\Huge{\textbf{E}}}{lightgray}{black}
 266
 267 I am just adding further thumb marks.
 268
 269 \newpage
 270
 271 \addthumb{F mark}{\Huge{\textbf{F}}}{magenta}{black}
 272
 273 Some text.
 274
 275 \newpage
 276 \thumbnewcolumn
 277 \addthumb{New thumb marks column}{\Huge{\textit{NC}}}{magenta}{black}
 278
 279 There! A new thumb column was started manually!
 280

```
281 \newpage
282
283 Some text.
284
285 \newpage
286
287 \addthumb{G mark}{\Huge{\textbf{G}}}{orange}{violet}
288
289 I just added another thumb mark.
290
291 \newpage
292
293 Well, I think that are enough thumb marks.
294
295 Good bye!
296
297 \end{document}
298 \end{example}
```

5 The implementation

We start off by checking that we are loading into L^AT_EX 2_ε and announcing the name and version of this package.

```
299 \*package)
300 \NeedsTeXFormat{LaTeX2e}[1994/06/01]% or later
301 \ProvidesPackage{thumbs}[2011/05/20 v1.0c
302           Thumb marks and overview page(s) (HMM)]
303
```

A short description of the thumbs package:

```
304 %% This package allows to create a customizable thumb index,
305 %% providing a quick and easy reference methode for large documents,
306 %% as well as an overview page.
307
```

For SW(P) users, we issue a warning. Unfortunately, we cannot check for the used software (can we?), and there will be a stack overflow when using `hyperref` even before the `thumbs` package is loaded, thus the warning might not even reach the users. (Thus: RTFM of thumbs!) The options for those packages might be changed by the user – I did not test all available options, thus first test, whether the document can be compiled with these options, and then try to change them according to your wishes.

```
308 \message{^^J *** Compiling with SW(P)? ^^J%
309 Please see the sw(p)*.log or \jobname.log-file! *** ^^J}
310 \PackageWarningNoLine{thumbs}{%
311   When compiling with SWP 5.50 Build 2960\MessageBreak%
312   (\copyright\ MacKichan Software, Inc.),\MessageBreak%
313   these additional packages are needed:\MessageBreak%
314   \string\usepackage[T1]{fontenc}\MessageBreak%
315   \string\usepackage{amsfonts}\MessageBreak%
316   \string\usepackage[math]{cellspace}\MessageBreak%
317   \string\usepackage{xcolor}\MessageBreak%
318   \string\pagecolor{white}\MessageBreak%
319   especially before hyperref and thumbs,\MessageBreak%
320   but best right after the \string\documentclass!\MessageBreak%
321 }
322
```

For the handling of the options we need the `kvoptions` package of HEIKO OBERDIEK (see subsection 6.1):

```
323 \RequirePackage{kvoptions}[2010/12/23]% v3.10
324
325 as well as some other packages:
326 \RequirePackage{atbegshi}[2011/01/30]% v1.15
327 \RequirePackage{xcolor}[2007/01/21]% v2.11
328 \RequirePackage{picture}[2009/10/11]% v1.3
329 \RequirePackage{alphalph}[2010/04/18]% v2.3
```

For the total number of the current page we need the `pagesLTS` package of myself (see subsection 6.1):

```
328 \RequirePackage{pagesLTS}[2011/03/17]% v1.1o
329 \RequirePackage{rerunfilecheck}[2011/04/15]% v1.7
330 \RequirePackage{infwarerr}[2010/04/08]% v1.3
331 \RequirePackage{atveryend}[2011/04/23]% v1.7
```

A last information for the user:

```
332 %% thumbs may work with earlier versions of those packages,
333 %% but this was not tested. Please consider updating your packages
334 %% to the most recent version (if they are not already the most
335 %% recent version).
336
```

See subsection 6.1 about how to get them.

The options are introduced:

```
337 \SetupKeyvalOptions{family=thumbs,prefix=thumbs@}
338 \DeclareStringOption[white]{pagecolor}[white]% \thumbs@pagecolor
339 \DeclareStringOption[linefill]{dots}
340 \DeclareStringOption[rule]{thumbblink}[rule]
341 \DeclareStringOption[47pt]{minheight}[47pt]
342 \DeclareStringOption{height}[auto]
343 \DeclareStringOption{width}[auto]
344 \DeclareStringOption{distance}[2mm]
345 \DeclareStringOption{topthumbmargin}[auto]
346 \DeclareStringOption{bottomthumbmargin}[auto]
347 \DeclareBoolOption[true]{verbose}
348
349 \ProcessKeyvalOptions*
350
```

pagecolor We set the (background) page colour to `\thumbs@pagecolor`, because the `xcolour` package needs a defined colour here (it can be changed later).

```
351 \pagecolor{\thumbs@pagecolor}
352
```

linefill We process the `linefill` option value:

```
353 \ifx\thumbs@linefill\empty%
354   \gdef\th@mb@linefill{\hspace*{\fill}}
355 \else
356   \def\th@mbstest{line}%
357   \ifx\thumbs@linefill\th@mbstest%
358     \gdef\th@mb@linefill{\hrulefill}
359   \else
360     \def\th@mbstest{dots}%
361     \ifx\thumbs@linefill\th@mbstest%
362       \gdef\th@mb@linefill{\dotfill}
```

```

363 \else
364 \PackageError{thumbs}{Option linefill with invalid value}{%
365 Option linefill has value '\thumbs@linefill'.\MessageBreak%
366 Valid values are '' (empty), 'line', or 'dots'.\MessageBreak%
367 '' (empty) will be used now.\MessageBreak%
368 }
369 \gdef\th@mb@linefill{\hspace*{\fill}}
370 \fi
371 \fi
372 \fi
373

```

We introduce new dimensions for width, height, position of and vertical distance between the thumb marks and some helper dimensions.

```

374 \newdimen\th@mbwidthx
375
376 \newdimen\th@mbheighty% Thumb height y
377 \setlength{\th@mbheighty}{\z@}
378
379 \newdimen\th@mbposx
380 \newdimen\th@mbposy
381 \newdimen\th@mbposyA
382 \newdimen\th@mbposytop
383 \newdimen\th@mbposybottom
384 \newdimen\th@mbwidthxtoc
385 \newdimen\th@mbposytopcy
386 \newdimen\th@mbposybottomcy
387
388 \newdimen\th@mbdistance% vertical distance between thumb marks
389 \ifx\thumbs@distance\empty%
390 \setlength{\th@mbdistance}{1mm}
391 \else
392 \setlength{\th@mbdistance}{\thumbs@distance}
393 \fi
394

```

When option `verbose` was choosen, information about the thumb marks dimensions (and top and bottom thumb marks margin) shall be presented, but `\the\something@something` does not work because of `@`. Therefore we need a `\thumbsinfodimen` dimen and a command to set it.

```

395 \ifthumbs@verbose
396 \newdimen\thumbsinfodimen
397 \newcommand{\thumbs@info}[1]{%
398 \setlength{\thumbsinfodimen}{#1}%
399 }%
400 \else
401 \PackageWarningNoLine{thumbs}{Option verbose=false found:\MessageBreak%
402 You will lose some information.}

```


403 \fi

404

We create a new Box for the thumbs, a temporary counter and make some global definitions.

405 \newbox\ThumbsBox

406

Generally it is not necessary to initialise a counter, because this is done automatically. But some packages change the handling of counters (e.g. the `lalloc` package as of 1995/09/24, v1.1b), and then a new counter might have a value different from zero (or the register might even contain something which is not a number value at all but some other string).

407 \newcounter{th@mbs@tmpA}

408 \setcounter{th@mbs@tmpA}{0}

409

410 \gdef\th@mbs{0}

411 \gdef\th@mbsmax{0}

412 \gdef\th@umbsperpage{0}% will be set via aux file

413 \gdef\th@umbsperpagecount{0}

414

415 \gdef\th@mbtitle{}

416 \gdef\th@mbtext{}

417 \gdef\th@mbtextcolour{\thumbs@pagecolor}

418 \gdef\th@mbackgroundcolour{\thumbs@pagecolor}

419 \gdef\th@mbcolumn{0}

420

421 \gdef\th@mbtextA{}

422 \gdef\th@mbtextcolourA{\thumbs@pagecolor}

423 \gdef\th@mbackgroundcolourA{\thumbs@pagecolor}

424

425 \gdef\th@mbprinting{1}

426 \gdef\th@mbtoprint{0}

427 \gdef\th@mbonpage{0}

428 \gdef\th@mbonpagemax{0}

429

430 \gdef\th@mbcolumnnew{0}

431

432 \gdef\thumb@two{2}% There is no \pagesLTS@two (yet).

433

434 \gdef\th@mbs@toc@level{}

435 \gdef\th@mbs@toc@text{}

436

It is checked whether writing to thumbs.tmb is allowed.

437 \if@files% \relax

438 \else

439 \PackageWarningNoLine{thumbs}{No auxiliary files allowed!\MessageBreak%

440 It was not allowed to write to files.\MessageBreak%

441 A lot of packages do not work without access to files!\MessageBreak%

```

442   like the .aux one. The thumbs package needs to write\MessageBreak%
443   to the \jobname.tmb file. To exit press\MessageBreak%
444   Ctrl+Z\MessageBreak%
445   .\MessageBreak%
446 }
447 \fi
448

```

In `\setth@mbheight` the height of a thumb mark (for automatically thumb heights) is computed as “((Thumbs extension) / (Number of Thumbs)) - (2 × distance between Thumbs)”.

```

449 \newcommand{\setth@mbheight}{%
450   \setlength{\th@mbheighty}{\z@}
451   \advance\th@mbheighty+\headheight
452   \advance\th@mbheighty+\headsep
453   \advance\th@mbheighty+\textheight
454   \advance\th@mbheighty+\footskip
455   \setcounter{th@mbs@tmpA}{\th@mbsmax}
456   \ifnum\value{th@mbs@tmpA}>1
457     \divide\th@mbheighty\th@mbsmax
458   \fi
459   \advance\th@mbheighty-\th@mbsdistance
460   \advance\th@mbheighty-\th@mbsdistance
461 }
462

```

At the beginning of the document `\AtBeginDocument` is executed.

```

463 \AtBeginDocument{%
464   \setlength{\th@mbposyA}{1pt}
465   \ifdim \thumbs@minheight < \th@mbposyA% too small
466     \setlength{\thumbs@minheight}{1pt}
467   \else
468     \ifdim \thumbs@minheight = \th@mbposyA% small, but ok
469   \else
470     \ifdim \thumbs@minheight > \th@mbposyA% ok
471   \else
472     \PackageError{thumbs}{Option minheight has invalid value}{%
473       Please use a number and a length unit (e.g. mm, cm, pt)\MessageBreak%
474       and no space between as value for option minheight\MessageBreak%
475       and include this value+unit combination in curly brackets\MessageBreak%
476       (please see the thumbs-example.tex file).\MessageBreak%
477       When pressing return, minheight will now be set to 47pt.\MessageBreak%
478     }
479     \setlength{\thumbs@minheight}{47pt}
480   \fi
481 \fi
482 \fi
483 \setlength{\th@mbposyA}{\thumbs@minheight}

```

This should be a temporary dimension, but we do not want to waste a `newdimension`, and `\th@mbposyA` is not used here yet and will be set later.

Thumb height `\th@mbheighty` is treated. If the value is empty, it is set to `\th@mbposyA`, which was just defined to be 47pt (by default, or to the value chosen by the user with package option `minheight={...}`):

```

484 \ifx\thumbs@height\empty%
485   \setlength{\th@mbheighty}{\th@mbposyA}
486 \else
487   \def\th@mbstest{auto}
488   \ifx\thumbs@height\th@mbstest%
```

If it is not empty but `auto(matic)`, the value is computed via `\setth@mbheight` (see above).

```

489   \setth@mbheight
```

When the height is smaller than `\thumbs@minheight` (default: 47pt), this is too small, and instead a new column/page of thumb marks is used.

```

490   \ifdim \th@mbheighty < \thumbs@minheight
491     \PackageWarningNoLine{thumbs}{Thumbs not high enough:\MessageBreak%
492       Option height has value 'auto'. For \th@mbsmax\space thumbs per page\MessageBreak%
493       this results in a thumb height of \the\th@mbheighty.\MessageBreak%
494       This is lower than the minimal thumb height, \thumbs@minheight,\MessageBreak%
495       therefore another thumbs column will be opened.\MessageBreak%
496       If you do not want this, choose a smaller value\MessageBreak%
497       for option 'minheight'%
498     }
499     \setlength{\th@mbheighty}{\z@}
500     \advance\th@mbheighty+\th@mbposyA% = \thumbs@minheight
501   \fi
502 \else
```

When a value has been given for the thumb marks' height, this fixed value is used.

```

503   \ifthumbs@verbose
504     \thumbs@info{\th@mbheighty}
505     \PackageInfo{thumbs}{Now setting thumbs' height to \the\thumbsinfodimen .}
506   \fi
507   \setlength{\th@mbheighty}{\thumbs@height}
508 \fi
509 \fi
```

Read in the `\jobname.tmb`-file:

```

510 \newread\@instreamthumb%
```

Inform the users about the dimensions of the thumb marks (look in the log file):

```

511 \ifthumbs@verbose
512   \message{^^J}
513   \@PackageInfoNoLine{thumbs}{***** THUMB dimensions *****}
514   \thumbs@info{\th@mbheighty}
515   \@PackageInfoNoLine{thumbs}{The height of the thumb marks is \the\thumbsinfodimen}
516 \fi

```

Setting the thumb mark width (\th@mbwidthx):

```

517 \setlength{\th@mbwidthx}{\paperwidth}
518 \advance\th@mbwidthx-\textwidth
519 \divide\th@mbwidthx4
520 \setlength{\th@mbposyA}{0sp}
521 \ifx\thumbs@width\empty%
522 \else
523   \def\th@mbstest{auto}
524   \ifx\thumbs@width\th@mbstest%
525   \else
526     \ifdim \thumbs@width > \th@mbposyA% OK
527     \setlength{\th@mbwidthx}{\thumbs@width}
528   \else
529     \PackageError{thumbs}{Thumbs not wide enough}{%
530       Option width has value '\thumbs@width'.\MessageBreak%
531       This is not a valid dimension larger than zero.\MessageBreak%
532       Width will be set automatically.\MessageBreak%
533     }
534   \fi
535 \fi
536 \fi
537 \ifthumbs@verbose
538   \thumbs@info{\th@mbwidthx}
539   \@PackageInfoNoLine{thumbs}{The width of the thumb marks is \the\thumbsinfodimen}
540 \fi

```

Setting the position of the first/top thumb mark. Vertical (y) position is a little bit complicated, because option \thumbs@topthumbmargin must be handled:

```

541 % Thumb position x \th@mbposx
542 \setlength{\th@mbposx}{\paperwidth}
543 \advance\th@mbposx-\th@mbwidthx
544 \advance\th@mbposx+1pt
545 % Thumb position y \th@mbposy
546 \ifx\thumbs@topthumbmargin\empty%
547   \def\thumbs@topthumbmargin{auto}
548 \fi
549 \def\th@mbstest{auto}

```

```

550 \ifx\thumbs@topthumbmargin\th@mbstest%
551   \setlength{\th@mbposy}{1in}
552   \advance\th@mbposy+\voffset
553   \advance\th@mbposy+\topmargin
554   \advance\th@mbposy-\thumbs@distance
555   \advance\th@mbposy+\th@mbheighty
556 \else
557   \setlength{\th@mbposyA}{-1pt}
558   \ifdim \thumbs@topthumbmargin > \th@mbposyA OK
559   \else
560     \PackageWarning{thumbs}{Thumbs column starting too high.\MessageBreak%
561       Option topthumbmargin has value '\thumbs@topthumbmargin'.\MessageBreak%
562       topthumbmargin will be set to -1pt.\MessageBreak%
563     }
564     \gdef\thumbs@topthumbmargin{-1pt}
565   \fi
566   \setlength{\th@mbposy}{\thumbs@topthumbmargin}
567   \advance\th@mbposy-\thumbs@distance
568   \advance\th@mbposy+\th@mbheighty
569 \fi
570 \setlength{\th@mbposytop}{\th@mbposy}
571 \ifthumbs@verbose%
572   \setlength{\@tempdimc}{\th@mbposytop}
573   \advance\@tempdimc-\th@mbheighty
574   \advance\@tempdimc+\thumbs@distance
575   \thumbs@info{\@tempdimc}
576   \@PackageInfoNoLine{thumbs}{The top thumb margin is \the\thumbsinfodimen}
577 \fi

```

Setting the lowest position of a thumb mark, according to option \thumbs@bottomthumbmargin:

```

578 % Max. thumb position y \th@mbposybottom
579 \ifx\thumbs@bottomthumbmargin\empty%
580   \gdef\thumbs@bottomthumbmargin{auto}
581 \fi
582 \def\th@mbstest{auto}
583 \ifx\thumbs@bottomthumbmargin\th@mbstest%
584   \setlength{\th@mbposybottom}{1in}
585   \advance\th@mbposybottom+\voffset
586   \advance\th@mbposybottom+\topmargin
587   \advance\th@mbposybottom-\thumbs@distance
588   \advance\th@mbposybottom+\th@mbheighty
589   \advance\th@mbposybottom+\headheight
590   \advance\th@mbposybottom+\headsep
591   \advance\th@mbposybottom+\textheight
592   \advance\th@mbposybottom+\footskip
593   \advance\th@mbposybottom-\thumbs@distance
594   \advance\th@mbposybottom-\th@mbheighty
595 \else

```

```

596 \setlength{\th@mbposyA}{\paperheight}
597 \advance\th@mbposyA-\thumbs@bottomthumbmargin
598 \advance\th@mbposyA-\th@mbposytop
599 \advance\th@mbposyA-\thumbs@distance
600 \advance\th@mbposyA-\th@mbheighty
601 \advance\th@mbposyA-\thumbs@distance
602 \ifdim \th@mbposyA > 0sp%ok
603 \else
604 \setlength{\th@mbposyA}{\paperheight}
605 \advance\th@mbposyA-\th@mbposytop
606 \advance\th@mbposyA-\thumbs@distance
607 \advance\th@mbposyA-\th@mbheighty
608 \advance\th@mbposyA-\thumbs@distance
609 \advance\th@mbposyA-1pt
610 \PackageWarning{thumbs}{Thumbs column ending too high.\MessageBreak%
611 Option bottomthumbmargin has value '\thumbs@bottomthumbmargin'.\MessageBreak%
612 bottomthumbmargin will be set to '\the\th@mbposyA'.\MessageBreak%
613 }
614 \global\edef\thumbs@bottomthumbmargin{\the\th@mbposyA}
615 \fi
616 \setlength{\th@mbposyA}{\thumbs@bottomthumbmargin}
617 \setlength{\@tempdimc}{-1pt}
618 \ifdim \th@mbposyA < \@tempdimc%
619 \PackageWarning{thumbs}{Thumbs column ending too low.\MessageBreak%
620 Option bottomthumbmargin has value '\thumbs@bottomthumbmargin'.\MessageBreak%
621 bottomthumbmargin will be set to -1pt.\MessageBreak%
622 }
623 \gdef\thumbs@bottomthumbmargin{-1pt}
624 \fi
625 \setlength{\th@mbposybottom}{\paperheight}
626 \advance\th@mbposybottom-\thumbs@bottomthumbmargin
627 \fi
628 \ifthumbs@verbose%
629 \setlength{\@tempdimc}{\paperheight}
630 \advance\@tempdimc-\th@mbposybottom
631 \thumbs@info{\@tempdimc}
632 \@PackageInfoNoLine{thumbs}{The bottom thumb margin is \the\thumbsinfodimen}
633 \@PackageInfoNoLine{thumbs}{*****}
634 \message{^^J}
635 \fi

```

\th@mbposyA is no longer used as temporary dimension here, but set to the top-most vertical thumb position (y). Because it will be increased (i.e. the thumb positions will move downwards on the page), \th@mbposytop is used to remember this position unchanged.

```

636 \advance\th@mbposy-\th@mbheighty% because it will be advanced also for the first thumb
637 \setlength{\th@mbposyA}{\th@mbposy}% \th@mbposyA will change.
638 \setlength{\th@mbposytop}{\th@mbposy}% \th@mbposytop shall not be changed.

```

```
639 }
640
```

`\thumb@advance` The internal command `\thumb@advance` is used to advance the position of the current thumb by `\thumbheighty` and `\thumb@advance`. If the resulting position of the thumb is lower than the `\thumbposybottom` position (i.e. `\thumbposy` *higher* than `\thumbposybottom`), a new thumb column will be started by the next `\addthumb`, otherwise a blank thumb is created and `\thumb@advance` is calling itself again. This loop continues until a new thumb column is ready to be started.

```
641 \newcommand{\thumb@advance}{%
642   \advance\thumbposy+\thumbheighty%
643   \advance\thumbposy+\thumb@advance%
644   \ifdim\thumbposy>\thumbposybottom%
645     \advance\thumbposy-\thumbheighty%
646     \advance\thumbposy-\thumb@advance%
647   \else%
648     \advance\thumbposy-\thumbheighty%
649     \advance\thumbposy-\thumb@advance%
650     \addthumb{}{}{\thumbs@pagecolor}{\thumbs@pagecolor}%
651     \thumb@advance%
652   \fi%
653 }
654
```

`\thumbnewcolumn` With the command `\thumbnewcolumn` a new column can be started, even if the current one was not filled. This could be useful e.g. for a dictionary, which uses one column for translations from language A to language B, and the second column for translations from language B to language A. But in that case one probably should increase the size of the thumb marks, so that 26 thumb marks (in case of the latin alphabet) fill one thumb column. Do not use `\thumbnewcolumn` on a page where `\addthumb` was already used, but use `\addthumb` immediately after `\thumbnewcolumn`.

```
655 \newcommand{\thumbnewcolumn}{%
656   \ifx\thumb@toprint\pagesLTS@one%
657     \PackageError{thumbs}{\string\thumbnewcolumn\space after \string\addthumb }{%
658       On page \thepage\space (approx.) \string\addthumb\space was used and *afterwards* \string\thumbnewcolumn .\MessageBreak%
659       When you want to use \string\thumbnewcolumn , do not use an \string\addthumb\space on the same\MessageBreak%
660       page before \string\thumbnewcolumn . Thus, either remove the \string\addthumb , or use a\MessageBreak%
661       \string\pagebreak , \string\newpage\space etc. before \string\thumbnewcolumn .\MessageBreak%
662       (And remember to use an \string\addthumb\space*after* \string\thumbnewcolumn .)\MessageBreak%
663       Your command \string\thumbnewcolumn\space will be ignored now.%
664     }%
665   \else%
666     \PackageWarning{thumbs}{%
667       Starting of another column requested by command\MessageBreak%
668       \string\thumbnewcolumn.\space Only use this command directly\MessageBreak%
669       before an \string\addthumb\space - did you?!\MessageBreak%
670     }%
671     \gdef\thumbcolumnnew{1}%
672     \thumb@advance%
673     \gdef\thumbprinting{0}%
674     \gdef\thumbcolumnnew{2}%

```

```

675 \fi%
676 }
677

```

`\addtitlethumb` When a thumb mark shall not or cannot be placed on a page, e. g. at the title page or when using `\includepdf` from `pdfpages` package, but the reference in the thumb marks overview nevertheless shall name that page number and hyperlink to that page, `\addtitlethumb` can be used at the following page. It has five arguments. The arguments one to four are identical to the ones of `\addthumb` (see immediately below), and the fifth argument consists of the label of the page, where the hyperlink at the thumb marks overview page shall link to. For the first page the label `pagesLTS.0` can be use, which is already placed there by the used `pagesLTS` package.

```

678 \newcommand{\addtitlethumb}[5]{%
679 \global\edef\th@mb@titlelabel{#5}%
680 \addthumb{#1}{#2}{#3}{#4}%
681 \global\edef\th@mb@titlelabel{}}%
682 }
683

```

`\addthumb` Now the `\addthumb` command is defined, which is used to add a new thumb mark to the document.

```

684 \newcommand{\addthumb}[4]{%
685 \gdef\th@mbprinting{1}%
686 \advance\th@mbposy\th@mbheighty%
687 \advance\th@mbposy\th@mbdistance%
688 \ifdim\th@mbposy>\th@mbposybottom%
689 \PackageWarning{thumbs}{%
690 Thumbs column full, starting another column.\MessageBreak%
691 }%
692 \setlength{\th@mbposy}{\th@mbposytop}%
693 \advance\th@mbposy\thumbs@distance%
694 \ifx\th@mbcolumn\pagesLTS@zero%
695 \global\edef\th@umbsperpagecount{\th@mbs}%
696 \gdef\th@mbcolumn{1}%
697 \fi%
698 \fi%
699 \setcounter{th@mbs@tmpA}{\th@mbs}%
700 \addtocounter{th@mbs@tmpA}{+1}%
701 \global\edef\th@mbs{\arabic{th@mbs@tmpA}}%

```

We do not want any labels or index or glossary entries confusing the table of thumbs entries:

```

702 {\let\label\@gobble%
703 \let\index\@gobble%
704 \let\glossary\@gobble%

```

The `\addthumb` command has four parameters:

1. a title for the thumb mark(for the thumb marks overview page, e. g. the chapter title),
2. the text to be displayed in the thumb mark (for example a chapter number),
3. the colour of the text in the thumb mark,

4. and the background colour of the thumb mark

(parameters in this order).

```
705 \gdef\th@mbtitle{#1}%  
706 \gdef\th@mbtext{#2}%  
707 \gdef\th@mbtextcolour{#3}%  
708 \gdef\th@mbbackgroundcolour{#4}%  
709 }
```

`\@ifpackageloaded` cannot be used after `\AtBeginDocument`, so here it is not checked for the `hyperref` package, but for its `\Hy@Warning` command. If some other package or user is defining `\Hy@Warning`, `thumbs` will falsely assume, that `hyperref` has been loaded, but by my humble opinion, defining `\Hy@Warning` does not make sense and is bad style (except definition by the `hyperref` package itself, of course). Into the `\jobname.tmb` file a `\thumbcontents` entry is written. If `hyperref` is found, a `\phantomsection` is placed, a label for the thumb mark created, and the `\thumbcontents` entry will be hyperlinked to that label (except when `\addtitlethumb` was used, then the label reported from the user is used – the `thumbs` package does *not* create that label!).

```
710 \@ifundefined{Hy@Warning}{% hyperref not loaded  
711 }{% hyperref loaded  
712   \phantomsection%  
713   \label{thumbs.\th@mps}%  
714 }%  
715 \if@files%  
716   \ifx\th@mb@titlelabel\empty%  
717     \addtocontents{tmb}{\string\thumbcontents{#1}{#2}{#3}{#4}{\thepage}{thumbs.\th@mps}{\th@mbcolumnnew}}%  
718   \else%  
719     \addtocounter{page}{-1}%  
720     \edef\th@mb@page{\thepage}%  
721     \addtocontents{tmb}{\string\thumbcontents{#1}{#2}{#3}{#4}{\th@mb@page}{\th@mb@titlelabel}{\th@mbcolumnnew}}%  
722     \addtocounter{page}{+1}%  
723   \fi%  
724 %\else there is a problem, but the according warning message was already given earlier.  
725 \fi%
```

Maybe there is a rare case, where more than one thumb mark will be placed at one page. Probably a `\pagebreak`, `\newpage` or something similar would be advisable, but nevertheless we should prepare for this case. We save the properties of the thumb mark(s).

```
726 \ifx\th@mbcolumnnew\pagesLTS@one%  
727 \else%  
728   \setcounter{th@mps@tmpA}{\th@mbonpage}%  
729   \addtocounter{th@mps@tmpA}{+1}%  
730   \global\edef\th@mbonpage{\arabic{th@mps@tmpA}}%  
731 \fi%  
732 \ifx\th@mbtoprint\pagesLTS@zero%  
733 \else%
```

```

734 \ifx\th@mbcolumnnew\pagesLTS@zero%
735 \PackageWarning{thumbs}{More than one thumb at one page:\MessageBreak%
736 You placed more than one thumb mark (at least \th@mbonpage)\MessageBreak%
737 on page \thepage \space (page is approximately).\MessageBreak%
738 Maybe insert a pagebreak?\MessageBreak%
739 }%
740 \fi%
741 \fi%
742 \ifnum\th@mbonpage=1%
743 \ifnum\th@mbonpagemax>0% \relax
744 \else \gdef\th@mbonpagemax{1}%
745 \fi%
746 \gdef\th@mbtextA{#2}%
747 \gdef\th@mbtextcolourA{#3}%
748 \gdef\th@mbbackgroundcolourA{#4}%
749 \setlength{\th@mbposyA}{\th@mbposy}%
750 \else%
751 \ifx\th@mbcolumnnew\pagesLTS@zero%
752 \setcounter{th@mbs@tmpA}{1}%
753 \edef\th@mbonpagetest{\arabic{th@mbs@tmpA}}%
754 \@whilenum\th@mbonpagetest<\th@mbonpage\do{%
755 \addtocounter{th@mbs@tmpA}{1}%
756 \global\edef\th@mbonpagetest{\arabic{th@mbs@tmpA}}%
757 \ifnum\th@mbonpage=\th@mbonpagetest%
758 \ifnum\th@mbonpagemax<\th@mbonpage%
759 \global\edef\th@mbonpagemax{\th@mbonpage}%
760 \fi%
761 \edef\th@mbtmpdef{\csname th@mbtext\Alpha\Alph{\arabic{th@mbs@tmpA}}\endcsname}%
762 \expandafter\gdef\th@mbtmpdef{#2}%
763 \edef\th@mbtmpdef{\csname th@mbtextcolour\Alpha\Alph{\arabic{th@mbs@tmpA}}\endcsname}%
764 \expandafter\gdef\th@mbtmpdef{#3}%
765 \edef\th@mbtmpdef{\csname th@mbbackgroundcolour\Alpha\Alph{\arabic{th@mbs@tmpA}}\endcsname}%
766 \expandafter\gdef\th@mbtmpdef{#4}%
767 \fi%
768 }%
769 \else%
770 \ifnum\th@mbonpagemax<\th@mbonpage%
771 \global\edef\th@mbonpagemax{\th@mbonpage}%
772 \fi%
773 \fi%
774 \fi%
775 \ifx\th@mbcolumnnew\thumb@two% There is no \pagesLTS@two (yet).
776 \gdef\th@mbcolumnnew{0}%
777 \fi%
778 \gdef\th@mbtoprint{1}%
779 }
780

```

`\stopthumb` When a page (or pages) shall have no thumb marks, `\stopthumb` stops the issuing of thumb marks (until another thumb mark is placed or `\continuethumb` is used).

```

781 \newcommand{\stopthumb}{\gdef\th@mbprinting{0}}
782

```

`\continuethumb` `\continuethumb` continues the issuing of thumb marks (equal to the one before this was stopped by `\stopthumb`).

```

783 \newcommand{\continuethumb}{\gdef\th@mbprinting{1}}
784

```

`\thumbcontents` The **internal** command `\thumbcontents` (which will be read in from the `\jobname.tmb` file) creates a thumb mark entry on the overview page(s). Its seven parameters are

1. the title for the thumb mark,
2. the text to be displayed in the thumb mark,
3. the colour of the text in the thumb mark,
4. the background colour of the thumb mark,
5. the first page of this thumb mark,
6. the label where it should hyperlink to
7. and an indicator, whether `\thumbnewcolumn` is just issuing blank thumbs to fill a column

(parameters in this order). Without `hyperref` the 6th parameter is just ignored.

```

785 \newcommand{\thumbcontents}[7]{%
786   \advance\th@mbposy\th@mbheighty%
787   \advance\th@mbposy\th@mbdistance%
788   \ifdim\th@mbposy>\th@mbposybottom%
789     \setlength{\th@mbposy}{\th@mbposytop}%
790     \advance\th@mbposy\th@mbdistance%
791   \fi%
792   \def\th@mb@tmp@title{#1}%
793   \def\th@mb@tmp@text{#2}%
794   \def\th@mb@tmp@textcolour{#3}%
795   \def\th@mb@tmp@backgroundcolour{#4}%
796   \def\th@mb@tmp@page{#5}%
797   \def\th@mb@tmp@label{#6}%
798   \def\th@mb@tmp@column{#7}%
799   \ifx\th@mb@tmp@column\thumb@two%
800     \def\th@mb@tmp@column{0}%
801   \fi%
802   \setlength{\th@mbwidthxtoc}{\paperwidth}%
803   \advance\th@mbwidthxtoc-1in%
804   \advance\th@mbwidthxtoc-\hoffset%
805   \advance\th@mbwidthxtoc-\oddsidemargin%

```

```

806 \put(1in+\hoffset+\oddsidemargin,-\th@mbposy){%
807 \begin{picture}(0,0)%

```

When the option `thumblink=rule` was choosen, the whole rule is made into a hyperlink. Otherwise the rule is created without hyperlink (here).

```

808 \def\th@mbstest{rule}%
809 \ifx\thumbs@thumbblink\th@mbstest%
810 \ifx\th@mb@tmp@column\pagesLTS@zero%
811 {\color{\th@mb@tmp@backgroundcolour}\hyperref[\th@mb@tmp@label]{\rule{\th@mbwidthxtoc}{\th@mbheighty}}}%
812 \else%

```

When `\th@mb@tmp@column` is not zero, then this is a blank thumb mark from `thumbnewcolumn`.

```

813 {\color{\th@mb@tmp@backgroundcolour}\rule{\th@mbwidthxtoc}{\th@mbheighty}}%
814 \fi%
815 \else%
816 {\color{\th@mb@tmp@backgroundcolour}\rule{\th@mbwidthxtoc}{\th@mbheighty}}%
817 \fi%
818 \end{picture}%

```

When `\th@mb@tmp@column` is zero, then this is **not** a blank thumb mark from `thumbnewcolumn`, and we need to fill it with some content. If it is not zero, it is a blank thumb mark, and nothing needs to be done here.

```

819 \ifx\th@mb@tmp@column\pagesLTS@zero%
820 \begin{picture}(0,0)(0,-0.5\th@mbheighty+384930sp)%
821 \bgroup%
822 \setlength{\parindent}{0pt}%
823 \vbox% to \textwidth
824 {\hspace=\textwidth}%

```

Depending on the value of option `thumblink`, parts of the text are made into hyperlinks:

- `none` creates *none* hyperlink

```

825 \def\th@mbstest{none}
826 \ifx\thumbs@thumbblink\th@mbstest%
827 {\color{\th@mb@tmp@textcolour}\noindent \th@mb@tmp@title%
828 \leaders\box \ThumbsBox {\th@mbs@linefill \th@mb@tmp@page}%
829 }%
830 \else%

```

- `title` hyperlinks the *titles* of the thumb marks

```

831 \def\th@mbstest{title}%
832 \ifx\thumbs@thumbblink\th@mbstest%
833 {\color{\th@mb@tmp@textcolour}\noindent%
834 \hyperref[\th@mb@tmp@label]{\th@mb@tmp@title}%
835 \leaders\box \ThumbsBox {\th@mbs@linefill \th@mb@tmp@page}%
836 }%
837 \else%

```

- `page` hyperlinks the *page* numbers of the thumb marks

```
838             \def\th@mbstest{page}%
839             \ifx\thumbs@thumblink\th@mbstest%
840                 {\color{\th@mb@tmp@textcolour}\noindent%
841                 \th@mb@tmp@title%
842                 \leaders\box \ThumbsBox {\th@mbs@linefill \pageref{\th@mb@tmp@label}}}%
843             }%
844             \else%
```

- `titleandpage` hyperlinks the *title and page* numbers of the thumb marks

```
845             \def\th@mbstest{titleandpage}%
846             \ifx\thumbs@thumblink\th@mbstest%
847                 {\color{\th@mb@tmp@textcolour}\noindent%
848                 \hyperref[\th@mb@tmp@label]{\th@mb@tmp@title}%
849                 \leaders\box \ThumbsBox {\th@mbs@linefill \pageref{\th@mb@tmp@label}}}%
850             }%
851             \else%
```

- `line` hyperlinks the whole *line*, i. e. title, dots (or line or whatsoever) and page numbers of the thumb marks

```
852             \def\th@mbstest{line}%
853             \ifx\thumbs@thumblink\th@mbstest%
854                 {\color{\th@mb@tmp@textcolour}\noindent%
855                 \hyperref[\th@mb@tmp@label]{\th@mb@tmp@title%
856                 \leaders\box \ThumbsBox {\th@mbs@linefill \th@mb@tmp@page}}}%
857             }%
858             \else%
```

- `rule` hyperlinks the whole *rule*, but that was already done above, so here no linking is done

```
859             \def\th@mbstest{rule}%
860             \ifx\thumbs@thumblink\th@mbstest%
861                 {\color{\th@mb@tmp@textcolour}\noindent%
862                 \th@mb@tmp@title%
863                 \leaders\box \ThumbsBox {\th@mbs@linefill \th@mb@tmp@page}}%
864             }%
865             \else%
```

Another value for `\thumbs@thumblink` should never be encountered here.

```
866             \PackageError{thumbs}{\string\thumbs@thumblink\space invalid}{%
867             \string\thumbs@thumblink\space has an invalid value,\MessageBreak%
868             although it did not have an invalid value before,\MessageBreak%
869             and the thumbs package did not change it.\MessageBreak%
870             Therefore some other package (or the user)\MessageBreak%
871             manipulated it.\MessageBreak%
872             Now setting it to 'none' as last resort.\MessageBreak%
```

```

873             }%
874             \gdef\thumbs@thumblink{none}%
875             {\color{\th@mb@tmp@textcolour}\noindent%
876             \th@mb@tmp@title%
877             \leaders\box \ThumbsBox {\th@mb@linefill \th@mb@tmp@page}%
878             }%
879             \fi%
880         \fi%
881     \fi%
882 \fi%
883 \fi%
884 \fi%
885 }%
886 }%
887 \egroup%
888 \end{picture}%

```

The thumb mark (with text) as set in the document outside of the thumb marks overview page(s) is also presented here.

```

889 \begin{picture}(0,0)(1in+\hoffset+\oddsidemargin-\th@mbxpos,-0.5\th@mbheighty+384930sp)%
890 \bgroup%
891 \setlength{\parindent}{0pt}%
892 \makebox[\th@mbwidthx][r]{\color{\th@mb@tmp@textcolour}\th@mb@tmp@text \space}}%
893 \egroup%
894 \end{picture}%
895 \fi%
896 }%
897 }
898

```

\th@mb@yA \th@mb@yA sets the y-position to be used in \th@mbprint.

```

899 \newcommand{\th@mb@yA}{%
900 \advance\th@mbposyA\th@mbheighty%
901 \advance\th@mbposyA\th@mbdistance%
902 \ifdim\th@mbposyA>\th@mbposybottom%
903 \PackageWarning{thumbs}{You are not only using more than one thumb mark at one\MessageBreak%
904 single page, but also thumb marks from different thumb\MessageBreak%
905 columns. May I suggest the use of a \string\pagebreak\space or\MessageBreak%
906 \string\newpage ?}%
907 }%
908 \setlength{\th@mbposyA}{\th@mbposytop}%
909 \fi%
910 }
911

```

`\th@mbprint` `\th@mbprint` places a picture containing the thumb mark on the page.

```

912 \newcommand{\th@mbprint}[3]{%
913   \put(\th@mbxpos,-\th@mbposyA){%
914     \begin{picture}(0,0)%
915       {\color{#3}\rule{\th@mbwidthx}{\th@mbheighty}}%
916     \end{picture}%
917   \begin{picture}(0,0)(0,-0.5\th@mbheighty+384930sp)%
918     \bgroup%
919     \setlength{\parindent}{0pt}%
920     \ifodd\c@CurrentPage%
921       \if@twoside%
922         \makebox[\th@mbwidthx][l]{\color{#2}\hspace*{1pt}\space #1}}%
923       \else%
924         \makebox[\th@mbwidthx][r]{\color{#2}#1\space}}%
925       \fi%
926     \else%
927       \makebox[\th@mbwidthx][r]{\color{#2}#1\space}}%
928     \fi%
929   \egroup%
930 \end{picture}%
931 }%
932 }
933
```

`\AtBeginShipout` `\AtBeginShipoutUpperLeft` calls the `\th@mbprint` macro for each thumb mark which shall be placed on that page. When `\stopthumb` was used, the thumb mark is omitted.

```

934 \AtBeginShipout{%
935   \ifx\th@mbcolumnnew\pagesLTS@zero% ok
936   \else%
937     \PackageError{thumbs}{Missing \string\addthumb\space after \string\thumbnewcolumn }{%
938       Command \string\thumbnewcolumn\space was used, but no new thumb placed with \string\addthumb\MessageBreak%
939       (at least not at the same page). After \string\thumbnewcolumn\space please always use an\MessageBreak%
940       \string\addthumb . Until the next \string\addthumb , there will be no thumb marks on the\MessageBreak%
941       pages. Starting a new column of thumb marks and not putting a thumb mark into\MessageBreak%
942       that column does not make sense. If you just want to get rid of column marks,\MessageBreak%
943       do not abuse \string\thumbnewcolumn\space but use \string\stopthumb .\MessageBreak%
944       (This error message will be repeated at all following pages,\MessageBreak%
945       \space until \string\addthumb\space is used.)\MessageBreak%
946     }%
947   \fi%
948   \setcounter{th@mbs@tmpA}{\value{CurrentPage}}%
949   \addtocounter{th@mbs@tmpA}{-1}% because CurrentPage is already the one of the next page
950   \def\th@mbxpos{\th@mbposx}%
951   \ifodd\c@th@mbs@tmpA \relax
952   \else%
953     \if@twoside \def\th@mbxpos{-1pt}% \else \relax
954     \fi%

```

```

955 \fi%
956 \AtBeginShipoutUpperLeft{%
957   \ifx\th@mbprinting\pagesLTS@one%
958     \th@mbprint{\th@mbtextA}{\th@mbtextcolourA}{\th@mbackgroundcolourA}%
959     \setcounter{th@mbs@tmpA}{1}%
960     \edef\th@mbonpagetest{\arabic{th@mbs@tmpA}}%
961     \@whilenum\th@mbonpagetest<\th@mbonpage\do{%
962       \addtocounter{th@mbs@tmpA}{1}%
963       \edef\th@mbonpagetest{\arabic{th@mbs@tmpA}}%
964       \th@mb@yA%
965       \def\th@mbtmpdeftext{\csname th@mbtext\AlphAlph{\arabic{th@mbs@tmpA}}\endcsname}%
966       \def\th@mbtmpdefcolour{\csname th@mbtextcolour\AlphAlph{\arabic{th@mbs@tmpA}}\endcsname}%
967       \def\th@mbtmpdefbackgroundcolour{\csname th@mbackgroundcolour\AlphAlph{\arabic{th@mbs@tmpA}}\endcsname}%
968       \th@mbprint{\th@mbtmpdeftext}{\th@mbtmpdefcolour}{\th@mbtmpdefbackgroundcolour}%
969     }%
970 \fi%
971 \setcounter{th@mbs@tmpA}{\th@mbonpage}%

```

When more than one thumb mark was placed at that page, on the following pages only the last issued thumb mark shall appear.

```

972 \ifnum\value{th@mbs@tmpA}<2% \relax
973 \else%
974   \gdef\th@mbtextA{\th@mbtext}%
975   \gdef\th@mbtextcolourA{\th@mbtextcolour}%
976   \gdef\th@mbackgroundcolourA{\th@mbackgroundcolour}%
977   \gdef\th@mbposyA{\th@mbposy}%
978 \fi%
979 \gdef\th@mbonpage{0}%
980 \gdef\th@mbtoprint{0}%
981 }%
982 }
983

```

\AfterLastShipout

```

984 \AfterLastShipout{%
985   \ifx\th@mbcolumnnew\pagesLTS@zero% ok
986   \else
987     \PackageWarningNoLine{thumbs}{%
988       Still missing \string\addthumb\space after \string\thumbnewcolumn\space after\MessageBreak%
989       last shipout: Command \string\thumbnewcolumn\space was used,\MessageBreak%
990       but no new thumb placed with \string\addthumb\space anywhere in the\MessageBreak%
991       rest of the document. Starting a new column of thumb\MessageBreak%
992       marks and not putting a thumb mark into that column\MessageBreak%
993       does not make sense. If you just want to get rid of\MessageBreak%
994       thumb marks, do not abuse \string\thumbnewcolumn\space but use\MessageBreak%
995       \string\stopthumb %
996     }
997 \fi

```


\AfterLastShipout the number of thumb marks per overview page and the total number of thumb marks are determined and saved for the next L^AT_EX run via the .aux file.

```

998 \ifx\th@mbcolumn\pagesLTS@zero% if there is only one column of thumbs
999   \global\edef\th@umbsperpagecount{\th@mbs}
1000   \gdef\th@mbcolumn{1}
1001 \fi
1002 \ifx\th@umbsperpagecount\pagesLTS@zero
1003   \gdef\th@umbsperpagecount{\th@mbs}% \th@mbs was increased with each \addthumb
1004 \fi
1005 \if@files
1006   \immediate\write\@auxout{\string
1007     \gdef\string\th@umbsperpage{\th@umbsperpagecount}}
1008   \immediate\write\@auxout{\string
1009     \gdef\string\th@mbsmax{\th@mbs}}
1010   \expandafter\newwrite\csname tf@tmb\endcsname

```

And a rerun check is performed: Did the \jobname.tmb file change?

```

1011 \RerunFileCheck{\jobname.tmb}{%
1012   \immediate\closeout \csname tf@tmb\endcsname
1013   }{Warning: Rerun to get list of thumbs right!%
1014   }
1015   \immediate\openout \csname tf@tmb\endcsname = \jobname.tmb\relax
1016 %\else there is a problem, but the according warning message was already given earlier.
1017 \fi
1018 }
1019

```

\addthumbsoverviewtocontents with two arguments is a replacement for \addcontentsline{toc}{<level>}{<text>}, where the first argument of \addthumbsoverviewtocontents is for <level> and the second for <text>. If an entry of the thumbs mark overview shall be placed in the table of contents, \addthumbsoverviewtocontents with its arguments should be used immediately before \thumbsoverview.

```

1020 \newcommand{\addthumbsoverviewtocontents}[2]{%
1021   \gdef\th@mbs@toc@level{#1}
1022   \gdef\th@mbs@toc@text{#2}
1023   }
1024

```

`\thumbsoverview` `\thumbsoverview` is used to place the overview page(s) for the thumb marks. Its parameter is used to mark this page/these pages (e.g. in the page header). If these marks are not wished, `\thumbsoverview{}` will generate empty marks in the page header(s). `\thumbsoverview` could be used more than once (for example at the beginning and at the end of the document), but the label `TableOfThumbs` would then be multiply defined (no great harm done, but hyperlinks will only link to one of the labels). `\thumbsoverview` works by calling the internal command `\th@mbsoverview` (see below), repeating this until all thumb marks have been processed.

```
1025 \newcommand{\thumbsoverview}[1]{%
```

Option `\thumbs@thumblink` is checked for a valid and resonable value here.

```
1026 \def\th@mbstest{none}%
1027 \ifx\thumbs@thumblink\th@mbstest% OK
1028 \else%
1029 \@@ifundefined{Hy@Warning}{% hyperref not loaded
1030 \PackageError{thumbs}{Option thumblink != none, but hyperref not loaded}{%
1031 The option thumblink of the thumbs package was not set to 'none',\MessageBreak%
1032 but to some kind of hyperlinks, without using package hyperref.\MessageBreak%
1033 Either choose option 'thumblink=none', or load package hyperref.\MessageBreak%
1034 When pressing return, 'thumblink=none' will be set now.\MessageBreak%
1035 }%
1036 \gdef\thumbs@thumblink{none}%
1037 }{% hyperref loaded
1038 \def\th@mbstest{title}%
1039 \ifx\thumbs@thumblink\th@mbstest% OK
1040 \else%
1041 \def\th@mbstest{page}%
1042 \ifx\thumbs@thumblink\th@mbstest% OK
1043 \else%
1044 \def\th@mbstest{titleandpage}%
1045 \ifx\thumbs@thumblink\th@mbstest% OK
1046 \else%
1047 \def\th@mbstest{line}%
1048 \ifx\thumbs@thumblink\th@mbstest% OK
1049 \else%
1050 \def\th@mbstest{rule}%
1051 \ifx\thumbs@thumblink\th@mbstest% OK
1052 \else%
1053 \PackageError{thumbs}{Option thumblink with invalid value}{%
1054 Option thumblink has value '\thumbs@thumblink'.\MessageBreak%
1055 Valid values are 'none', 'title', 'page',\MessageBreak%
1056 'titleandpage', 'line', or 'rule'.\MessageBreak%
1057 'rule' will be used now.\MessageBreak%
1058 }%
1059 \gdef\thumbs@thumblink{rule}%
1060 \fi%
1061 \fi%
1062 \fi%
1063 \fi%
```

```

1064 \fi%
1065 }%
1066 \fi%

```

When the thumb overview is printed and there is already a thumb mark set, for example for the frontmatter (e. g. title page, bibliographic information, acknowledgements, dedication, preface, abstract, tables of content, tables, and figures, lists of symbols and abbreviations, and the thumbs overview itself, of course) or when the overview is placed near the end of the document, the current y-position of the thumb mark must be remembered (and later restored) and the printing of that thumb mark must be stopped (and later continued).

```

1067 \edef\th@mbprintingovertoc{\th@mbprinting}%
1068 \stopthumb%
1069 \markboth{\MakeUppercase #1 }{\MakeUppercase #1 }
1070 \setlength{\th@mbposytocy}{\th@mbposy}
1071 \setlength{\th@mbposy}{\th@mbposytocy}
1072 \newcounter{th@mblinea}
1073 \setcounter{th@mblinea}{1}
1074 \newcounter{th@mblineb}
1075 \setcounter{th@mblineb}{\th@umbsperpage}
1076 \newcounter{FileLine}
1077 \setcounter{FileLine}{1}
1078 \newcounter{thumbsstop}
1079 \setcounter{thumbsstop}{1}
1080 \addtocounter{thumbsstop}{\th@mbsmax}
1081 \@whilenum\value{FileLine}<\value{thumbsstop}\do%
1082 {\if@twoside \cleardoublepage%
1083 \else \clearpage%
1084 \fi%

```

When the hyperref package is used, one might like to refer to the thumb overview page(s), therefore a phantomsection is added and a label TableOfThumbs is placed here. When \addthumbsoverviewtocontents was used, the entry is placed into the table of contents.

```

1085 \ifnum\value{FileLine}=1%
1086 \ifundefined{Hy@Warning}{}{\phantomsection \label{TableOfThumbs}}%
1087 \ifx\th@mbs@toc@level\empty%
1088 \else \addcontentsline{toc}{\th@mbs@toc@level}{\th@mbs@toc@text}%
1089 \fi%
1090 \fi%
1091 \null%
1092 \th@mbs@verview%
1093 \pagebreak%
1094 \ifthumbs@verbose%
1095 \message{THUMBS: Fileline: \arabic{FileLine}, a: \arabic{th@mblinea}, %
1096 b: \arabic{th@mblineb}, per page: \th@umbsperpage, max: \th@mbsmax.^^J}%
1097 \fi%
1098 }%

```

After the overview, the current thumb mark (if there is any) is restored.

```

1099 \setlength{\th@mbposy}{\th@mbsposytcy}%
1100 \ifx\th@mbprintingovertoc\pagesLTS@one%
1101   \continuethumb%
1102 \fi%
1103 }
1104

```

`\th@mbs@verview` The internal command `\th@mbs@verview` reads a line from file `\jobname.tmb` and executes the content of that line – if that line has not been processed yet, in which case it is just ignored (see `\@unused`).

```

1105 \newcommand{\th@mbs@verview}{%
1106   \ifthumbs@verbose%
1107     \message{^^JPackage thumbs Info: Processing line \arabic{th@mblinea} to \arabic{th@mblineb} of \jobname.tmb.}%
1108   \fi%
1109   \setcounter{FileLine}{1}%
1110   \AtBeginShipoutNext{%
1111     \AtBeginShipoutUpperLeftForeground{%
1112       \IfFileExists{\jobname.tmb}{% then
1113         \openin\@instreamthumb=\jobname.tmb %
1114         \@whilenum\value{FileLine}<\value{th@mblineb}\do%
1115         {\ifthumbs@verbose%
1116           \message{THUMBS: Processing \jobname.tmb line \arabic{FileLine}.}%
1117           \fi%
1118           \ifnum \value{FileLine}<\value{th@mblinea}%
1119             \read\@instreamthumb to \@unused%
1120             \ifthumbs@verbose%
1121               \message{Can be skipped.^^J}%
1122             \fi%
1123             % NIRVANA: ignore the line by not executing it,
1124             % i.e. not executing \@unused.
1125             % % \@unused
1126           \else%
1127             \ifnum \value{FileLine}=\value{th@mblinea}%
1128               \read\@instreamthumb to \@thumbsout% execute the code of this line
1129               \ifthumbs@verbose%
1130                 \message{Executing \jobname.tmb line \arabic{FileLine}.^^J}%
1131               \fi%
1132               \@thumbsout%
1133             \else%
1134               \ifnum \value{FileLine}>\value{th@mblinea}%
1135                 \read\@instreamthumb to \@thumbsout% execute the code of this line
1136                 \ifthumbs@verbose%
1137                   \message{Executing \jobname.tmb line \arabic{FileLine}.^^J}%
1138                 \fi%
1139                 \@thumbsout%

```

```

1140         \else% THIS SHOULD NEVER HAPPEN!
1141         \PackageError{thumbs}{Unexpected error! (Really!)}{%
1142             ! You are in trouble here.\MessageBreak%
1143             ! Type X \string<return\string> to quit.\MessageBreak%
1144             ! Delete temporary auxiliary files.\MessageBreak%
1145             ! (like \jobname.aux, \jobname.tmb, \jobname.out).\MessageBreak%
1146             ! and retry the compilation.\MessageBreak%
1147             ! If the error persists, cross your fingers.\MessageBreak%
1148             ! and try typing \string<return\string> to proceed.\MessageBreak%
1149             ! If that does not work,\MessageBreak%
1150             ! you might contact the maintainer of the thumbs package.\MessageBreak%
1151         }%
1152     \fi%
1153 \fi%
1154 \fi%
1155 \stepcounter{FileLine}%
1156 }%
1157 \ifnum \value{FileLine}=\value{th@mblineb}
1158     \ifthumbs@verbose%
1159         \message{THUMBS: Processing \jobname.tmb line \arabic{FileLine}.}%
1160     \fi%
1161     \read\@instreamthumb to \@thumbsout% Execute the code of that line.
1162     \ifthumbs@verbose%
1163         \message{Executing \jobname.tmb line \arabic{FileLine}.^^J}%
1164     \fi%
1165     \@thumbsout% Well, really execute it here.
1166     \stepcounter{FileLine}%
1167 \fi%
1168 \closein\@instreamthumb%

```

And on to the next overview page of thumb marks (if there are so many thumb marks):

```

1169     \addtocounter{th@mblinea}{\th@umbsperpage}%
1170     \addtocounter{th@mblineb}{\th@umbsperpage}%
1171     \setcounter{th@mbs@tmpA}{\th@mbsmax}%
1172     \ifnum \value{th@mblineb}>\value{th@mbs@tmpA}
1173         \setcounter{th@mblineb}{\value{th@mbs@tmpA}}%
1174     \fi%
1175 }{% else

```

When \jobname.tmb was not found, we cannot read from that file, therefore the FileLine is set to thumbsstop, stopping the calling of \th@mbs@verview in \thumbsoverview. (And we issue a warning, of course).

```

1176     \setcounter{FileLine}{\arabic{thumbsstop}}%
1177     \AtVeryVeryEnd{%
1178         \PackageWarningNoLine{thumbs}{%
1179             File \jobname.tmb not found.\MessageBreak%
1180             Rerun to get thumbs overview page(s) right.\MessageBreak%
1181         }%
1182     }%

```

```

1183     }%
1184   }%
1185 }%
1186 }
1187
1188 \end{package}

```

6 Installation

6.1 Downloads

Everything is available on **CTAN**: <http://www.ctan.org/tex-archive/>, but may need additional packages themselves.

thumbs.dtx For unpacking the **thumbs.dtx** file and constructing the documentation it is required:

- T_EXFormat L^AT_EX 2_ε: <http://www.CTAN.org/>
- document class ltxdoc, 2007/11/11, v2.0u, [CTAN:macros/latex/base/ltxdoc.dtx](#)
- package geometry, 2010/09/12, v5.6, [CTAN:macros/latex/contrib/geometry/geometry.dtx](#)
- package holtxdoc, 2011/02/04, v0.21, [CTAN:macros/latex/contrib/oberdiek/holtxdoc.dtx](#)
- package hypdoc, 2010/03/26, v1.9, [CTAN:macros/latex/contrib/oberdiek/hypdoc.dtx](#)

thumbs.sty The **thumbs.sty** for L^AT_EX 2_ε (i. e. all documents using the **thumbs** package) requires:

- T_EXFormat L^AT_EX 2_ε, <http://www.CTAN.org/>
- package xcolor, 2007/01/21, v2.11, [CTAN:macros/latex/contrib/xcolor/xcolor.dtx](#)
- package pagesLTS, 2011/03/17, v1.1o, [CTAN:macros/latex/contrib/pageslts/pagesLTS.dtx](#)
- package alphalph, 2010/04/18, v2.3, [CTAN:macros/latex/contrib/oberdiek/alphalph.dtx](#)
- package atbegshi, 2011/01/30, v1.15, [CTAN:macros/latex/contrib/oberdiek/atbegshi.dtx](#)
- package atveryend, 2011/04/23, v1.7, [CTAN:macros/latex/contrib/oberdiek/atveryend.dtx](#)
- package infwarerr, 2010/04/08, v1.3, [CTAN:macros/latex/contrib/oberdiek/infwarerr.dtx](#)
- package kvoptions, 2010/12/23, v3.10, [CTAN:macros/latex/contrib/oberdiek/kvoptions.dtx](#)
- package picture, 2009/10/11, v1.3, [CTAN:macros/latex/contrib/oberdiek/picture.dtx](#)
- package rerunfilecheck, 2011/04/15, v1.7, [CTAN:macros/latex/contrib/oberdiek/rerunfilecheck.dtx](#)

SW/SWP When compiling with SWP 5.50 Build 2960 (© MacKichan Software, Inc.), these additional packages are needed:

```
\usepackage[T1]{fontenc}
\usepackage{amsfonts}
\usepackage[math]{cellspace}
\usepackage{xcolor}
\pagecolor{white}
```

especially before `hyperref` and `thumbs`, but best right after the `\documentclass`! (The options for those packages might be changed by the user – I did not test all available options, thus first test, whether the document can be compiled with these options, and then try to change them according to your wishes.)

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

- package `eurosym`, 1998/08/06, v1.1, [CTAN:fonts/eurosym.zip](#)
- package `lipsum`, 2011/04/14, v1.2, [CTAN:macros/latex/contrib/lipsum/lipsum.dtx](#)
- package `hyperref`, 2011/04/17, v6.82g, [CTAN:macros/latex/contrib/hyperref/hyperref.dtx](#)
- package `thumbs`, 2011/05/20, v1.0c, [CTAN:macros/latex/contrib/thumbs/thumbs.dtx](#)
(Well, it is the example file for this package, and because you are reading the documentation for the `thumbs` package, it can be assumed that you already have some version of it – is it the current one?)

Alternatives As possible alternatives in section 3 there are listed

- `chapterthumb`, 2005/03/10, v0.1, [CTAN:info/examples/KOMA-Script-3/Anhang-B/source/chapterthumb.sty](#)
- `eso-pic`, 2010/10/06, v2.0c, [CTAN:macros/latex/contrib/eso-pic/eso-pic.dtx](#)
- `fancytabs`, 2011/04/16 v1.1, [CTAN:macros/latex/contrib/fancytabs/fancytabs.dtx](#)
- `thumb`, 2001, without file version, <ftp://ftp.dante.de/pub/tex/info/examples/ltt/thumb.sty>
- `thumb` (a completely different one), 1997/12/24, v1.0, [CTAN:macros/latex/contrib/thumb/thumb.dtx](#)
- `thumbindex`, 2009/12/13, without file version, <http://hisashim.org/2009/12/13/thumbindex.html>.
- `thumb-index`, from the `fancyhdr` package, 2005/03/22 v3.2, [CTAN:macros/latex/contrib/fancyhdr/fancyhdr.pdf](#)
- `thumbpdf`, 2010/07/07, v3.11, [CTAN:support/thumbpdf/thumbpdf.sty](#)
- `thumby`, 2010/01/14, v0.1, [CTAN:macros/latex/contrib/thumby/thumby.sty](#)

Oberdiek	All packages of Heiko Oberdiek's bundle 'oberdiek' (especially holtxdoc, alphalph, atbegshi, infwarerr, kvoptions, picture, and rerunfilecheck) are also available in a TDS compliant ZIP archive:
holtxdoc	
alphalph	CTAN:install/macros/latex/contrib/oberdiek.tds.zip .
atbegshi	It is probably best to download and use this, because the packages in there should be both recent and compatible.
atveryend	
infwarerr	
kvoptions	
picture	
rerunfilecheck	
hyperref	Heiko Oberdiek's hyperref package is not included in that bundle but needs to be downloaded separately, http://mirror.ctan.org/install/macros/latex/contrib/hyperref.tds.zip .
Münch	A hyperlinked list of my (other) packages can be found at http://www.Uni-Bonn.de/~uzs5pv/LaTeX.html .

6.2 Package, unpacking TDS

Package. This package should be available on [CTAN](http://mirror.ctan.org):

[CTAN:macros/latex/contrib/thumbs/thumbs.dtx](http://mirror.ctan.org/macros/latex/contrib/thumbs/thumbs.dtx)

The source file.

[CTAN:macros/latex/contrib/thumbs/thumbs.pdf](http://mirror.ctan.org/macros/latex/contrib/thumbs/thumbs.pdf)

The documentation.

[CTAN:macros/latex/contrib/thumbs/thumbs-example.pdf](http://mirror.ctan.org/macros/latex/contrib/thumbs/thumbs-example.pdf)

The compiled example file, as it should look like.

[CTAN:macros/latex/contrib/thumbs/README](http://mirror.ctan.org/macros/latex/contrib/thumbs/README)

The README file.

[CTAN:install/macros/latex/contrib/thumbs.tds.zip](http://mirror.ctan.org/install/macros/latex/contrib/thumbs.tds.zip)

Everything in TDS compliant, compiled format,

which additionally contains

thumbs.ins	The installation file.
thumbs.drv	The driver to generate the documentation.
thumbs.sty	The .style file.
thumbs-example.tex	The example file.

For required other packages, 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 thumbs.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):

```
thumbs.sty      → tex/latex/thumbs.sty
thumbs.pdf      → doc/latex/thumbs.pdf
thumbs-example.tex → doc/latex/thumbs-example.tex
thumbs-example.pdf → doc/latex/thumbs-example.pdf
thumbs.dtx      → source/latex/thumbs.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 (te \TeX , mik \TeX ,...) relies on file name databases, you must refresh these. For example, te \TeX 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{thumbs.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 this 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 pdf \LaTeX :

```
pdflatex thumbs.drv
makeindex -s gind.ist thumbs.idx
pdflatex thumbs.drv
makeindex -s gind.ist thumbs.idx
pdflatex thumbs.drv
```

6.5 Compiling the example

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

```
latex thumbs-example.tex
```

or (recommended)

```
pdflatex thumbs-example.tex
```

and will need probably at least four (!) compiler runs to get everything right.

7 Acknowledgements

I would like to thank HEIKO OBERDIEK (heiko dot oberdiek at gmail dot com) for providing the `hyperref` as well as a lot (!) of other useful packages (from which I also got everything I know about creating a file in `.dtx` format, ok, say it: copying), and the `news:comp.text.tex` and `news:de.comp.text.tex` newsgroups for their help in all things \TeX .

8 History

[2010/04/01 v0.01 – 2011/05/13 v0.46]

- Diverse β -versions during the creation of this package.

[2011/05/14 v1.0a]

- Upload to <http://www.ctan.org/pkg/thumbs>.

[2011/05/18 v1.0b]

- When more than one thumb mark is places at one single page, the variables containing the values (text, colour, backgroundcolour) of those thumb marks are now created dynamically. Theoretically, one can now have 2 147 483 647 thumb marks at one page instead of six thumb marks (as with `thumbs` version 1.0a), but I am quite sure that some other limit will be reached before the 2 147 483 647th thumb mark.
- Bug fix: When a document using the `thumbs` package was compiled, and the `.aux` and `.tmb` files were created, and the `.tmb` file was deleted (or renamed or moved), while the `.aux` file was not deleted, and the document was compiled again, and the `.aux` file was reused, then reading from the then empty `.tmb` files resulted in an endless loop. Fixed.
- Minor details.

- The thumb mark width is written to the log file (in `verbose` mode only). The knowledge of the value could be helpful for the user, when option `width={auto}` was used, and one wants the thumb marks to be half as big, or with double width, or a little wider, or a little smaller... Also thumb marks' height, top thumb margin and bottom thumb margin are given. Look for
***** THUMB dimensions *****
in the log file.
- Bug fix: There was a
 `\advance\th@mbheighty-\th@mbsdistance,`
where
 `\advance\th@mbheighty-\th@mbsdistance`
 `\advance\th@mbheighty-\th@mbsdistance`
should have been, causing wrong thumb marks' height, thereby wrong number of thumb marks per column, and thereby another endless loop. Fixed.
- The `ifthen` package is no longer required, removed.
- The `infwarerr` package is used for its `\@PackageInfoNoLine` command.
- The `warning` package is no longer used, removed. Instead, the `atveryend` package is used, because it is loaded anyway when `hyperref` is used.
- Minor details.

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.)

Note: Q, X, and Y are not missing in the following index, but no command *beginning* with any of these letters has been used in this `thumbs` package.

9 Index

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