

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. It must be loaded after the page size has been set, when printing the document “shrink to page” should not be used, and a printer capable of printing up to the border of the sheet of paper is needed (or afterwards cutting the paper).

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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 thumbed 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.

`thumbs` must be loaded after the page size has been set, when printing the document “shrink to page” should not be used, a printer capable of printing up to the border of the sheet of paper is needed (or afterwards cutting the paper).

Usage with `\usepackage[landscape]{geometry}`, `\documentclass[landscape]{...}`, `\usepackage[landscape]{geometry}`, `\usepackage{lscape}`, or `\usepackage{pdfscape}` is possible.

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.

The `thumbs` package takes the dimensions of the page `\AtBeginDocument` and does not react to changes afterwards. Therefore this package must be loaded *after* the page dimensions have been set, e. g. with package `geometry` (<http://ctan.org/pkg/geometry>). Of course it is also OK to just keep the default page/paper settings, but when anything is changed, it must be done before `thumbs` executes its `\AtBeginDocument` code.

The format of the paper, where the document shall be printed upon, should also be used for creating the document. Then the document can be printed without adapting the size, like e. g. “shrink to page”. That would add a white border around the document and by moving the thumb marks from the edge of the paper they no longer appear at the side of the stack of paper. (Therefore e. g. for printing the example file to A4 paper it is necessary to add `a4paper` option to the document class and recompile it! Then the thumb marks column change will occur at another point, of course.) It is also necessary to use a printer capable of printing up to the border of the sheet of paper. Alternatively it is possible after the printing to cut the paper to the right size. While performing this manually is probably quite cumbersome, printing houses use paper, which is slightly larger than the desired format, and afterwards cut it to format.

Some faulty `pdf`-viewer adds a white line at the bottom and right side of the document when presenting it. This does not change the printed version. To test for this problem, a page of the example file has been completely coloured. (Probably better exclude that page from printing...)

When using the thumb marks overview page, it is necessary to `\protect` entries like `\pi` (same as with entries in tables of contents, figures, tables,...).

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

2.2 Options

`options` The thumbs package takes the following options:

2.2.1 `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.

2.2.2 `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 ($\approx 16.5\text{mm} \approx 0.65\text{in}$).

2.2.3 `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. 0pt).

2.2.4 `width`

`width` Option `width` wants to know the horizontal extension of each thumb mark. The default option-value “`auto`” calculates a width-value automatically: $(\text{\paperwidth} - \text{\textwidth})$, 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={\paperwidth}` in the example!) Option `width={autoauto}` leads to thumb marks, which are just wide enough to fit the widest thumb mark text.

2.2.5 `distance`

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

2.2.6 `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 `\th@bmsvoffset` plus `\topmargin`. Dimensions (e.g. 1cm) are also accepted.

2.2.7 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 `1in+\topmargin-\th@mbdistance+\th@mbheighty+\headheight+\headsep+\textheight +\footskip-\th@mbdistance-\th@mbheighty`. Dimensions (e. g. 1 cm) are also accepted.

2.2.8 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*.

2.2.9 ignorehoffset, ignorevoffset

`ignorehoffset` Usually `\hoffset` and `\voffset` should be regarded, but moving the thumb marks away from the paper edge probably makes them useless. Therefore `\hoffset` and `\voffset` are ignored by default, or when option `ignorehoffset` or `ignorehoffset=true` is used (and `ignorevoffset` or `ignorevoffset=true`, respectively). But in case that the user wants to print at one sort of paper but later trim it to another one, regarding the offsets would be necessary. Therefore `ignorehoffset=false` and `ignorevoffset=false` can be used to regard these offsets. (Combinations `ignorehoffset=true`, `ignorevoffset=false` and `ignorehoffset=false`, `ignorevoffset=true` are also possible.)

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.

2.2.11 draft

`draft` Option `draft` (*not* the default) sets the thumb mark width to 2pt, thumb mark text colour to black and thumb mark background colour to gray. Either do not use this option with the `thumbs` package at all, or use `draft=false`, or `final`, or `final=true` to get the original appearance of the thumb marks.

2.2.12 hidethumbs

`hidethumbs` Option `hidethumbs` (*not* the default) prevents `thumbs` to create thumb marks (or thumb marks overview pages). This could be useful when thumb marks were placed, but for some reason no thumb marks (and overview pages) shall be placed. Removing `\usepackage[...]{thumbs}` would not work but create errors for unknown commands (e.g. `\addthumb`, `\addtitlethumb`, `\thumbnewcolumn`, `\stophthumb`, `\continuethumb`, `\addthumboverviewtocontents`, `\thumbsoverview`, `\thumbsoverviewback`, `\thumbsoverviewverso`, and `\thumbsoverviewdouble`). (A `\jobname.tmb` file is created nevertheless.) – Either do not use this option with the `thumbs` package at all, or use `hidethumbs=false` to get the original appearance of the thumb marks.

2.2.13 pagecolor (obsolete)

`pagecolor` Option `pagecolor` is obsolete. Instead the `pagecolor` package is used. Use `\pagecolor{...}` *after* `\usepackage[...]{thumbs}` and *before* `\begin{document}` to define a background colour of the pages.

2.3 Commands to be used in the document

2.3.1 \addthumb

`\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).

2.3.2 \addtitlethumb

`\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.

2.3.3 `\stophumb` and `\continuethumb`

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

2.3.4 `\thumbsoverview/back/verso/double`

`\thumbsoverview` The commands `\thumbsoverview`, `\thumbsoverviewback`, `\thumbsoverviewverso`, and/or `\thumbsoverviewdouble` is/are used to place the overview page(s) for the thumb marks. Their 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` can be used more than once (for example at the beginning and at the end of the document, or `\thumbsoverview` at the beginning and `\thumbsoverviewback` at the end). The overviews have labels `TableOfThumbs1`, `TableOfThumbs2`, and so on, which can be referred to with e.g. `\pageref{TableOfThumbs1}`. The reference `TableOfThumbs` (without number) aims at the last used Table of Thumbs (for compatibility with older versions of this package).

- `\thumbsoverview` prints the thumb marks at the right side and (in `twoside` mode) skips left sides (useful e.g. at the beginning of a document)
- `\thumbsoverviewback` prints the thumb marks at the left side and (in `twoside` mode) skips right sides (useful e.g. at the end of a document)
- `\thumbsoverviewverso` prints the thumb marks at the right side and (in `twoside` mode) repeats them at the next left side and so on (useful anywhere in the document and when one wants to prevent empty pages)
- `\thumbsoverviewdouble` prints the thumb marks at the left side and (in `twoside` mode) repeats them at the next right side and so on (useful anywhere in the document and when one wants to prevent empty pages)

2.3.5 `\thumbnewcolumn`

`\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`.

2.3.6 `\addthumbsoverviewtocontents`

`\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 `PerLATEX` 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 %% this is additionally needed: %
8 %% \usepackage[T1]{fontenc} %
9 %% \usepackage{amsfonts} %
10 %% \usepackage[math]{cellspace} %
11 %% \usepackage{xcolor} %
12 %% \pagecolor{white} %
13 %% \newcommand{\QT0}[2]{#2} %
14 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
15 \usepackage{lipsum}[2011/04/14]% v1.2
16 \usepackage{eurosym}[1998/08/06]% v1.1
17 \usepackage[extension=pdf,%
18 pdfpagelayout=TwoPageRight,pdfpagemode=UseThumbs,%
19 plainpages=false,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[thumblink=rule,linefill=dots,height={auto},minheight={47pt},%
29 width={auto},distance={2mm},topthumbmargin={auto},bottomthumbmargin={auto},%
30 ignorehoffset=true,ignorevoffset=true,final=true,hidethumbs=false,%
31 verbose=true]{thumbs}[2011/08/22]% v1.0i
32 \nopagecolor% use \pagecolor{white} if \nopagecolor does not work
33 \gdef\unit#1{\mathord{\thinspace\mathrm{#1}}}%
34 \makeatletter
35 \@ifundefined{Hy@Warning}{% hyperref not loaded
36 \@ifundefined{url}{\let\url\verb}% neither url
37 }{% hyperref loaded
38 }%
39 \makeatother
40 \listfiles
41 \begin{document}
42 \pagenumbering{arabic}
43 \section*{Example for thumbs}
44 \addcontentsline{toc}{section}{Example for thumbs}
45 \markboth{Example for thumbs}{Example for thumbs}
```

46
47 This example demonstrates the most common uses of package
48 `\textsf{thumbs}`, v1.0i as of 2011/08/22 (HMM).
49 The used options were `\texttt{thumblink=rule}`, `\texttt{linefill=dots}`,
50 `\texttt{height=auto}`, `\texttt{minheight=\{47pt\}}`, `\texttt{width={auto}}`,
51 `\texttt{distance=\{2mm\}}`, `\newline`
52 `\texttt{topthumbmargin=\{auto\}}`, `\texttt{bottomthumbmargin=\{auto\}}`,
53 `\texttt{ignorehoffset=true}`, `\texttt{ignorevoffset=true}`,
54 `\texttt{final=true}`, `\texttt{hidethumbs=false}`, and `\texttt{verbose=true}`.
55
56 `\noindent` These are the default options, except `\texttt{verbose=true}`.
57 For more details please see the documentation!`\newline`
58
59 `\textbf{Hyperlinks or not:}` If the `\textsf{hyperref}` package is loaded,
60 the references in the overview page for the thumb marks are also hyperlinked
61 (except when option `\texttt{thumblink=none}` is used).`\newline`
62
63 `\bigskip`
64
65 `{\color{teal}` Save per page about \$200`\unit{ml}`\$ water, \$2`\unit{g}`\$ CO₂`}`
66 and \$2`\unit{g}`\$ wood:`\newline`
67 Therefore please print only if this is really necessary.)`\newline`
68
69 `\bigskip`
70
71 `\textbf{%`
72 For testing purpose page `\pageref{greenpage}` has been completely coloured!
73 `\newline`
74 Better exclude it from printing`\ldots \newline}`
75
76 `\bigskip`
77
78 Some thumb mark texts are too large for the thumb mark (especially when the
79 paper size and therefore also the thumb mark size is decreased).
80 When option `\texttt{width=\{autoauto\}}` would be used,
81 the thumb mark width would be automatically increased.
82
83 `\bigskip`
84
85 For printing this example to another format of paper (e.\,g. A4)
86 it is necessary to add the according option (e.\,g. `\verb|a4paper|`)
87 to the document class and recompile it! (In that case the
88 thumb marks column change will occur at another point, of course.)
89 With paper format equal to document format the document can be printed
90 without adapting the size, like e.\,g.
91 `\textquotedblleft` shrink to page`\textquotedblright` .
92 That would add a white border around the document

93 and by moving the thumb marks from the edge of the paper they no longer appear
94 at the side of the stack of paper. It is also necessary to use a printer
95 capable of printing up to the border of the sheet of paper. Alternatively
96 it is possible after the printing to cut the paper to the right size.
97 While performing this manually is probably quite cumbersome,
98 printing houses use paper, which is slightly larger than the
99 desired format, and afterwards cut it to format.

100
101 \newpage
102
103 \addtitlethumb{Frontmatter}{0}{white}{gray}{pagesLTS.0}
104
105 At the first page no thumb mark was used, but we want to begin with thumb marks
106 at the first page, therefore a
107 \begin{verbatim}
108 \addtitlethumb{Frontmatter}{0}{white}{gray}{pagesLTS.0}
109 \end{verbatim}
110 was used at the beginning of this page.

111
112 \newpage
113
114 \tableofcontents
115
116 \newpage
117
118 To include an overview page for the thumb marks,
119 \begin{verbatim}
120 \addthumboverviewtocontents{section}{Thumb marks overview}%
121 \thumboverview{Table of Thumbs}
122 \end{verbatim}
123 is used, where \textbackslash addthumboverviewtocontents adds the thumb
124 marks overview page to the table of contents.

125
126 \addthumboverviewtocontents{section}{Thumb marks overview}%
127 \thumboverview{Table of Thumbs}
128
129 That were the overview pages for the thumb marks.

130
131 \newpage
132
133 \section{The first section}
134 \addthumb{First section}{\space\Huge{\textbf{\$1^{\text{st}}\$}}}{yellow}{green}
135
136 \begin{verbatim}
137 \addthumb{First section}{\space\Huge{\textbf{\$1^{\text{st}}\$}}}{yellow}{green}
138 \end{verbatim}

139

140 A thumb mark is added for this section. The parameters are: title for the thumb mark,
141 the text to be displayed in the thumb mark (choose your own format),
142 the colour of the text in the thumb mark,
143 and the background colour of the thumb mark (parameters in this order).\newline
144

145 Now for some pages of \textquotedblleft content\textquotedblright\ldots
146

147 \newpage
148 \lipsum[1]
149 \newpage
150 \lipsum[1]
151 \newpage
152 \lipsum[1]
153 \newpage
154

155 \section{The second section}
156 \addthumb{Second section}{\Huge{\textbf{\arabic{section}}}}{green}{yellow}
157

158 For this section, the text to be displayed in the thumb mark was set to
159 \begin{verbatim}
160 \Huge{\textbf{\arabic{section}}}
161 \end{verbatim}
162 i.\,e. the number of the section will be displayed (huge \& bold).\newline
163

164 Let us change the thumb mark on a page with an even number:
165

166 \newpage
167

168 \section{The third section}
169 \addthumb{Third section}{\Huge{\textbf{\arabic{section}}}}{blue}{red}
170

171 No problem!
172

173 And you do not need to have a section to add a thumb:
174

175 \newpage
176

177 \addthumb{Still third section}{\Huge{\textbf{\arabic{section}b}}}{red}{blue}
178

179 This is still the third section, but there is a new thumb mark.
180

181 On the other hand, you can even get rid of the the thumb marks
182 for some page(s):
183

184 \newpage
185

186 \stoptthumb

```

187
188 The command
189 \begin{verbatim}
190 \stopthumb
191 \end{verbatim}
192 was used here. Until another addthumb (with parameters) or
193 \begin{verbatim}
194 \continuethumb
195 \end{verbatim}
196 is used, there will be no more thumb marks.
197
198 \newpage
199
200 Still no thumb marks.
201
202 \newpage
203
204 Still no thumb marks.
205
206 \newpage
207
208 Still no thumb marks.
209
210 \newpage
211
212 \continuethumb
213
214 Thumb mark continued (unchanged).
215
216 \newpage
217
218 Thumb mark continued (unchanged).
219
220 \newpage
221
222 Time for another thumb,
223
224 \addthumb{Another heading}{Small text}{white}{black}
225
226 and another.
227
228 \addthumb{Huge Text}{\Huge{Huge Text}}{yellow}{green}
229
230 \bigskip
231
232 \textquotedblleft {\Huge{Huge Text}}\textquotedblright\ is too large for
233 the thumb mark. When option \texttt{width=\{autoauto\}} would be used,

```

234 the thumb mark width would be automatically increased.\label{HugeText}

235

236 \addthumb{bold text }{\textbf{Bf Text}}{pink}{blue}

237

238 \addthumb{Huge Bold Text}{\Huge{\textbf{HBT}}}{black}{yellow}

239

240 \bigskip

241

242 When there is more than one thumb mark at one page, this is also no problem.

243

244 \newpage

245

246 Some text

247

248 \newpage

249

250 Some text

251

252 \newpage

253

254 Some text

255

256 \newpage

257

258 \section{xcolor}

259 \addthumb{xcolor}{\Huge{\textbf{xcolor}}}{magenta}{cyan}

260

261 It is probably a good idea to have a look at the \textsf{xcolor} package

262 and use other colours than used in this example.

263

264 (About automatically increasing the thumb mark width to the thumb mark text

265 width please see the note at page~\pageref{HugeText}.)

266

267 \newpage

268

269 \addthumb{A mark}{\Huge{\textbf{A}}}{lime}{darkgray}

270

271 I just need to add further thumb marks to get them reaching the bottom of the page.

272

273 Generally the vertical size of the thumb marks is set to the value given in the

274 height option. If it is \texttt{auto}, the size of the thumb marks is decreased,

275 so that they fit all on one page. But when they get smaller than \texttt{minheight},

276 instead of decreasing their size further, a~new thumbs column is started

277 (which will happen here).

278

279 \newpage

280

281 \addthumb{B mark}{\Huge{\textbf{B}}}{brown}{pink}

282

283 There! A new thumb column was started automatically!

284

285 \newpage

286

287 \addthumb{C mark}{\Huge{\textbf{C}}}{brown}{pink}

288

289 You can, of course, keep the colour for more than one thumb mark.

290

291 \newpage

292

293 \addthumb{\$1/1.\,955\,83\$, EUR}{\Huge{\textbf{D}}}{orange}{violet}

294

295 I am just adding further thumb marks.

296

297 If you are curious why the thumb mark between

298 \textquotedblleft C mark\textquotedblright\ and \textquotedblleft E mark\textquotedblright\ has

299 not been named \textquotedblleft D mark\textquotedblright\ but

300 \textquotedblleft \$1/1.\,955\,83\$, EUR\textquotedblright :

301

302 $1\text{unit}\{DM\}=1\text{unit}\{D\ \text{Mark}\}=1\text{unit}\{Deutsche\ \text{Mark}\}\\newline

303 $=\frac{1}{1.\,955\,83}\,\$, \text{\euro } \$, =1/1.\,955\,83\text{unit}\{Euro\}=1/1.\,955\,83\text{unit}\{EUR\}\$.$

304

305 \newpage

306

307 Let us have a look at \verb|\thumboverviewverso|:

308

309 \addthumboverviewtocontents{section}{Table of Thumbs, verso mode}%

310 \thumboverviewverso{Table of Thumbs, verso mode}

311

312 \newpage

313

314 And, of course, also at \verb|\thumboverviewdouble|:

315

316 \addthumboverviewtocontents{section}{Table of Thumbs, double mode}%

317 \thumboverviewdouble{Table of Thumbs, double mode}

318

319 \newpage

320

321 \addthumb{E mark}{\Huge{\textbf{E}}}{lightgray}{black}

322

323 I am just adding further thumb marks.

324

325 \newpage

326

327 \addthumb{F mark}{\Huge{\textbf{F}}}{magenta}{black}


```

328
329 Some text.
330
331 \newpage
332 \thumbnewcolumn
333 \addthumb{New thumb marks column}{\Huge{\textit{NC}}}{magenta}{black}
334
335 There! A new thumb column was started manually!
336
337 \newpage
338
339 Some text.
340
341 \newpage
342
343 \addthumb{G mark}{\Huge{\textbf{G}}}{orange}{violet}
344
345 I just added another thumb mark.
346
347 \newpage
348
349 \pagecolor{green}
350
351 \makeatletter
352 \@ifundefined{Hy@Warning}{% hyperref not loaded
353 }{\phantomsection% hyperref loaded
354 }%
355 \makeatother
356
357 \label{greenpage}
358
359 Some faulty pdf-viewer sometimes (for the same document!)
360 adds a white line at the bottom and right side of the document
361 when presenting it. This does not change the printed version.
362 To test for this problem, this page has been completely coloured.
363 (Probably better exclude this page from printing!)
364
365 \textsc{Heiko Oberdiek} wrote at Tue, 26 Apr 2011 14:13:29 +0200
366 in the \newline
367 comp.text.tex newsgroup (see e.\,g. \newline
368 \url{http://groups.google.com/group/de.comp.text.tex/msg/b3aea4a60e1c3737}): \newline
369 \textquotedblleft Der Ursprung ist 0 0,
370 da gibt es nicht viel zu runden; bei den anderen Seiten
371 werden pt als bp in die PDF-Datei geschrieben, d.h.
372 der Balken ist um 72.27/72 zu gro\ss{}, das
373 sollte auch Rundungsfehler abdecken.\textquotedblright
374

```

375 (The origin is 0 0, there is not much to be rounded;
376 for the other sides the $\text{\unit{pt}}$ are written as $\text{\unit{bp}}$ into
377 the pdf-file, i.\,e. the rule is too large by $72.27/72$, which
378 should cover also rounding errors.)
379

```

380 The thumb marks are also too large - on purpose! This has been done
381 to assure, that they cover the page up to its (paper) border,
382 therefore they are placed a little bit over the paper margin.
383
384 Now I red somewhere in the net (should have remembered to note the url),
385 that white margins are presented, whenever there is some object outside
386 of the page. Thus, it is a feature, not a bug?!
387 What I do not understand: The same document sometimes is presented
388 with white lines and sometimes without (same viewer, same PC).\newline
389 But at least it does not influence the printed version.
390
391 \newpage
392
393 \pagecolor{white}
394
395 It is possible to use the Table of Thumbs more than once (for example
396 at the beginning and the end of the document) and to refer to them via e.\,g.
397 \verb|\pageref{TableOfThumbs1}, \pageref{TableOfThumbs2}|, ... ,
398 here: page \pageref{TableOfThumbs1}, page \pageref{TableOfThumbs2},
399 and via e.\,g. \verb|\pageref{TableOfThumbs}| it is referred to the last used
400 Table of Thumbs (for compatibility with older package versions).
401 If there is only one Table of Thumbs, this one is also the last one, of course.
402 Here it is at page \pageref{TableOfThumbs}.\newline
403
404 Now let us have a look at \verb|\thumbsoverviewback|:
405
406 \addthumbsoverviewtocontents{section}{Table of Thumbs, back mode}%
407 \thumbsoverviewback{Table of Thumbs, back mode}
408
409 \newpage
410
411 Text can be placed after any of the Tables of Thumbs, of course.
412
413 \end{document}
414 \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.

```
415 \*package)
416 \NeedsTeXFormat{LaTeX2e}[2009/09/24]
417 \ProvidesPackage{thumbs}[2011/08/22 v1.0i]
418     Thumb marks and overview page(s) (HMM)]
419
```

A short description of the thumbs package:

```
420 %% This package allows to create a customizable thumb index,
421 %% providing a quick and easy reference method for large documents,
422 %% as well as an overview page.
423
```

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: Read the manual of the thumbs package!) 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.

```
424 \message{^^J *** Compiling with SW(P)? ^^J%
425 Please see the sw(p)*.log or \jobname.log-file! *** ^^J}
426 \PackageWarningNoLine{thumbs}{%
427   When compiling with SWP 5.50 Build 2960\MessageBreak%
428   (\copyright\space MacKichan Software, Inc.),\MessageBreak%
429   these additional packages are needed:\MessageBreak%
430   \string\usepackage[T1]{fontenc}\MessageBreak%
431   \string\usepackage{amsfonts}\MessageBreak%
432   \string\usepackage[math]{cellspace}\MessageBreak%
433   \string\usepackage{xcolor}\MessageBreak%
434   \string\pagecolor{white}\MessageBreak%
435   \string\newcommand{\string\QT0}[2]{\string#2}\MessageBreak%
436   especially before hyperref and thumbs,\MessageBreak%
437   but best right after the \string\documentclass!\MessageBreak%
438 }
439
```

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

```
440 \RequirePackage{kvoptions}[2010/12/23]% v3.10

    as well as some other packages:

441 \RequirePackage{atbegshi}[2011/01/30]% v1.15
442 \RequirePackage{xcolor}[2007/01/21]% v2.11
443 \RequirePackage{picture}[2009/10/11]% v1.3
444 \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). It also loads the `undolabl` package, which is needed for `\overridelabel`:

```
445 \RequirePackage{pageslts}[2011/08/08]% v1.2a
446 \RequirePackage{pagecolor}[2011/08/08]% v1.0c
447 \RequirePackage{rerunfilecheck}[2011/04/15]% v1.7
448 \RequirePackage{infwarerr}[2010/04/08]% v1.3
449 \RequirePackage{atveryend}[2011/04/23]% v1.7
```

A last information for the user:

```
450 %% thumbs may work with earlier versions of LaTeX2e and those packages,
451 %% but this was not tested. Please consider updating your LaTeX contribution
452 %% and packages to the most recent version (if they are not already the most
453 %% recent version).
454
```

See subsection 6.1 about how to get them.

The options are introduced:

```
455 \SetupKeyvalOptions{family=thumbs,prefix=thumbs@}
456 \DeclareStringOption{linefill}[dots]% \thumbs@linefill
457 \DeclareStringOption{rule}{thumblink}[rule]
458 \DeclareStringOption[47pt]{minheight}[47pt]
459 \DeclareStringOption{height}[auto]
460 \DeclareStringOption{width}[auto]
461 \DeclareStringOption{distance}[2mm]
462 \DeclareStringOption{topthumbmargin}[auto]
463 \DeclareStringOption{bottomthumbmargin}[auto]
464 \DeclareBoolOption[true]{ignorehoffset}
465 \DeclareBoolOption[true]{ignorevoffset}
466 \DeclareBoolOption[true]{verbose}
467 \DeclareComplementaryOption{silent}{verbose}
468 \DeclareBoolOption{draft}
469 \DeclareComplementaryOption{final}{draft}
470 \DeclareBoolOption[false]{hidethumbs}
```

`pagecolor` The `pagecolor` option is obsolete now, but for compatibility with older documents we still provide it at the time being (might be removed in future versions).

```
471 \DeclareStringOption{pagecolor}
472
473 \ProcessKeyvalOptions*
474
```

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

```
475 \ifx\thumbs@pagecolor\empty%
476 \pagecolor{\thepagecolor}
477 \else
```

```

478 \PackageWarningNoLine{thumbs}{Option pagecolor is obsolete.\MessageBreak%
479   Instead the pagecolor package is used.\MessageBreak%
480   Use \string\pagecolor{...}\space after \string\usepackage[...]{thumbs}\space and\MessageBreak%
481   before \string\begin{document}\space to define a background colour\MessageBreak%
482   of the pages}
483 \pagecolor{\thumbs@pagecolor}
484 \fi
485

```

ignorehoffset
ignorevoffset

Usually `\hoffset` and `\voffset` should be regarded, but moving the thumb marks away from the paper edge probably makes them useless. Therefore `\hoffset` and `\voffset` are ignored by default, or when option `ignorehoffset` or `ignorehoffset=true` is used (and `ignorevoffset` or `ignorevoffset=true`, respectively). But in case that the user wants to print at one sort of paper but later trim it to another one, regarding the offsets would be necessary. Therefore `ignorehoffset=false` and `ignorevoffset=false` can be used to regard these offsets. (Combinations `ignorehoffset=true`, `ignorevoffset=false` and `ignorehoffset=false`, `ignorevoffset=true` are also possible.)

```

486 \ifthumbs@ignorehoffset
487 \PackageWarningNoLine{thumbs}{%
488   Option ignorehoffset NOT =false:\MessageBreak%
489   hoffset will be ignored.\MessageBreak%
490   To make thumbs regard hoffset use option\MessageBreak%
491   ignorehoffset=false}
492 \gdef\th@bmshoffset{Opt}
493 \else
494 \PackageWarningNoLine{thumbs}{%
495   Option ignorehoffset=false:\MessageBreak%
496   hoffset will be regarded.\MessageBreak%
497   This might move the thumb marks away from the paper edge}
498 \gdef\th@bmshoffset{\hoffset}
499 \fi
500
501 \ifthumbs@ignorevoffset
502 \PackageWarningNoLine{thumbs}{%
503   Option ignorevoffset NOT =false:\MessageBreak%
504   voffset will be ignored.\MessageBreak%
505   To make thumbs regard voffset use option\MessageBreak%
506   ignorevoffset=false}
507 \gdef\th@bmsvoffset{-\voffset}
508 \else
509 \PackageWarningNoLine{thumbs}{%
510   Option ignorevoffset=false:\MessageBreak%
511   voffset will be regarded.\MessageBreak%
512   This might move the thumb mark outside of the printable area}
513 \gdef\th@bmsvoffset{\voffset}
514 \fi
515

```

linefill

We process the linefill option value:

```
516 \ifx\thumbs@linefill\empty%
517   \gdef\th@mbs@linefill{\hspace*{\fill}}
518 \else
519   \def\th@mbstest{line}%
520   \ifx\thumbs@linefill\th@mbstest%
521     \gdef\th@mbs@linefill{\hrulefill}
522   \else
523     \def\th@mbstest{dots}%
524     \ifx\thumbs@linefill\th@mbstest%
525       \gdef\th@mbs@linefill{\dotfill}
526     \else
527       \PackageError{thumbs}{Option linefill with invalid value}{%
528         Option linefill has value '\thumbs@linefill'.\MessageBreak%
529         Valid values are '' (empty), 'line', or 'dots'.\MessageBreak%
530         '' (empty) will be used now.\MessageBreak%
531       }
532     \gdef\th@mbs@linefill{\hspace*{\fill}}
533   \fi
534 \fi
535 \fi
536
```

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

```
537 \newdimen\th@mbwidthx
538
539 \newdimen\th@mbheighty% Thumb height y
540 \setlength{\th@mbheighty}{\z@}
541
542 \newdimen\th@mbposx
543 \newdimen\th@mbposy
544 \newdimen\th@mbposyA
545 \newdimen\th@mbposytop
546 \newdimen\th@mbposybottom
547 \newdimen\th@mbwidthxtoc
548 \newdimen\th@mbsposytocy
549 \newdimen\th@mbsposytocy
550
551 \newdimen\th@mbsdistance% vertical distance between thumb marks
552 \ifx\thumbs@distance\empty%
553   \setlength{\th@mbsdistance}{1mm}
554 \else
555   \setlength{\th@mbsdistance}{\thumbs@distance}
556 \fi
557
```

```

558 \ifthumbs@verbose% \relax
559 \else
560   \PackageWarningNoLine{thumbs}{%
561     Option verbose=false (or silent=true) found:\MessageBreak%
562     You will lose some information}
563 \fi
564

```

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

```

565 \newbox\ThumbsBox
566

```

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 `localloc` 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).

```

567 \newcounter{th@mbs@tmpA}
568 \setcounter{th@mbs@tmpA}{0}
569
570 \gdef\th@mbs{0}
571 \gdef\th@mbsmax{0}
572 \gdef\th@umbasperpage{0}% will be set via aux file
573 \gdef\th@umbasperpagecount{0}
574
575 \gdef\th@mbtitle{}
576 \gdef\th@mbtext{}
577 \gdef\th@mbtextcolour{\thepagecolor}
578 \gdef\th@mbackgroundcolour{\thepagecolor}
579 \gdef\th@mbcolumn{0}
580
581 \gdef\th@mbtextA{}
582 \gdef\th@mbtextcolourA{\thepagecolor}
583 \gdef\th@mbackgroundcolourA{\thepagecolor}
584
585 \gdef\th@mbprinting{1}
586 \gdef\th@mbtoprint{0}
587 \gdef\th@mbonpage{0}
588 \gdef\th@mbonpagemax{0}
589
590 \gdef\th@mbcolumnnew{0}
591
592 \gdef\th@mbs@toc@level{}
593 \gdef\th@mbs@toc@text{}
594
595 \gdef\th@mbmaxwidth{Opt}
596
597 \gdef\th@mb@titlelabel{}
598

```



```
599 \gdef\th@mbstable{0}% number of thumb marks overview tables
600
```

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

```
601 \if@filesw% \relax
602 \else
603   \PackageWarningNoLine{thumbs}{No auxiliary files allowed!\MessageBreak%
604     It was not allowed to write to files.\MessageBreak%
605     A lot of packages do not work without access to files\MessageBreak%
606     like the .aux one. The thumbs package needs to write\MessageBreak%
607     to the \jobname.tmb file. To exit press\MessageBreak%
608     Ctrl+Z\MessageBreak%
609     .\MessageBreak%
610   }
611 \fi
612
```

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)”.

```
613 \newcommand{\setth@mbheight}{%
614   \setlength{\th@mbheighty}{\z@}
615   \advance\th@mbheighty+\headheight
616   \advance\th@mbheighty+\headsep
617   \advance\th@mbheighty+\textheight
618   \advance\th@mbheighty+\footskip
619   \setcounter{th@mbs@tmpA}{\th@mbsmax}
620   \ifnum\value{th@mbs@tmpA}>1
621     \divide\th@mbheighty\th@mbsmax
622   \fi
623   \advance\th@mbheighty-\th@mbsdistance
624   \advance\th@mbheighty-\th@mbsdistance
625 }
626
```

At the beginning of the document `\AtBeginDocument` is executed. `\th@bmshoffset` and `\th@bmsvoffset` are set again, because `\hoffset` and `\voffset` could have been changed.

```
627 \AtBeginDocument{%
628   \ifthumbs@ignorehoffset
629     \gdef\th@bmshoffset{0pt}
630   \else
631     \gdef\th@bmshoffset{\hoffset}
632   \fi
633   \ifthumbs@ignorevoffset
634     \gdef\th@bmsvoffset{-\voffset}
635   \else
636     \gdef\th@bmsvoffset{\voffset}
637   \fi
```

```

638 \xdef\thumbpaperwidth{\the\paperwidth}
639 \setlength{\thumbposyA}{1pt}
640 \ifdim \thumbs@minheight < \thumbposyA% too small
641   \setlength{\thumbs@minheight}{1pt}
642 \else
643   \ifdim \thumbs@minheight = \thumbposyA% small, but ok
644   \else
645     \ifdim \thumbs@minheight > \thumbposyA% ok
646     \else
647       \PackageError{thumbs}{Option minheight has invalid value}{%
648         Please use a number and a length unit (e.g. mm, cm, pt)\MessageBreak%
649         and no space between as value for option minheight\MessageBreak%
650         and include this value+unit combination in curly brackets\MessageBreak%
651         (please see the thumbs-example.tex file).\MessageBreak%
652         When pressing return, minheight will now be set to 47pt.\MessageBreak%
653       }
654       \setlength{\thumbs@minheight}{47pt}
655     \fi
656   \fi
657 \fi
658 \setlength{\thumbposyA}{\thumbs@minheight}

```

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

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

```

659 \ifx\thumbs@height\empty%
660   \setlength{\thumbheighty}{\thumbposyA}
661 \else
662   \def\thumbstest{auto}
663   \ifx\thumbs@height\thumbstest%

```

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

```

664   \setthumbheight

```

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

```

665   \ifdim \thumbheighty < \thumbs@minheight
666     \PackageWarningNoLine{thumbs}{Thumbs not high enough:\MessageBreak%
667       Option height has value 'auto'. For \thumbmax\space thumbs per page\MessageBreak%
668       this results in a thumb height of \the\thumbheighty.\MessageBreak%
669       This is lower than the minimal thumb height, \thumbs@minheight,\MessageBreak%
670       therefore another thumbs column will be opened.\MessageBreak%
671       If you do not want this, choose a smaller value\MessageBreak%
672       for option 'minheight'%
673     }

```

```

674     \setlength{\th@mbheighty}{\z@}
675     \advance\th@mbheighty+\th@mbposyA% = \thumbs@minheight
676     \fi
677     \else

```

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

```

678     \ifthumbs@verbose
679     \edef\thumbsinfo{\the\th@mbheighty}
680     \PackageInfo{thumbs}{Now setting thumbs' height to \thumbsinfo .}
681     \fi
682     \setlength{\th@mbheighty}{\thumbs@height}
683     \fi
684     \fi

```

Read in the \jobname.tmb-file:

```

685 \newread\@instreamthumb%

```

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

```

686 \ifthumbs@verbose
687   \message{^^J}
688   \@PackageInfoNoLine{thumbs}{***** THUMB dimensions *****}
689   \edef\thumbsinfo{\the\th@mbheighty}
690   \@PackageInfoNoLine{thumbs}{The height of the thumb marks is \thumbsinfo}
691   \fi

```

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

```

692 \ifthumbs@draft
693   \setlength{\th@mbwidthx}{2pt}
694 \else
695   \setlength{\th@mbwidthx}{\paperwidth}
696   \advance\th@mbwidthx-\textwidth
697   \divide\th@mbwidthx4
698   \setlength{\th@mbposyA}{0sp}
699   \ifx\thumbs@width\empty%
700     \else
701     \def\th@mbstest{auto}
702     \ifx\thumbs@width\th@mbstest%
703     \else
704       \def\th@mbstest{autoauto}
705       \ifx\thumbs@width\th@mbstest%
706         \@ifundefined{th@mbmaxwidtha}{%
707           \if@files%
708             \gdef\th@mbmaxwidtha{Opt}
709             \setlength{\th@mbwidthx}{\th@mbmaxwidtha}
710             \AtEndAfterFileList{
711               \PackageWarningNoLine{thumbs}{%
712                 \string\th@mbmaxwidtha\space undefined.\MessageBreak%
713                 Rerun to get the thumb marks width right%

```

```

714     }
715   }
716   \else
717     \PackageError{thumbs}{%
718       You cannot use option autoauto without \jobname.aux file.%
719     }
720   \fi
721 }{%\else
722   \setlength{\th@mbwidthx}{\th@mbmaxwidtha}
723 }%\fi
724 \else
725   \ifdim \thumbs@width > \th@mbposyA% OK
726   \setlength{\th@mbwidthx}{\thumbs@width}
727   \else
728     \PackageError{thumbs}{Thumbs not wide enough}{%
729       Option width has value '\thumbs@width'.\MessageBreak%
730       This is not a valid dimension larger than zero.\MessageBreak%
731       Width will be set automatically.\MessageBreak%
732     }
733   \fi
734 \fi
735 \fi
736 \fi
737 \fi
738 \ifthumbs@verbose
739   \edef\thumbsinfo{\the\th@mbwidthx}
740   \@PackageInfoNoLine{thumbs}{The width of the thumb marks is \thumbsinfo}
741   \ifthumbs@draft
742     \@PackageInfoNoLine{thumbs}{because thumbs package is in draft mode}
743   \fi
744 \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:

```

745 % Thumb position x \th@mbposx
746 \setlength{\th@mbposx}{\paperwidth}
747 \advance\th@mbposx-\th@mbwidthx
748 \ifthumbs@ignorehoffset
749   \advance\th@mbposx-\hoffset
750 \fi
751 \advance\th@mbposx+1pt
752 % Thumb position y \th@mbposy
753 \ifx\thumbs@topthumbmargin\empty%
754   \def\thumbs@topthumbmargin{auto}
755 \fi

```

```

756 \def\thumbstest{auto}
757 \ifx\thumbs@topthumbmargin\thumbstest%
758   \setlength{\thumbposy}{1in}
759   \advance\thumbposy+\thumbsoffset
760   \advance\thumbposy+\topmargin
761   \advance\thumbposy-\thumbdistance
762   \advance\thumbposy+\thumbheighty
763 \else
764   \setlength{\thumbposyA}{-1pt}
765   \ifdim \thumbs@topthumbmargin > \thumbposyA% OK
766   \else
767     \PackageWarning{thumbs}{Thumbs column starting too high.\MessageBreak%
768       Option topthumbmargin has value '\thumbs@topthumbmargin'.\MessageBreak%
769       topthumbmargin will be set to -1pt.\MessageBreak%
770     }
771     \gdef\thumbs@topthumbmargin{-1pt}
772   \fi
773   \setlength{\thumbposy}{\thumbs@topthumbmargin}
774   \advance\thumbposy-\thumbdistance
775   \advance\thumbposy+\thumbheighty
776 \fi
777 \setlength{\thumbposytop}{\thumbposy}
778 \ifthumbs@verbose%
779   \setlength{\@tempdimc}{\thumbposytop}
780   \advance\@tempdimc-\thumbheighty
781   \advance\@tempdimc+\thumbdistance
782   \edef\thumbsinfo{\the\@tempdimc}
783   \@PackageInfoNoLine{thumbs}{The top thumb margin is \thumbsinfo}
784 \fi

```

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

```

785 % Max. thumb position y \thumbposybottom
786 \ifx\thumbs@bottomthumbmargin\empty%
787   \gdef\thumbs@bottomthumbmargin{auto}
788 \fi
789 \def\thumbstest{auto}
790 \ifx\thumbs@bottomthumbmargin\thumbstest%
791   \setlength{\thumbposybottom}{1in}
792   \ifthumbs@ignorevoffset% \relax
793   \else \advance\thumbposybottom+\thumbsoffset
794   \fi
795   \advance\thumbposybottom+\topmargin
796   \advance\thumbposybottom-\thumbdistance
797   \advance\thumbposybottom+\thumbheighty
798   \advance\thumbposybottom+\headheight
799   \advance\thumbposybottom+\headsep
800   \advance\thumbposybottom+\textheight
801   \advance\thumbposybottom+\footskip

```

```

802 \advance\th@mbposybottom-\th@mbsdistance
803 \advance\th@mbposybottom-\th@mbheighty
804 \else
805 \setlength{\th@mbposyA}{\paperheight}
806 \advance\th@mbposyA-\thumbs@bottomthumbmargin
807 \advance\th@mbposyA-\th@mbposytop
808 \advance\th@mbposyA-\th@mbsdistance
809 \advance\th@mbposyA-\th@mbheighty
810 \advance\th@mbposyA-\th@mbsdistance
811 \ifdim \th@mbposyA > 0sp%ok
812 \else
813 \setlength{\th@mbposyA}{\paperheight}
814 \advance\th@mbposyA-\th@mbposytop
815 \advance\th@mbposyA-\th@mbsdistance
816 \advance\th@mbposyA-\th@mbheighty
817 \advance\th@mbposyA-\th@mbsdistance
818 \advance\th@mbposyA-1pt
819 \PackageWarning{thumbs}{Thumbs column ending too high.\MessageBreak%
820 Option bottomthumbmargin has value '\thumbs@bottomthumbmargin'.\MessageBreak%
821 bottomthumbmargin will be set to '\the\th@mbposyA'.\MessageBreak%
822 }
823 \xdef\thumbs@bottomthumbmargin{\the\th@mbposyA}
824 \fi
825 \setlength{\th@mbposyA}{\thumbs@bottomthumbmargin}
826 \setlength{\@tempdimc}{-1pt}
827 \ifdim \th@mbposyA < \@tempdimc%
828 \PackageWarning{thumbs}{Thumbs column ending too low.\MessageBreak%
829 Option bottomthumbmargin has value '\thumbs@bottomthumbmargin'.\MessageBreak%
830 bottomthumbmargin will be set to -1pt.\MessageBreak%
831 }
832 \gdef\thumbs@bottomthumbmargin{-1pt}
833 \fi
834 \setlength{\th@mbposybottom}{\paperheight}
835 \advance\th@mbposybottom-\thumbs@bottomthumbmargin
836 \fi
837 \ifthumbs@verbose%
838 \setlength{\@tempdimc}{\paperheight}
839 \advance\@tempdimc-\th@mbposybottom
840 \edef\thumbsinfo{\the\@tempdimc}
841 \@PackageInfoNoLine{thumbs}{The bottom thumb margin is \thumbsinfo}
842 \@PackageInfoNoLine{thumbs}{*****}
843 \message{^^J}
844 \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@mbposyA` is used to remember this position unchanged.

```

845 \advance\th@mbposy-\th@mbheighty% because it will be advanced also for the first thumb
846 \setlength{\th@mbposyA}{\th@mbposy}% \th@mbposyA will change.
847 \setlength{\th@mbposyA}{\th@mbposy}% \th@mbposyA shall not be changed.
848 }
849

```

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

```

850 \newcommand{\th@mb@davance}{%
851   \advance\th@mbposy+\th@mbheighty%
852   \advance\th@mbposy+\th@mb@distance%
853   \ifdim\th@mbposy>\th@mbposybottom%
854     \advance\th@mbposy-\th@mbheighty%
855     \advance\th@mbposy-\th@mb@distance%
856   \else%
857     \advance\th@mbposy-\th@mbheighty%
858     \advance\th@mbposy-\th@mb@distance%
859     \thumborigaddthumb{}{}{\string\th@mb@pagecolor}\string\th@mb@pagecolor}%
860     \th@mb@davance%
861   \fi%
862 }
863

```

`\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`.

```

864 \newcommand{\thumbnewcolumn}{%
865   \ifx\th@mbtoprint\pagesLTS@one%
866     \PackageError{thumbs}{\string\thumbnewcolumn\space after \string\addthumb }{%
867       On page \th@mb@page\space (approx.) \string\addthumb\space was used and *afterwards* \string\thumbnewcolumn .\MessageBreak%
868       When you want to use \string\thumbnewcolumn , do not use an \string\addthumb\space on the same.\MessageBreak%
869       page before \string\thumbnewcolumn . Thus, either remove the \string\addthumb , or use a.\MessageBreak%
870       \string\pagebreak , \string\newpage\space etc. before \string\thumbnewcolumn .\MessageBreak%
871       (And remember to use an \string\addthumb\space*after* \string\thumbnewcolumn .)\MessageBreak%
872       Your command \string\thumbnewcolumn\space will be ignored now.%
873     }%
874   \else%

```

```

875 \PackageWarning{thumbs}{%
876   Starting of another column requested by command\MessageBreak%
877   \string\thumbnewcolumn.\space Only use this command directly\MessageBreak%
878   before an \string\addthumb\space - did you?!\MessageBreak%
879 }%
880 \gdef\th@mbcolumnnew{1}%
881 \th@mb@advance%
882 \gdef\th@mbprinting{0}%
883 \gdef\th@mbcolumnnew{2}%
884 \fi%
885 }
886

```

`\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.

```

887 \newcommand{\addtitlethumb}[5]{%
888   \xdef\th@mb@titlelabel{#5}%
889   \addthumb{#1}{#2}{#3}{#4}%
890   \xdef\th@mb@titlelabel{}%
891 }
892

```

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

```

893 \newcommand{\addthumb}[4]{%
894   \gdef\th@mbprinting{1}%
895   \advance\th@mbposy\th@mbheighty%
896   \advance\th@mbposy\th@mbsdistance%
897   \ifdim\th@mbposy>\th@mbposybottom%
898     \PackageWarning{thumbs}{%
899       Thumbs column full, starting another column.\MessageBreak%
900     }%
901   \setlength{\th@mbposy}{\th@mbposytop}%
902   \advance\th@mbposy\th@mbsdistance%
903   \ifx\th@mbcolumn\pagesLTS@zero%
904     \xdef\th@umbsperpagecount{\th@mbs}%
905     \gdef\th@mbcolumn{1}%
906   \fi%
907 \fi%
908 \setcounter{th@mbs@tmpA}{\th@mbs}%
909 \addtocounter{th@mbs@tmpA}{+1}%
910 \xdef\th@mbs{\arabic{th@mbs@tmpA}}%

```


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).

```
911 \gdef\th@mbtitle{#1}%
912 \gdef\th@mbtext{#2}%
913 \gdef\th@mbtextcolour{#3}%
914 \gdef\th@mbackgroundcolour{#4}%
```

The width of the thumb mark text is determined and compared to the width of the thumb mark (rule). When the text is wider than the rule, this has to be changed (either automatically with option `width={autoauto}` in the next compilation run or manually by changing `width={...}` by the user).

```
915 \edef\th@bstmpwidth{\the\th@mbposyA}%
916 \settowidth{\th@mbposyA}{\th@mbtext\space}%
917 \ifdim\th@mbposyA>\th@mbmaxwidth%
918   \xdef\th@mbmaxwidth{\the\th@mbposyA}%
919   \fi%
920 \ifdim\th@mbposyA>\th@mbwidthx%
921   \ifthumbs@draft% \relax
922   \else%
923     \edef\thumbsinfoa{\the\th@mbwidthx}
924     \edef\thumbsinfob{\the\th@mbposyA}
925     \PackageWarning{thumbs}{%
926       Thumb mark too small (width: \thumbsinfoa )\MessageBreak%
927       or its text too wide (width: \thumbsinfob )\MessageBreak%
928     }%
929   \fi%
930 \fi%
931 \setlength{\th@mbposyA}{\th@bstmpwidth}%
```

`\@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!).

```
932 \@ifundefined{Hy@Warning}{% hyperref not loaded
933   }{% hyperref loaded
934   \phantomsection%
```

```

935     }%
936 \label{thumbs.\th@mbs}%
937 \if@filesw%
938   \ifx\th@mb@titlelabel\empty%
939     \addtocontents{tmb}{\string\thumbcontents{#1}{#2}{#3}{#4}{\thepage}{thumbs.\th@mbs}{\th@mbcolumnnew}}%
940   \else%
941     \addtocounter{page}{-1}%
942     \edef\th@mb@page{\thepage}%
943     \addtocontents{tmb}{\string\thumbcontents{#1}{#2}{#3}{#4}{\th@mb@page}{\th@mb@titlelabel}{\th@mbcolumnnew}}%
944     \addtocounter{page}{+1}%
945   \fi%
946 %\else there is a problem, but the according warning message was already given earlier.
947 \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).

```

948 \ifx\th@mbcolumnnew\pagesLTS@one%
949 \else%
950   \setcounter{th@mbs@tmpA}{\th@mbonpage}%
951   \addtocounter{th@mbs@tmpA}{+1}%
952   \xdef\th@mbonpage{\arabic{th@mbs@tmpA}}%
953 \fi%
954 \ifx\th@mbtoprint\pagesLTS@zero%
955 \else%
956   \ifx\th@mbcolumnnew\pagesLTS@zero%
957     \PackageWarning{thumbs}{More than one thumb at one page:\MessageBreak%
958       You placed more than one thumb mark (at least \th@mbonpage)\MessageBreak%
959       on page \thepage \space (page is approximately).\MessageBreak%
960       Maybe insert a pagebreak?\MessageBreak%
961     }%
962   \fi%
963 \fi%
964 \ifnum\th@mbonpage=1%
965   \ifnum\th@mbonpagemax>0% \relax
966   \else \gdef\th@mbonpagemax{1}%
967   \fi%
968   \gdef\th@mbtextA{#2}%
969   \gdef\th@mbtextcolourA{#3}%
970   \gdef\th@mbbackgroundcolourA{#4}%
971   \setlength{\th@mbposyA}{\th@mbposy}%
972 \else%
973   \ifx\th@mbcolumnnew\pagesLTS@zero%
974   \setcounter{th@mbs@tmpA}{1}%
975   \edef\th@mbonpagetest{\arabic{th@mbs@tmpA}}%

```

```

976 \@whilenum\th@mbonpagetest<\th@mbonpage\do{%
977 \addtocounter{th@mbs@tmpA}{1}%
978 \xdef\th@mbonpagetest{\arabic{th@mbs@tmpA}}%
979 \ifnum\th@mbonpage=\th@mbonpagetest%
980 \ifnum\th@mbonpagemax<\th@mbonpage%
981 \xdef\th@mbonpagemax{\th@mbonpage}%
982 \fi%
983 \edef\th@mbtmpdef{\csname th@mbtext\Alpha\Alph{\arabic{th@mbs@tmpA}}\endcsname}%
984 \expandafter\gdef\th@mbtmpdef{#2}%
985 \edef\th@mbtmpdef{\csname th@mbtextcolour\Alpha\Alph{\arabic{th@mbs@tmpA}}\endcsname}%
986 \expandafter\gdef\th@mbtmpdef{#3}%
987 \edef\th@mbtmpdef{\csname th@mbackgroundcolour\Alpha\Alph{\arabic{th@mbs@tmpA}}\endcsname}%
988 \expandafter\gdef\th@mbtmpdef{#4}%
989 \fi%
990 }%
991 \else%
992 \ifnum\th@mbonpagemax<\th@mbonpage%
993 \xdef\th@mbonpagemax{\th@mbonpage}%
994 \fi%
995 \fi%
996 \fi%
997 \ifx\th@mbcolumnnew\pagesLTS@two%
998 \gdef\th@mbcolumnnew{0}%
999 \fi%
1000 \gdef\th@mbtoprint{1}%
1001 }
1002

```

`\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).

```

1003 \newcommand{\stopthumb}{\gdef\th@mbprinting{0}}
1004

```

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

```

1005 \newcommand{\continuethumb}{\gdef\th@mbprinting{1}}
1006

```

`\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.

```
1007 \newcommand{\thumbcontents}[7]{%
1008   \advance\th@mbposy\th@mbheighty%
1009   \advance\th@mbposy\th@mbdistance%
1010   \ifdim\th@mbposy>\th@mbposybottom%
1011     \setlength{\th@mbposy}{\th@mbposytop}%
1012     \advance\th@mbposy\th@mbdistance%
1013   \fi%
1014   \def\th@mb@tmp@title{#1}%
1015   \def\th@mb@tmp@text{#2}%
1016   \def\th@mb@tmp@textcolour{#3}%
1017   \def\th@mb@tmp@backgroundcolour{#4}%
1018   \def\th@mb@tmp@page{#5}%
1019   \def\th@mb@tmp@label{#6}%
1020   \def\th@mb@tmp@column{#7}%
1021   \ifx\th@mb@tmp@column\pagesLTS@two%
1022     \def\th@mb@tmp@column{0}%
1023   \fi%
1024   \setlength{\th@mbwidthxtoc}{\paperwidth}%
1025   \advance\th@mbwidthxtoc-1in%
```

Depending on which side the thumb marks should be placed the according dimensions have to be adapted.

```
1026   \def\th@mbstest{r}%
1027   \ifx\th@mbstest\th@mb@sprintpage% r
1028     \advance\th@mbwidthxtoc-\oddsidemargin%
1029     \setlength{\@tempdimc}{1in}%
1030     \advance\@tempdimc+\oddsidemargin%
1031   \else% l
1032     \advance\th@mbwidthxtoc-\evensidemargin%
1033     \setlength{\@tempdimc}{\th@mb@shoffset}%
1034     \advance\@tempdimc-\hoffset
1035   \fi%
1036   \put(\@tempdimc,-\th@mbposy){%
1037     \def\th@mbstest{l}%
1038     \ifx\th@mbstest\th@mb@sprintpage% l
1039       \advance\th@mbwidthxtoc+\evensidemargin%
1040     \fi%
```

```
1041 \begin{picture}(0,0)%
```

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

```
1042 \def\th@mbstest{rule}%
1043 \ifx\thumbs@thumbblink\th@mbstest%
1044 \ifx\th@mb@tmp@column\pagesLTS@zero%
1045 {\color{\th@mb@tmp@backgroundcolour}\hyperref[\th@mb@tmp@label]{\rule{\th@mbwidthxtoc}{\th@mbheighty}}}%
1046 \else%
```

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

```
1047 {\color{\th@mb@tmp@backgroundcolour}\rule{\th@mbwidthxtoc}{\th@mbheighty}}%
1048 \fi%
1049 \else%
1050 {\color{\th@mb@tmp@backgroundcolour}\rule{\th@mbwidthxtoc}{\th@mbheighty}}%
1051 \fi%
1052 \end{picture}%
```

When `\th@mb@sprintpage` is 1, before the picture `\th@mbwidthxtoc` was changed, which must be reverted now.

```
1053 \ifx\th@mbstest\th@mb@sprintpage% 1
1054 \advance\th@mbwidthxtoc-\evensidemargin%
1055 \fi%
```

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.

```
1056 \ifx\th@mb@tmp@column\pagesLTS@zero%
1057 \setlength{\th@mbwidthxtoc}{\paperwidth}%
1058 \advance\th@mbwidthxtoc-1in%
1059 \advance\th@mbwidthxtoc-\hoffset%
1060 \ifx\th@mbstest\th@mb@sprintpage% 1
1061 \advance\th@mbwidthxtoc-\evensidemargin%
1062 \else%
1063 \advance\th@mbwidthxtoc-\oddsidemargin%
1064 \fi%
1065 \advance\th@mbwidthxtoc-\th@mbwidthx%
1066 \advance\th@mbwidthxtoc-20pt%
1067 \ifdim\th@mbwidthxtoc>\textwidth%
1068 \setlength{\th@mbwidthxtoc}{\textwidth}%
1069 \fi%
```

Depending on which side the thumb marks should be placed the according dimensions have to be adapted here, too.

```
1070 \ifx\th@mbstest\th@mb@sprintpage% 1
1071 \begin{picture}(0,0)(-6pt,-0.5\th@mbheighty+384930sp)%
1072 \bgroup%
1073 \setlength{\parindent}{0pt}%
1074 \makebox[\th@mbwidthx][l]{\color{\th@mb@tmp@textcolour}\th@mb@tmp@text}%
1075 \egroup%
```

```

1076     \end{picture}%
1077     \setlength{\@tempdimc}{-1in}%
1078     \advance\@tempdimc-\evensidemargin%
1079     \else% r
1080     \setlength{\@tempdimc}{0pt}%
1081     \fi%
1082     \begin{picture}(0,0)(\@tempdimc,-0.5\th@mbheighty+384930sp)%
1083     \bgroup%
1084     \setlength{\parindent}{0pt}%
1085     \vbox%
1086     {\hspace=\th@mbwidthxtoc {%
```

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

- `none` creates *none* hyperlink

```

1087     \def\th@mbstest{none}%
1088     \ifx\thumbs@thumblink\th@mbstest%
1089     {\color{\th@mb@tmp@textcolour}\noindent \th@mb@tmp@title%
1090     \leaders\box \ThumbsBox {\th@mbs@linefill \th@mb@tmp@page}%
1091     }%
1092     \else%
```

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

```

1093     \def\th@mbstest{title}%
1094     \ifx\thumbs@thumblink\th@mbstest%
1095     {\color{\th@mb@tmp@textcolour}\noindent%
1096     \hyperref[\th@mb@tmp@label]{\th@mb@tmp@title}%
1097     \leaders\box \ThumbsBox {\th@mbs@linefill \th@mb@tmp@page}%
1098     }%
1099     \else%
```

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

```

1100     \def\th@mbstest{page}%
1101     \ifx\thumbs@thumblink\th@mbstest%
1102     {\color{\th@mb@tmp@textcolour}\noindent%
1103     \th@mb@tmp@title%
1104     \leaders\box \ThumbsBox {\th@mbs@linefill \pageref{\th@mb@tmp@label}}}%
1105     }%
1106     \else%
```

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

```
1107             \def\th@mbstest{titleandpage}%
1108             \ifx\thumbs@thumblink\th@mbstest%
1109                 {\color{\th@mb@tmp@textcolour}\noindent%
1110                  \hyperref[\th@mb@tmp@label]{\th@mb@tmp@title}%
1111                  \leaders\box \ThumbsBox {\th@mb@linefill \pageref{\th@mb@tmp@label}}%
1112                 }%
1113             \else%
```

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

```
1114             \def\th@mbstest{line}%
1115             \ifx\thumbs@thumblink\th@mbstest%
1116                 {\color{\th@mb@tmp@textcolour}\noindent%
1117                  \hyperref[\th@mb@tmp@label]{\th@mb@tmp@title%
1118                  \leaders\box \ThumbsBox {\th@mb@linefill \th@mb@tmp@page}}%
1119                 }%
1120             \else%
```

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

```
1121             \def\th@mbstest{rule}%
1122             \ifx\thumbs@thumblink\th@mbstest%
1123                 {\color{\th@mb@tmp@textcolour}\noindent%
1124                  \th@mb@tmp@title%
1125                  \leaders\box \ThumbsBox {\th@mb@linefill \th@mb@tmp@page}}%
1126                 }%
1127             \else%
```

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

```
1128             \PackageError{thumbs}{\string\thumbs@thumblink\space invalid}{%
1129             \string\thumbs@thumblink\space has an invalid value,\MessageBreak%
1130             although it did not have an invalid value before,\MessageBreak%
1131             and the thumbs package did not change it.\MessageBreak%
1132             Therefore some other package (or the user)\MessageBreak%
1133             manipulated it.\MessageBreak%
1134             Now setting it to 'none' as last resort.\MessageBreak%
1135             }%
1136             \gdef\thumbs@thumblink{none}%
1137             {\color{\th@mb@tmp@textcolour}\noindent%
1138              \th@mb@tmp@title%
1139              \leaders\box \ThumbsBox {\th@mb@linefill \th@mb@tmp@page}}%
1140             }%
1141             \fi%
1142         \fi%
1143     \fi%
1144 \fi%
```

```

1145         \fi%
1146         \fi%
1147     }%
1148 }%
1149 \egroup%
1150 \end{picture}%

```

The thumb mark (with text) as set in the document outside of the thumb marks overview page(s) is also presented here, except when we are printing at the left side.

```

1151     \ifx\th@mbstest\th@mbprintpage% 1; relax
1152     \else%
1153         \begin{picture}(0,0)(\lin+\oddsidemargin-\th@mbxpos+20pt,-0.5\th@mbheighty+384930sp)%
1154             \bgroup%
1155                 \setlength{\parindent}{0pt}%
1156                 \makebox[\th@mbwidthx][r]{\color{\th@mb@tmp@textcolour}\th@mb@tmp@text}}%
1157             \egroup%
1158         \end{picture}%
1159     \fi%
1160 \fi%
1161 }%
1162 }
1163

```

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

```

1164 \newcommand{\th@mb@yA}{%
1165     \advance\th@mbposyA\th@mbheighty%
1166     \advance\th@mbposyA\th@mbdistance%
1167     \ifdim\th@mbposyA>\th@mbposybottom%
1168         \PackageWarning{thumbs}{You are not only using more than one thumb mark at one\MessageBreak%
1169             single page, but also thumb marks from different thumb\MessageBreak%
1170             columns. May I suggest the use of a \string\pagebreak\space or\MessageBreak%
1171             \string\newpage ?}%
1172     }%
1173     \setlength{\th@mbposyA}{\th@mbposytop}%
1174 \fi%
1175 }
1176

```


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

```
1177 \newcommand{\th@mbprint}[3]{%
1178   \put(\th@mbxpos,-\th@mbposyA){%
1179     \begin{picture}(0,0)%
1180       {\color{#3}\rule{\th@mbwidthx}{\th@mbheighty}}%
1181     \end{picture}%
1182     \begin{picture}(0,0)(0,-0.5\th@mbheighty+384930sp)%
1183       \bgroup%
1184         \setlength{\parindent}{0pt}%
1185         \ifodd\c@CurrentPage%
1186           \if@twoside%
1187             \makebox[\th@mbwidthx][l]{\color{#2}\hspace*{1pt}\space #1}}%
1188           \else%
1189             \makebox[\th@mbwidthx][r]{\color{#2}#1\space}}%
1190           \fi%
1191         \else%
1192           \makebox[\th@mbwidthx][r]{\color{#2}#1\space}}%
1193         \fi%
1194       \egroup%
1195     \end{picture}%
1196   }%
1197 }
1198
```

`\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.

```
1199 \AtBeginShipout{%
1200   \ifx\th@mbcolumnnew\pagesLTS@zero% ok
1201   \else%
1202     \PackageError{thumbs}{Missing \string\addthumb\space after \string\thumbnewcolumn }{%
1203       Command \string\thumbnewcolumn\space was used, but no new thumb placed with \string\addthumb\MessageBreak%
1204       (at least not at the same page). After \string\thumbnewcolumn\space please always use an\MessageBreak%
1205       \string\addthumb . Until the next \string\addthumb , there will be no thumb marks on the\MessageBreak%
1206       pages. Starting a new column of thumb marks and not putting a thumb mark into\MessageBreak%
1207       that column does not make sense. If you just want to get rid of column marks,\MessageBreak%
1208       do not abuse \string\thumbnewcolumn\space but use \string\stopthumb .\MessageBreak%
1209       (This error message will be repeated at all following pages,\MessageBreak%
1210       \space until \string\addthumb\space is used.)\MessageBreak%
1211     }%
1212   \fi%
1213   \setcounter{th@mbs@tmpA}{\value{CurrentPage}}%
1214   \addtocounter{th@mbs@tmpA}{-1}% because CurrentPage is already the one of the next page

```

Changing the paper size mid-document will probably cause some problems. But if it works, we try to cope with it. (When the change is performed without changing `\paperwidth`, we cannot detect it. Sorry.)

```

1215 \edef\th@mbstmpwidth{\the\paperwidth}%
1216 \ifdim\th@mbpaperwidth=\th@mbstmpwidth% OK
1217 \else%
1218   \PackageWarningNoLine{thumbs}{%
1219     Paperwidth has changed. Thumb mark positions become now adapted%
1220   }%
1221   \setlength{\th@mbposx}{\paperwidth}%
1222   \advance\th@mbposx-\th@mbwidthx%
1223   \ifthumbs@ignorehoffset%
1224     \advance\th@mbposx-\hoffset%
1225   \fi%
1226   \advance\th@mbposx+1pt%
1227   \xdef\th@mbpaperwidth{\the\paperwidth}%
1228 \fi%

```

Determining the correct `\th@mbxpos`:

```

1229 \def\th@mbxpos{\th@mbposx}%
1230 \ifodd\c@th@mbs@tmpA% \relax
1231 \else%
1232   \if@twoside%
1233     \ifthumbs@ignorehoffset%
1234       \def\th@mbxpos{-1pt-\hoffset}%
1235     \else%
1236       \def\th@mbxpos{-1pt}%
1237     \fi%
1238   \else \relax%
1239   \fi%
1240 \AtBeginShipoutUpperLeft{%
1241   \ifx\th@mbprinting\pagesLTS@one%
1242     \th@mbprint{\th@mbtextA}{\th@mbtextcolourA}{\th@mbbackgroundcolourA}%
1243     \setcounter{th@mbs@tmpA}{1}%
1244     \edef\th@mbonpagetest{\arabic{th@mbs@tmpA}}%
1245     \@whilenum\th@mbonpagetest<\th@mbonpage\do{%
1246       \addtocounter{th@mbs@tmpA}{1}%
1247       \edef\th@mbonpagetest{\arabic{th@mbs@tmpA}}%
1248       \th@mb@yA%
1249       \def\th@mbtmpdeftext{\csname th@mbtext\Alpha\Alph{\arabic{th@mbs@tmpA}}\endcsname}%
1250       \def\th@mbtmpdefcolour{\csname th@mbtextcolour\Alpha\Alph{\arabic{th@mbs@tmpA}}\endcsname}%
1251       \def\th@mbtmpdefbackgroundcolour{\csname th@mbbackgroundcolour\Alpha\Alph{\arabic{th@mbs@tmpA}}\endcsname}%
1252       \th@mbprint{\th@mbtmpdeftext}{\th@mbtmpdefcolour}{\th@mbtmpdefbackgroundcolour}%
1253     }%
1254   \fi%

```

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

```

1255 \setcounter{th@mbs@tmpA}{\th@mbonpage}%
1256 \ifnum\value{th@mbs@tmpA}<2% \relax
1257 \else%
1258 \gdef\th@mbtextA{\th@mbtext}%
1259 \gdef\th@mbtextcolourA{\th@mbtextcolour}%
1260 \gdef\th@mbackgroundcolourA{\th@mbackgroundcolour}%
1261 \gdef\th@mbposyA{\th@mbposy}%
1262 \fi%
1263 \gdef\th@mbonpage{0}%
1264 \gdef\th@mbtoprint{0}%
1265 }%
1266 }
1267

```

`\AfterLastShipout` `\AfterLastShipout` is executed after the last page has been shipped out. It is still possible to e.g. write to the aux file at this time.

```

1268 \AfterLastShipout{%
1269 \ifx\th@mbcolumnnew\pagesLTS@zero% ok
1270 \else
1271 \PackageWarningNoLine{thumbs}{%
1272 Still missing \string\addthumb\space after \string\thumbnewcolumn\space after\MessageBreak%
1273 last shipout: Command \string\thumbnewcolumn\space was used,\MessageBreak%
1274 but no new thumb placed with \string\addthumb\space anywhere in the\MessageBreak%
1275 rest of the document. Starting a new column of thumb\MessageBreak%
1276 marks and not putting a thumb mark into that column\MessageBreak%
1277 does not make sense. If you just want to get rid of\MessageBreak%
1278 thumb marks, do not abuse \string\thumbnewcolumn\space but use\MessageBreak%
1279 \string\stophthumb %
1280 }
1281 \fi

```

`\AfterLastShipout` the number of thumb marks per overview page, the total number of thumb marks, and the maximal thumb mark text width are determined and saved for the next \LaTeX run via the `.aux` file.

```

1282 \ifx\th@mbcolumn\pagesLTS@zero% if there is only one column of thumbs
1283 \xdef\th@umbsperpagecount{\th@mbs}
1284 \gdef\th@mbcolumn{1}
1285 \fi
1286 \ifx\th@umbsperpagecount\pagesLTS@zero
1287 \gdef\th@umbsperpagecount{\th@mbs}% \th@mbs was increased with each \addthumb
1288 \fi
1289 \ifdim\th@mbmaxwidth>\th@mbwidthx
1290 \ifthumbs@draft% \relax
1291 \else

```

```

1292 \def\th@mbstest{autoauto}
1293 \ifx\thumbs@width\th@mbstest%
1294 \AtEndAfterFileList{%
1295 \PackageWarningNoLine{thumbs}{%
1296 Rerun to get the thumb marks width right%
1297 }
1298 }
1299 \else
1300 \AtEndAfterFileList{%
1301 \edef\thumbsinfoa{\th@mbmaxwidth}
1302 \edef\thumbsinfob{\the\th@mbwidthx}
1303 \PackageWarningNoLine{thumbs}{%
1304 Thumb mark too small or its text too wide:\MessageBreak%
1305 The widest thumb mark text is \thumbsinfoa\space wide,\MessageBreak%
1306 but the thumb marks are only \space\thumbsinfob\space wide.\MessageBreak%
1307 Either shorten or scale down the text,\MessageBreak%
1308 or increase the thumb mark width,\MessageBreak%
1309 or use option width=autoauto%
1310 }
1311 }
1312 \fi
1313 \fi
1314 \fi
1315 \if@filesw
1316 \immediate\write\@auxout{\string\gdef\string\th@mbmaxwidtha{\th@mbmaxwidth}}
1317 \immediate\write\@auxout{\string\gdef\string\th@umbsperpage{\th@umbsperpagecount}}
1318 \immediate\write\@auxout{\string\gdef\string\th@mbsmax{\th@mbs}}
1319 \expandafter\newwrite\csname tf@tmb\endcsname

```

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

```

1320 \RerunFileCheck{\jobname.tmb}{%
1321 \immediate\closeout \csname tf@tmb\endcsname
1322 }{Warning: Rerun to get list of thumbs right!%
1323 }
1324 \immediate\openout \csname tf@tmb\endcsname = \jobname.tmb\relax
1325 %\else there is a problem, but the according warning message was already given earlier.
1326 \fi
1327 }
1328

```

`\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`.

```

1329 \newcommand{\addthumbsoverviewtocontents}[2]{%
1330 \gdef\th@mbs@toc@level{#1}
1331 \gdef\th@mbs@toc@text{#2}

```

```
1332 }
1333
```

`\clearotherdoublepage`

We need a command to clear a double page, thus that the following text is *left* instead of *right* as accomplished with the usual `\cleardoublepage`. For this we take the original `\cleardoublepage` code and revert the `\ifodd\c@page\else` (i.e. if even `\c@page`) condition.

```
1334 \newcommand{\clearotherdoublepage}{%
1335 \clearpage\if@twoside \ifodd\c@page% removed "\else" from \cleardoublepage
1336 \hbox{ }\newpage\if@twocolumn\hbox{ }\newpage\fi\fi\fi%
1337 }
1338
```

When the `hyperref` package is used, one might like to refer to the thumb overview page(s), therefore `\thumbstablabeling` command is defined (and used later). First a `\phantomsection` is added. With or without `hyperref` a label `TableOfThumbs1` (or `TableOfThumbs2` or...) is placed here. For compatibility with older versions of this package also the label `TableOfThumbs` is created. Equal to older versions it aims at the last used Table of Thumbs, but since version 1.0g **without** `Error: Label TableOfThumbs multiply defined` - thanks to `\overridelabel` from the `undolabl` package (which is automatically loaded by the `pageslts` package).

When `\addthumbsoverviewtocontents` was used, the entry is placed into the table of contents.

```
1339 \newcommand{\thumbstablabeling}{%
1340 \ifundefined{Hy@Warning}{ }\phantomsection}%
1341 \let\label\thumbsoriglabel%
1342 \ifx\thumbstable\pagesLTS@one%
1343 \label{TableOfThumbs}%
1344 \label{TableOfThumbs1}%
1345 \else%
1346 \overridelabel{TableOfThumbs}%
1347 \label{TableOfThumbs\thumbstable}%
1348 \fi%
1349 \let\label@gobble%
1350 \ifx\thumbstable@toc@level@empty%\relax
1351 \else \addcontentsline{toc}{\thumbstable@toc@level}{\thumbstable@toc@text}%
1352 \fi%
1353 }
1354
```

`\thumbsoverview`
`\thumbsoverviewback`
`\thumbsoverviewverso`
`\thumbsoverviewdouble`

For compatibility with documents created using older versions of this package `\thumbsoverview` did not get a second argument, but it is renamed to `\thumbsoverviewprint` and additional to `\thumbsoverview` new commands are introduced. It is of course also possible to use `\thumbsoverviewprint` with its two arguments directly, therefore its name does not include any `@` (saving the users the use of `\makeatother` and `\makeatletter`).

- `\thumbsoverview` prints the thumb marks at the right side and (in `twoside` mode) skips left sides (useful e.g. at the beginning of a document)
- `\thumbsoverviewback` prints the thumb marks at the left side and (in `twoside` mode) skips right sides (useful e.g. at the end of a document)

- `\thumboverviewverso` prints the thumb marks at the right side and (in `twoside` mode) repeats them at the next left side and so on (useful anywhere in the document and when one wants to prevent empty pages)
- `\thumboverviewdouble` prints the thumb marks at the left side and (in `twoside` mode) repeats them at the next right side and so on (useful anywhere in the document and when one wants to prevent empty pages)

The `\thumboverview...` commands are used to place the overview page(s) for the thumb marks. Their parameter is used to mark this page/these pages (e. g. in the page header). If these marks are not wished, `\thumboverview...{}` will generate empty marks in the page header(s). `\thumboverview...` can be used more than once (for example at the beginning and at the end of the document). The overviews have labels `TableOfThumbs1`, `TableOfThumbs2` and so on, which can be referred to with e. g. `\pageref{TableOfThumbs1}`. The reference `TableOfThumbs` (without number) aims at the last used Table of Thumbs (for compatibility with older versions of this package).

```

1355 \newcommand{\thumboverview}[1]{\thumboverviewprint{#1}{r}}
1356
1357 \newcommand{\thumboverviewback}[1]{\thumboverviewprint{#1}{l}}
1358
1359 \newcommand{\thumboverviewverso}[1]{\thumboverviewprint{#1}{v}}
1360
1361 \newcommand{\thumboverviewdouble}[1]{\thumboverviewprint{#1}{d}}
1362

```

`\thumboverviewprint` `\thumboverviewprint` works by calling the internal command `\th@mbsoverview` (see below), repeating this until all thumb marks have been processed.

```

1363 \newcommand{\thumboverviewprint}[2]{%

```

It would be possible to just `\edef\th@mbsoverviewprintpage{#2}`, but `\thumboverviewprint` might be called manually and without valid second argument.

```

1364 \edef\th@mbstest{#2}%
1365 \def\th@mbstestb{r}%
1366 \ifx\th@mbstest\th@mbstestb% r
1367 \gdef\th@mbsoverviewprintpage{r}%
1368 \else%
1369 \def\th@mbstestb{l}%
1370 \ifx\th@mbstest\th@mbstestb% l
1371 \gdef\th@mbsoverviewprintpage{l}%
1372 \else%
1373 \def\th@mbstestb{v}%
1374 \ifx\th@mbstest\th@mbstestb% v
1375 \gdef\th@mbsoverviewprintpage{v}%
1376 \else%
1377 \def\th@mbstestb{d}%
1378 \ifx\th@mbstest\th@mbstestb% d
1379 \gdef\th@mbsoverviewprintpage{d}%
1380 \else%

```

```

1381 \PackageError{thumbs}{%
1382   Invalid second parameter of \string\thumbsoverviewprint %
1383 }{The second argument of command \string\thumbsoverviewprint\space must be\MessageBreak%
1384   either 'r' or 'l' or 'v' or 'd', but is 'X2'.\MessageBreak%
1385   Now 'r' is chosen instead.\MessageBreak%
1386 }%
1387 \gdef\thumbsoverviewprintpage{r}%
1388 \fi%
1389 \fi%
1390 \fi%
1391 \fi%

```

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

```

1392 \def\thumbsoverviewprintpage{none}%
1393 \ifx\thumbs@thumblink\thumbsoverviewprintpage OK
1394 \else%
1395   \@ifundefined{Hy@Warning}{% hyperref not loaded
1396     \PackageError{thumbs}{Option thumblink != none, but hyperref not loaded}{%
1397       The option thumblink of the thumbs package was not set to 'none',\MessageBreak%
1398       but to some kind of hyperlinks, without using package hyperref.\MessageBreak%
1399       Either choose option 'thumblink=none', or load package hyperref.\MessageBreak%
1400       When pressing return, 'thumblink=none' will be set now.\MessageBreak%
1401     }%
1402     \gdef\thumbs@thumblink{none}%
1403   }{% hyperref loaded
1404     \def\thumbsoverviewprintpage{title}%
1405     \ifx\thumbs@thumblink\thumbsoverviewprintpage OK
1406     \else%
1407       \def\thumbsoverviewprintpage{page}%
1408       \ifx\thumbs@thumblink\thumbsoverviewprintpage OK
1409       \else%
1410         \def\thumbsoverviewprintpage{titleandpage}%
1411         \ifx\thumbs@thumblink\thumbsoverviewprintpage OK
1412         \else%
1413           \def\thumbsoverviewprintpage{line}%
1414           \ifx\thumbs@thumblink\thumbsoverviewprintpage OK
1415           \else%
1416             \def\thumbsoverviewprintpage{rule}%
1417             \ifx\thumbs@thumblink\thumbsoverviewprintpage OK
1418             \else%
1419               \PackageError{thumbs}{Option thumblink with invalid value}{%
1420                 Option thumblink has value '\thumbs@thumblink'.\MessageBreak%
1421                 Valid values are 'none', 'title', 'page',\MessageBreak%
1422                 'titleandpage', 'line', or 'rule'.\MessageBreak%
1423                 'rule' will be used now.\MessageBreak%
1424               }%
1425               \gdef\thumbs@thumblink{rule}%
1426             \fi%
1427           \fi%
1428         \fi%
1429       \fi%
1430     \fi%
1431   \fi%

```

```

1427     \fi%
1428     \fi%
1429     \fi%
1430     \fi%
1431   }%
1432 \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).

```

1433 \edef\th@mbprintingovertoc{\th@mbprinting}%
1434 \ifnum \th@mbsmax > \pagesLTS@zero%
1435   \if@twoside%
1436     \def\th@mbstest{r}%
1437     \ifx\th@mbstest\th@mbsprintpage%
1438       \cleardoublepage%
1439     \else%
1440       \def\th@mbstest{v}%
1441       \ifx\th@mbstest\th@mbsprintpage%
1442         \cleardoublepage%
1443       \else% l or d
1444         \clearotherdoublepage%
1445       \fi%
1446     \fi%
1447   \else \clearpage%
1448   \fi%
1449   \stopthumb%
1450   \markboth{\MakeUppercase #1 }{\MakeUppercase #1 }%
1451   \fi%
1452   \setlength{\th@mbsposytocy}{\th@mbposy}%
1453   \setlength{\th@mbposy}{\th@mbsposytocyy}%
1454   \ifx\th@mbstable\pagesLTS@zero%
1455     \newcounter{th@mblinea}%
1456     \newcounter{th@mblineb}%
1457     \newcounter{FileLine}%
1458     \newcounter{thumbsstop}%
1459   \fi%
1460   \setcounter{th@mblinea}{\th@mbstable}%
1461   \addtocounter{th@mblinea}{+1}%
1462   \xdef\th@mbstable{\arabic{th@mblinea}}%
1463   \setcounter{th@mblinea}{1}%
1464   \setcounter{th@mblineb}{\th@umbsperpage}%
1465   \setcounter{FileLine}{1}%
1466   \setcounter{thumbsstop}{1}%
1467   \addtocounter{thumbsstop}{\th@mbsmax}%

```


We do not want any labels or index or glossary entries confusing the table of thumb marks entries, but the commands must work outside of it:

```

1468 \let\thumbsoriglabel\label%
1469 \let\thumbsorigindex\index%
1470 \let\thumbsorigglossary\glossary%
1471 \let\label@gobble%
1472 \let\index@gobble%
1473 \let\glossary@gobble%

```

Some preparation in case of double printing the overview page(s):

```

1474 \def\th@mbstest{v}% r l r ...
1475 \ifx\th@mbstest\th@mbsprintpage%
1476   \def\th@mbsprintpage{1}% because it will be changed to r
1477   \def\th@mbdoublepage{1}%
1478 \else%
1479   \def\th@mbstest{d}% l r l ...
1480   \ifx\th@mbstest\th@mbsprintpage%
1481     \def\th@mbsprintpage{r}% because it will be changed to l
1482     \def\th@mbdoublepage{1}%
1483   \else%
1484     \def\th@mbdoublepage{0}%
1485   \fi%
1486 \fi%
1487 \def\th@mb@resetdoublepage{0}%
1488 \@whilenum\value{FileLine}<\value{thumbsstop}\do%

```

For double printing the overview page(s) we just change between printing left and right, and we need to reset the line number of the `\jobname.tmb` file which is read, because we need to read things twice.

```

1489 {\ifx\th@mbdoublepage\pagesLTS@one%
1490   \def\th@mbstest{r}%
1491   \ifx\th@mbsprintpage\th@mbstest%
1492     \def\th@mbsprintpage{1}%
1493   \else% \th@mbsprintpage is l
1494     \def\th@mbsprintpage{r}%
1495   \fi%
1496   \clearpage%
1497   \ifx\th@mb@resetdoublepage\pagesLTS@one%
1498     \setcounter{th@mblinea}{\theth@mblinea}%
1499     \setcounter{th@mblineb}{\theth@mblineb}%
1500     \def\th@mb@resetdoublepage{0}%
1501   \else%
1502     \edef\theth@mblinea{\arabic{th@mblinea}}%
1503     \edef\theth@mblineb{\arabic{th@mblineb}}%
1504     \def\th@mb@resetdoublepage{1}%
1505   \fi%
1506 \else%

```

```

1507 \if@twoside%
1508 \def\th@mbstest{r}%
1509 \ifx\th@mbstest\th@mbsprintpage%
1510 \cleardoublepage%
1511 \else% 1
1512 \clearotherdoublepage%
1513 \fi%
1514 \else \clearpage%
1515 \fi%
1516 \fi%

```

When the very first page of a thumb marks overview is generated, the label is set (with the `\th@mbstablabeled` command).

```

1517 \ifnum\value{FileLine}=1%
1518 \ifx\th@mbdoublepage\pagesLTS@one%
1519 \ifx\th@mb@resetdoublepage\pagesLTS@one%
1520 \th@mbstablabeled%
1521 \fi%
1522 \else
1523 \th@mbstablabeled%
1524 \fi%
1525 \fi%
1526 \null%
1527 \th@mbs@overview%
1528 \pagebreak%
1529 \ifthumbs@verbose%
1530 \message{THUMBS: Fileline: \arabic{FileLine}, a: \arabic{th@mblinea}, %
1531 b: \arabic{th@mblineb}, per page: \th@umbsperpage, max: \th@mbsmax.^^J}%
1532 \fi%

```

When double page mode is active and `\th@mb@resetdoublepage` is one, the last page of the thumbs mark overview must be repeated, but

`\@whilenum\value{FileLine}<\value{thumbsstop}\do` would prevent this, because `FileLine` is already too large and would only be reset *inside* the loop, but the loop would not be executed again.

```

1533 \ifx\th@mb@resetdoublepage\pagesLTS@one%
1534 \setcounter{FileLine}{\th@mblinea}%
1535 \fi%
1536 }%

```

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

```

1537 \setlength{\th@mbposy}{\th@mbsposytcy}%
1538 \ifx\th@mbprintingovertoc\pagesLTS@one%
1539 \continuethumb%
1540 \fi%

```

as well as the \label, \index, and \glossary commands:

```
1541 \let\label\thumbsoriglabel%
1542 \let\index\thumbsorigindex%
1543 \let\glossary\thumbsorigglossary%
```

and \th@ms@toc@level and \th@ms@toc@text need to be emptied, otherwise for each following Table of Thumb Marks the same entry in the table of contents would be added, if no new \addthumbsoverviewtocontents would be given. (But when no \addthumbsoverviewtocontents is given, it can be assumed that no thumbsoverview-entry shall be added to contents.)

```
1544 \addthumbsoverviewtocontents{}{}%
1545 }
1546
```

\th@ms@overview The internal command \th@ms@overview 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).

```
1547 \newcommand{\th@ms@overview}{%
1548 \ifthumbs@verbose%
1549 \message{^^JPackage thumbs Info: Processing line \arabic{th@mblinea} to \arabic{th@mblineb} of \jobname.tmb.}%
1550 \fi%
1551 \setcounter{FileLine}{1}%
1552 \AtBeginShipoutNext{%
1553 \AtBeginShipoutUpperLeftForeground{%
1554 \IfFileExists{\jobname.tmb}{% then
1555 \openin\@instreamthumb=\jobname.tmb %
1556 \@whilenum\value{FileLine}<\value{th@mblineb}\do%
1557 {\ifthumbs@verbose%
1558 \message{THUMBS: Processing \jobname.tmb line \arabic{FileLine}.}%
1559 \fi%
1560 \ifnum \value{FileLine}<\value{th@mblinea}%
1561 \read\@instreamthumb to \@unused%
1562 \ifthumbs@verbose%
1563 \message{Can be skipped.^^J}%
1564 \fi%
1565 % NIRVANA: ignore the line by not executing it,
1566 % i.e. not executing \@unused.
1567 % % \@unused
1568 \else%
1569 \ifnum \value{FileLine}=\value{th@mblinea}%
1570 \read\@instreamthumb to \@thumbsout% execute the code of this line
1571 \ifthumbs@verbose%
1572 \message{Executing \jobname.tmb line \arabic{FileLine}.^^J}%
1573 \fi%
1574 \@thumbsout%
1575 \else%
1576 \ifnum \value{FileLine}>\value{th@mblinea}%
1577 \read\@instreamthumb to \@thumbsout% execute the code of this line
1578 \ifthumbs@verbose%
1579 \message{Executing \jobname.tmb line \arabic{FileLine}.^^J}%
```

```

1580         \fi%
1581         \@thumbsout%
1582     \else% THIS SHOULD NEVER HAPPEN!
1583         \PackageError{thumbs}{Unexpected error! (Really!)}{%
1584             ! You are in trouble here.\MessageBreak%
1585             ! Type\space \space X \string<return\string>\space to quit.\MessageBreak%
1586             ! Delete temporary auxiliary files.\MessageBreak%
1587             ! (like \jobname.aux, \jobname.tmb, \jobname.out).\MessageBreak%
1588             ! and retry the compilation.\MessageBreak%
1589             ! If the error persists, cross your fingers.\MessageBreak%
1590             ! and try typing\space \space \string<return\string>\space to proceed.\MessageBreak%
1591             ! If that does not work,\MessageBreak%
1592             ! you might contact the maintainer of the thumbs package.\MessageBreak%
1593         }%
1594     \fi%
1595 \fi%
1596 \fi%
1597     \stepcounter{FileLine}%
1598 }%
1599 \ifnum \value{FileLine}=\value{th@mblineb}
1600     \ifthumbs@verbose%
1601         \message{THUMBS: Processing \jobname.tmb line \arabic{FileLine}.}%
1602     \fi%
1603     \read\@instreamthumb to \@thumbsout% Execute the code of that line.
1604     \ifthumbs@verbose%
1605         \message{Executing \jobname.tmb line \arabic{FileLine}.^^J}%
1606     \fi%
1607     \@thumbsout% Well, really execute it here.
1608     \stepcounter{FileLine}%
1609 \fi%
1610 \closein\@instreamthumb%

```

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

```

1611     \addtocounter{th@mblinea}{\th@umbsperpage}%
1612     \addtocounter{th@mblineb}{\th@umbsperpage}%
1613     \setcounter{th@mbs@tmpA}{\th@mbsmax}%
1614     \ifnum \value{th@mblineb}>\value{th@mbs@tmpA}
1615         \setcounter{th@mblineb}{\value{th@mbs@tmpA}}%
1616     \fi%
1617 }{% 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).

```

1618     \setcounter{FileLine}{\arabic{thumbsstop}}%
1619 \AtEndAfterFileList{%
1620     \PackageWarningNoLine{thumbs}{%
1621         File \jobname.tmb not found.\MessageBreak%
1622         Rerun to get thumbs overview page(s) right.\MessageBreak%

```

```

1623         }%
1624     }%
1625 }%
1626 }%
1627 }%
1628 }
1629

```

When we are in `draft` mode, the thumb marks are “de-coloured”, their width is reduced, and a warning is given.

```

1630 \let\thumborigaddthumb\addthumb%
1631
1632 \ifthumbs@draft
1633   \setlength{\thumbwidth}{2pt}
1634   \renewcommand{\addthumb}[4]{\thumborigaddthumb{#1}{#2}{black}{gray}}
1635   \PackageWarningNoLine{thumbs}{thumbs package in draft mode:\MessageBreak%
1636     Thumb mark width is set to 2pt,\MessageBreak%
1637     thumb mark text colour to black, and\MessageBreak%
1638     thumb mark background colour to gray.\MessageBreak%
1639     Use package option final to get the original values.\MessageBreak%
1640   }
1641 \fi
1642

```

When we are in `hidethumbs` mode, there are no thumb marks and therefore neither any thumb mark overview page. A warning is given.

```

1643 \ifthumbs@hidethumbs
1644   \renewcommand{\addthumb}[4]{\relax}
1645   \PackageWarningNoLine{thumbs}{thumbs package in hide mode:\MessageBreak%
1646     Thumb marks are hidden.\MessageBreak%
1647     Remove package option hide to get thumb marks.\MessageBreak%
1648   }
1649   \renewcommand{\thumbnewcolumn}{\relax}
1650 \fi
1651
1652 \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, 2011/08/08, v1.2a, [CTAN:macros/latex/contrib/pageslts/pagesLTS.dtx](#)
- package pagecolor, 2011/08/08, v1.0c, [CTAN:macros/latex/contrib/pagecolor/pagecolor.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.), this is additionally needed:

```
\usepackage[T1]{fontenc}
\usepackage{amsfonts}
\usepackage[math]{cellspace}
\usepackage{xcolor}
\pagecolor{white}
\newcommand{\QTO}[2]{#2}
```

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, 2011/08/22, v1.0i, [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

holtxdoc

alphalph

atbegshi

atveryend

infwarerr

kvoptions

picture

rerunfilecheck

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:

[CTAN:install/macros/latex/contrib/oberdiek.tds.zip](#).

It is probably best to download and use this, because the packages in there should be both recent and compatible.

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 is available on [CTAN](#):

[CTAN:macros/latex/contrib/thumbs/thumbs.dtx](#)

The source file.

[CTAN:macros/latex/contrib/thumbs/thumbs.pdf](#)

The documentation.

[CTAN:macros/latex/contrib/thumbs/thumbs-example.pdf](#)

The compiled example file, as it should look like.

[CTAN:macros/latex/contrib/thumbs/README](#)

The README file.

[CTAN:install/macros/latex/contrib/thumbs.tds.zip](#)

Everything in TDS compliant, compiled format,

which additionally contains

<code>thumbs.ins</code>	The installation file.
<code>thumbs.drv</code>	The driver to generate the documentation.
<code>thumbs.sty</code>	The <code>.style</code> file.
<code>thumbs-example.tex</code>	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):

<code>thumbs.sty</code>	→ <code>tex/latex/thumbs.sty</code>
<code>thumbs.pdf</code>	→ <code>doc/latex/thumbs.pdf</code>
<code>thumbs-example.tex</code>	→ <code>doc/latex/thumbs-example.tex</code>
<code>thumbs-example.pdf</code>	→ <code>doc/latex/thumbs-example.pdf</code>
<code>thumbs.dtx</code>	→ <code>source/latex/thumbs.dtx</code>

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 T_EX distribution (t_eT_EX, m_ikT_EX,...) relies on file name databases, you must refresh these. For example, t_eT_EX users run `texhash` or `mktextlsr`.

6.4 Some details for the interested

Unpacking with L^AT_EX. The `.dtx` chooses its action depending on the format:

plain T_EX: Run `docstrip` and extract the files.

L^AT_EX: Generate the documentation.

If you insist on using L^AT_EX for `docstrip` (really, `docstrip` does not need L^AT_EX), 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 pdfL^AT_EX:

```
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 T_EX. Thanks for bug reports go to VERONICA BRANDT.

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 (or renamed or moved), and the document was compiled again, and the `.aux` file was reused, then reading from the then empty `.tmb` file resulted in an endless loop. Fixed.
- Minor details.

[2011/05/20 v1.0c]

- 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@mbdistance,`
where
`\advance\th@mbheighty-\th@mbdistance`
`\advance\th@mbheighty-\th@mbdistance`
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 for the `thumbs` package, removed from its `\RequirePackage` entries.
- The `infwarerr` package is used for its `\@PackageInfoNoLine` command.
- The `warning` package is no longer used by the `thumbs` package, removed from its `\RequirePackage` entries. Instead, the `atveryend` package is used, because it is loaded anyway when the `hyperref` package is used.

- Minor details.

[2011/05/26 v1.0d]

- Bug fix: labels or index or glossary entries were gobbled for the thumb marks overview page, but gobbling leaked to the rest of the document; fixed.
- New option `silent`, complementary to old option `verbose`.
- New option `draft` (and complementary option `final`), which “de-coloures” the thumb marks and reduces their width to 2 pt.

[2011/06/02 v1.0e]

- Gobbling of labels or index or glossary entries improved.
- Dimension `\thumbsinfo` no longer needed.
- Internal command `\thumbs@info` no longer needed, removed.
- New value `autoauto` (not default!) for option `width`, setting the thumb marks width to fit the widest thumb mark text.
- When `width={autoauto}` is not used, a warning is issued, when the thumb marks width is smaller than the thumb mark text.
- Bug fix: Since version v1.0b as of 2011/05/18 the number of thumb marks at one single page was no longer limited to six, but the example still stated this. Fixed.
- Minor details.

[2011/06/08 v1.0f]

- Bug fix: `\thumb@titlelabel` should be defined `\empty` at the beginning of the package: fixed. (Bug reported by VERONICA BRANDT. Thanks!)
- Bug fix: `\thumbs@distance` versus `\thumb@distance`: There should be only two times `\thumbs@distance`, the value of option `distance`, otherwise it should be the length `\thumb@distance`: fixed. (Also this bug reported by VERONICA BRANDT. Thanks!)
- `\hoffset` and `\voffset` are now ignored by default, but can be regarded using the options `ignorehoffset=false` and `ignorevoffset=false`. (Pointed out again by VERONICA BRANDT. Thanks!)
- Added to documentation: The package takes the dimensions `\AtBeginDocument`, thus later the page dimensions should not be changed. Now explicitly stated this in the documentation. `\paperwidth` changes are probably possible.
- Documentation and example now give a lot more details.
- Changed diverse details.

[2011/06/24 v1.0g]

- Bug fix: When `hyperref` was *not* used, then some labels were not set at all - fixed.
- Bug fix: When more than one Table of Tumbs was created with the `\thumbsoverview` command, there were some `counter ... already defined-errors` - fixed.
- Bug fix: When more than one Table of Tumbs was created with the `\thumbsoverview` command, there was a `Label TableofTumbs multiply defined-error` and it was not possible to refer to any but the last Table of Tumbs. Fixed with labels `TableofTumbs1`, `TableofTumbs2`,... (`TableofTumbs` still aims at the last used Table of Thumbs for compatibility.)
- Bug fix: Sometimes the thumb marks were stoped one page too early before the Table of Thumbs - fixed.
- Some details changed.

[2011/08/08 v1.0h]

- Replaced `\global\edef` by `\xdef`.
- Now using the `pagecolor` package. Empty thumb marks now inherit their colour from the pages's background. Option `pagecolor` is therefore obsolete.
- The `pagesLTS` package has been replaced by the `pageslts` package.
- New kinds of thumb mark overview pages introduced additionally to `\thumbsoverview`: `\thumbsoverviewback`, `\thumbsoverviewverso`, and `\thumbsoverviewdouble`.
- New option `hidethumbs=true` to hide thumb marks (and their overview page(s)).
- Option `ignorehoffset` did not work for the thumb marks overview page(s) - neither `true` nor `false`; fixed.
- Changed a huge number of details.

[2011/08/22 v1.0i]

- Hot fix: \TeX 2011/06/27 has changed `\enddocument` and thus broken the `\AtVeryVeryEnd` command/hooks of `atveryend` package as of 2011/04/23, v1.7. Until it is fixed, `\AtEndAfterFileList` is used.

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.

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