

Prototype reimplementation of \LaTeX 2 ϵ 's role mapping

\LaTeX Project, initial implementation Ulrike Fischer

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1 Introduction

This file provides support for tag names and symbolic structure names.

At first, it creates `tagpdf-ns-latex-lab.def` which collects tag names from the \LaTeX namespace and their role mapping. The names and the roles are not necessarily the final ones!

Later settings of the same tag overwrite previous settings. The syntax of a line is a list of three strings ending with commas:

`latex-tag, PDF-tag, name space,`

The name space is normally `pdf2` with the exception of the following PDF-tags which are only in pdf namespace: `Art`, `BlockQuote`, `TOC`, `TOCI`, `Index`, `Private`, `Quote`, `Note`, `Reference`, `BibEntry`, `Code`.

At second it provides an interface to use symbolic structure names which can be used in the `tag` key of `\tagstructbegin`. The symbolic names are strings structured with slashes similar to the names of (tagging) sockets. The list of such names used by \LaTeX is below in the implementation section.

In PDF 2.0 there are namespaces, so theoretically it is possible to use the same tag name for different purposes and with different role mapping. But practically this is not an option as we build also a global `RoleMap` dictionary for compatibility with applications that are not PDF 2.0 aware, and this dictionary can only contain unique tag names. So we assume that tag names are used only once across all namespaces. Documents that want to use their own specialized tag names must take care not to clash with existing names, e.g., by using a specific prefix on all their tag names.

<code>\NewStructureName</code>	<code>\NewStructureName{<symbolic name>}</code>
--------------------------------	---

This declares a new symbolic structure name `<symbolic name>` which is initially defined as `NonStruct`. To assign it another role use `\AssignStructureRole` described below.

<code>\UseStructureName</code> ★	<code>\UseStructureName{<symbolic name>}</code>
----------------------------------	---

This uses the new symbolic structure name `<symbolic name>`, e.g.

`tagstructbegin{tag=\UseStructureName{sec/section}}` is the same as `tagstructbegin{tag=Sect}` assuming that `\NewStructureName{sec/section}` and `\AssignStructureRole{sec/section}{Sect}` has been used before.

```
\AssignStructureRole \AssignStructureRole{<symbolic name>}{<role>}
```

This assigns to the symbolic structure name *<symbolic name>* the role *<role>*. *<symbolic name>* must have been declared first with `\NewStructureName`. If *<role>* is a known role it is simply used. If it is unknown, it is declared first and rolemapped to the tag currently stored for *<name>*. So

```
\NewStructureName{sec/section}
% structure with tag 'NonStruct'
\tagstructbegin{tag=\UseStructureName{sec/section}}

\AssignStructureRole{sec/section}{Sect}
% structure with tag 'Sect'
\tagstructbegin{tag=\UseStructureName{sec/section}}

\AssignStructureRole{sec/section}{Abschnitt}
% structure with tag 'Abschnitt' rolemapped to 'Sect'
\tagstructbegin{tag=\UseStructureName{sec/section}}

\AssignStructureRole{sec/section}{Figure}
% structure with tag 'Figure'
\tagstructbegin{tag=\UseStructureName{sec/section}}
```

Assigning a symbolic structure name a role that is not suitable for the structure element can lead to invalid tagging and parent-child warnings!

```
1 <ns-latex-lab>
2 %% \ProvidesExplFile {tagpdf-ns-latex-lab.def} {2023-09-04} {0.8}
3 %% {latex} {https://www.latex-project.org/ns/lab/2022}{}
```

1.1 Role from tagpdf

The following tags are already set by tagpdf, so deleting here will not remove them.

```
4 title,      Title,      pdf2,
5 part,       Title,      pdf2,
```

Headings differ in article and book class. This here is for article:

```
6 section,    H1,         pdf2,
7 subsection, H2,         pdf2,
8 subsubsection, H3,      pdf2,
9 paragraph,  H4,         pdf2,
10 subparagraph, H5,      pdf2,
```

And this here is used in book:

```
11 %chapter,   H1,         pdf2,
12 %section,   H2,         pdf2,
13 %subsection, H3,        pdf2,
14 %subsubsection, H4,      pdf2,
15 %paragraph,  H5,        pdf2,
16 %subparagraph, H6,      pdf2,

17 list,       L,          pdf2,
18 itemize,     L,          pdf2,
19 enumerate,   L,          pdf2,
20 description, L,          pdf2,
```

```

21 quote,      BlockQuote, pdf,
22 quotation,  BlockQuote, pdf,
23 verbatim,   Code,      pdf, % overwritten by block
24 item,       LI,        pdf2,
25 itemlabel,  Lbl,       pdf2,
26 itembody,   LBody,     pdf2,
27 footnote,   FENote,    pdf2,
28 footnotemark, Lbl,     pdf2,
29 footnotelabel, Lbl,    pdf2,
30 text-unit,  Part,      pdf2,
31 text,       P,         pdf2,

```

1.2 From sec code

```

32 section-number, Span, pdf2,

```

1.3 From block code

```

33 theorem-like, Sect, pdf2,
34 verbatim,     Code, pdf,
35 codeline,     Sub,  pdf2,

```

1.4 From float code

```

36 float,      Aside, pdf2,
37 figures,     Sect, pdf2,
38 tables,     Sect, pdf2,
39  $\langle$ /ns-latex-lab $\rangle$ 
40  $\langle$ *package $\rangle$ 
41 \ProvidesExplPackage {latex-lab-testphase-names} {\ltxlabnamesdate} {\ltxlabnamesversion}
42 {Code related to the names of tags}
43  $\langle$ @@=tag $\rangle$ 

```

\AssignStructureRole

We redefine \AssignStructureRole to set up roles for tagging. The second argument needs expansion so that we do not store things like \UseStructureName{block/verbatim/codeline}} but its final value. Otherwise ...

```

44 \cs_set_protected:Npn\AssignStructureRole#1#2 {
45   \exp_args:Nne \__tag_AssignStructureRole {#1}{#2}
46 }
47 \cs_set_protected:Npn\__tag_AssignStructureRole#1#2
48 {
49   \prop_get:NnNF\g__tag_role_tags_NS_prop{#2}\l__tag_tmp_unused_tl
50   {\exp_args:Ne\tagpdfsetup{role/new-tag=#2/\UseStructureName{#1}}}
51   \tl_set:cn { l__tag_name_#1_tl }{#2}
52 }

```

(End of definition for \AssignStructureRole. This function is documented on page 2.)

```

53  $\langle$ /package $\rangle$ 

```

1.5 Symbolic names

These are the planned symbolic structure names. Every commented name is not decided and not used yet and can change in future.

fix implementa-
tion and docu

1.5.1 Paragraphs

```
54 <*package>
55 \NewStructureName{para/textblock}
56 \AssignStructureRole{para/textblock}{text}
57 \NewStructureName{para/semantic}
58 \AssignStructureRole{para/semantic}{text-unit}
59 </package>
```

1.5.2 Sectioning commands

```
60 <*package>
61 %-1=part, 0=chapter, 1=section etc
62 \NewStructureName{sec/-1}
63 \AssignStructureRole{sec/-1}{Part}
64 \NewStructureName{sec/-1/title}
65 \AssignStructureRole{sec/-1/title}{part}
66 \NewStructureName{sec/-1/titleline}
```

Sub does not work as part is rolemapped to Title so we use Span

```
67 \AssignStructureRole{sec/-1/titleline}{Span}
68 \NewStructureName{sec/-1/number}
69 \AssignStructureRole{sec/-1/number}{section-number}
70 \NewStructureName{sec/0}
71 \AssignStructureRole{sec/0}{Sect}
72 \NewStructureName{sec/0/title}
73 \AssignStructureRole{sec/0/title}{chapter}
74 \NewStructureName{sec/0/titleline}
75 \AssignStructureRole{sec/0/titleline}{Span}
76 \NewStructureName{sec/0/number}
77 \AssignStructureRole{sec/0/number}{section-number}
78 \NewStructureName{sec/1}
79 \AssignStructureRole{sec/1}{Sect}
80 \NewStructureName{sec/1/title}
81 \AssignStructureRole{sec/1/title}{section}
82 \NewStructureName{sec/1/number}
83 \AssignStructureRole{sec/1/number}{section-number}
84 \NewStructureName{sec/2}
85 \AssignStructureRole{sec/2}{Sect}
86 \NewStructureName{sec/2/title}
87 \AssignStructureRole{sec/2/title}{subsection}
88 \NewStructureName{sec/2/number}
89 \AssignStructureRole{sec/2/number}{section-number}
90 \NewStructureName{sec/3}
91 \AssignStructureRole{sec/3}{Sect}
92 \NewStructureName{sec/3/title}
93 \AssignStructureRole{sec/3/title}{subsubsection}
94 \NewStructureName{sec/3/number}
95 \AssignStructureRole{sec/3/number}{section-number}
96 \NewStructureName{sec/4}
97 \AssignStructureRole{sec/4}{Sect}
98 \NewStructureName{sec/4/title}
99 \AssignStructureRole{sec/4/title}{paragraph}
100 \NewStructureName{sec/4/number}
101 \AssignStructureRole{sec/4/number}{section-number}
```

```

102 \NewStructureName{sec/5}
103 \AssignStructureRole{sec/5}{Sect}
104 \NewStructureName{sec/5/title}
105 \AssignStructureRole{sec/5/title}{subparagraph}
106 \NewStructureName{sec/5/number}
107 \AssignStructureRole{sec/5/number}{section-number}

```

1.5.3 Table of contents and similar

```

108 %\NewStructureName{toc}
109 %\AssignStructureRole{toc}{TOC}
110 %\NewStructureName{toc/item}
111 %\AssignStructureRole{toc/item}{TOCI}
112 %\NewStructureName{toc/item/label}
113 %\AssignStructureRole{toc/item/label}{Lbl}
114 %\NewStructureName{toc/item/text}
115 %\AssignStructureRole{toc/item/text}{Reference}
116 %\NewStructureName{toc/item/page}
117 %\AssignStructureRole{toc/item/page}{Reference}

```

1.5.4 Title

The title code currently only actively sets the Title, the rest is through paragraph tagging.

```

118 %\NewStructureName{title/env}
119 %\AssignStructureRole{title/env}{Part} % e.g. around a titlepage
120 %\NewStructureName{title/text}
121 %\AssignStructureRole{title/text}{Title}

```

1.5.5 Lists and blocks

```

122 %\NewStructureName{block/inner}
123 %\AssignStructureRole{block/inner}{Div} %changeable
124 \NewStructureName{block/itemize}
125 \AssignStructureRole{block/itemize}{itemize}
126 \NewStructureName{block/description}
127 \AssignStructureRole{block/description}{description}
128 \NewStructureName{block/enumerate}
129 \AssignStructureRole{block/enumerate}{enumerate}
130 \NewStructureName{block/list}
131 \AssignStructureRole{block/list}{list}
132 \NewStructureName{block/list/item}
133 \AssignStructureRole{block/list/item}{item}
134 \NewStructureName{block/list/label}
135 \AssignStructureRole{block/list/label}{itemlabel}
136 \NewStructureName{block/list/body}
137 \AssignStructureRole{block/list/body}{itembody}

138 \NewStructureName{block/quote}
139 \AssignStructureRole{block/quote}{quote}

```

decide on tagging for verse

For now we map verse to quote which means it will become BlockQuote in tagging.

```

140 \NewStructureName{block/verse}
141 \AssignStructureRole{block/verse}{quote}

```

```

142 \NewStructureName{block/quotation}
143 \AssignStructureRole{block/quotation}{quotation}
144 %
145 \NewStructureName{block/verbatim}
146 \AssignStructureRole{block/verbatim}{verbatim}
147 \NewStructureName{block/verbatim/codeline}
148 \AssignStructureRole{block/verbatim/codeline}{codeline}
149 %\NewStructureName{block/verbatim/linenumber}
150 %\AssignStructureRole{block/verbatim/linenumber}{Lbl}
151 %
152 \NewStructureName{block/theorem-like}
153 \AssignStructureRole{block/theorem-like}{theorem-like}
154 \NewStructureName{block/theorem-like/caption}
155 \AssignStructureRole{block/theorem-like/caption}{Caption}
156 \NewStructureName{block/theorem-like/label}
157 \AssignStructureRole{block/theorem-like/label}{Lbl}

```

For now we map proof to theorem-like:

```

158 \NewStructureName{block/proof}
159 \AssignStructureRole{block/proof}{theorem-like}
160 %
161 %\NewStructureName{block/bib}
162 %\AssignStructureRole{block/bib}{L}
163 %\NewStructureName{block/bib/label}
164 %\AssignStructureRole{block/bib/label}{Lbl}
165 %\NewStructureName{block/bib/item}
166 %\AssignStructureRole{block/bib/item}{LI}
167 %\NewStructureName{block/bib/body}
168 %\AssignStructureRole{block/bib/body}{LBody}

```

1.5.6 References and Links

```

169 %\NewStructureName{ref}
170 %\AssignStructureRole{ref}{Reference}
171 %\NewStructureName{link}
172 %\AssignStructureRole{link}{Link}
173 %\NewStructureName{ref/cite}
174 %\AssignStructureRole{ref/cite}{Reference}

```

1.5.7 Tables

```

175 %\NewStructureName{tbl/table}
176 %\AssignStructureRole{tbl/table}{Table}
177 %\NewStructureName{tbl/table/row}
178 %\AssignStructureRole{tbl/table/row}{TR}
179 %\NewStructureName{tbl/table/cell}
180 %\AssignStructureRole{tbl/table/cell}{TD}
181 %\NewStructureName{tbl/table/pcell}
182 %\AssignStructureRole{tbl/table/pcell}{TD}
183 %\NewStructureName{tbl/table/hcell}
184 %\AssignStructureRole{tbl/table/hcell}{TH}

```

THead and TFoot are currently not used but are perhaps needed later

```

185 %\NewStructureName{tbl/table/head}

```

```

186 %\AssignStructureRole{tbl/table/head}{}
187 %\NewStructureName{tbl/table/foot}
188 %\AssignStructureRole{tbl/table/foot}{}

```

1.5.8 Floats

```

189 \NewStructureName{float/generic}
190 \AssignStructureRole{float/generic}{float}
191 \NewStructureName{float/figures}
192 \AssignStructureRole{float/figures}{figures}
193 \NewStructureName{float/tables}
194 \AssignStructureRole{float/tables}{tables}
195 \NewStructureName{float/figure}
196 \AssignStructureRole{float/figure}{float}
197 \NewStructureName{float/table}
198 \AssignStructureRole{float/table}{float}
199 \NewStructureName{float/figure/caption}
200 \AssignStructureRole{float/figure/caption}{Caption}
201 \NewStructureName{float/table/caption}
202 \AssignStructureRole{float/table/caption}{Caption}
203 \NewStructureName{float/figure/label}
204 \AssignStructureRole{float/figure/label}{Lbl}
205 \NewStructureName{float/table/label}
206 \AssignStructureRole{float/table/label}{Lbl}
207 \end{package}

```

1.5.9 Footnotes

```

208 %\NewStructureName{fnote/mark}
209 %\AssignStructureRole{fnote/mark}{footnotemark}
210 %\NewStructureName{fnote/note}
211 %\AssignStructureRole{fnote/note}{footnote}
212 %\NewStructureName{fnote/note/label}
213 %\AssignStructureRole{fnote/note/label}{footnotelabel}

```

1.5.10 Graphics

```

214 %\NewStructureName{graphic}
215 %\AssignStructureRole{graphic}{Figure}

```

1.5.11 Marginnotes

```

216 %\NewStructureName{marginnote}
217 %\AssignStructureRole{marginnote}{Aside}

```

1.5.12 Minipages and parboxes

```

218 \begin{package}
219 \NewStructureName{minipage}
220 \AssignStructureRole{minipage}{Div}
221 \NewStructureName{parbox}
222 \AssignStructureRole{parbox}{Div}
223 \end{package}

```

1.5.13 Text

```
224 %\NewStructureName{text/span}
225 %\AssignStructureRole{text/span}{Span}
226 %\NewStructureName{text/emph}
227 %\AssignStructureRole{text/emph}{Em}
```

1.5.14 Math

Math uses internally MathML and this should not be remapped so we need only names for the outer Formula tag and perhaps for a label:

```
228 %\NewStructureName{math/inline}
229 %\AssignStructureRole{math/inline}{Formula}
230 %\NewStructureName{math/display}
231 %\AssignStructureRole{math/display}{Formula}
232 %\NewStructureName{math/label}
233 %\AssignStructureRole{math/label}{Lb1}
```

1.6 Index and glossaries

Tagging not decided yet.