

# The documentmetadata-support code\*

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## 1 Introduction

The kernel command `\DocumentMetadata`, which can be used as the very first declaration in a document (i.e., before `\documentclass`), defines metadata and other configuration data that applies to the document as a whole (using a key/value syntax). It loads and activates the PDF management code from the `pdfmanagement` package and loads and activated code currently stored in latex-lab modules needed for various features developed as part of the multi-year “Tagged PDF” project. [1]

While the underlying functionality is still under development (e.g., further keys will be added over time and keys marked temporary may vanish again) the code for `\DocumentMetadata` is placed in a separate bundle, so that it is easier to update it without the need to build a full L<sup>A</sup>T<sub>E</sub>X release. Over time the functionality will move fully into the kernel.

As the loading of the PDF management forces the loading of the `l3backend` files, a backend that can’t be detected automatically like `dvipdfmx`, must be set in the first `\DocumentMetadata`.

From a process perspective `\DocumentMetadata` loads the `pdfmanagement` code and the latex-lab modules the first time it is called and then redefines itself to error if called more than once. In particular, this means that a document without a `\DocumentMetadata` declaration has no code available for extended management of PDF output and for tagging support.

## 2 The `\DocumentMetadata` command

---

<code>\DocumentMetadata</code>	<code>\DocumentMetadata{<i>key-value list</i>}</code>
--------------------------------	-------------------------------------------------------

The command should be used as the first command in a document, before `\documentclass`. It takes a key-value argument.

Starting with the release 2025-11-01 `\DocumentMetadata` will always load the new modules which changes L<sup>A</sup>T<sub>E</sub>X internals and add tagging support code.

For documents that want to load the PDF management but do not want the new tagging support code we provide a dedicated package. Such documents should replace

```
\DocumentMetadata{pdfversion=1.7,  
pdfstandard=a-3b}
```

---

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by

```
\RequirePackage{pdfmanagement}  
\SetKeys[document/metadata]{pdfversion=1.7,  
pdfstandard=a-3b}
```

Currently the modules loaded by `\DocumentMetadata` are the following. Details and documentation can be found in the various `latex-lab-⟨module⟩.pdf`:

**names** This module declares tag names for the structures.

**new-or-2** This module changes output routine sockets and adds support for the paragraph tagging. It also loads the new footnote code.

**block** This module reimplements lists and blocks environments and adds tagging support.

**context** This module provides context for template instances and code that needs to know where and when it is executed.

**sec,sec-template** These modules reimplement heading commands and make them tagging aware.

**toc** This module adapts commands related to the table of contents and similar list to make them tagging aware.

**minipage** This module adds tagging support to `minipage` and `\parbox`.

**graphic** This module enables tagging support for the `\includegraphics` command and the `picture` environment.

**float** This module adds tagging support to floats.

**bib** This module adds tagging support to citations and bibliographies.

**text** This module adds tagging support to small text commands like the `LATEX` logo, the `\emph` command and super and sub scripts.

**marginpar** This module adds tagging support to the `\marginpar` command.

**title** This module adds tagging support to the `\maketitle` command if a standard class is used. It also enhances the `\title` and `\author` commands to fill the XMP-metadata and set the window title. It is not compatible with packages and classes which redefine these commands too.

**table** This module provides tagging for `tabular`, `longtable` and similar table environments. Its use and restrictions are documented in `latex-lab-table.pdf`.

**math** This module adapts math for tagging.

**firstaid** This module contains small adjustments to external packages.

**tikz** This module adds support for the `tikz` package.

### 3 Keys and values

Currently the following keys are implemented for `\DocumentMetadata`:

**backend** Passes the backend name to `expl3`. This is needed only if the correct backend can't be automatically determined or if the workflow requires a special backend.

**pdfversion** Sets the PDF version explicitly, e.g., `pdfversion=1.7`. The key definition is in the `pdfmanagement` in `l3pdfmeta`.

**uncompress** (no value) Forces an uncompressed pdf — mainly for debugging purposes. Do not unnecessarily set it in normal production because it increases the size of the final PDF considerably.

**language** The language key should be used to set the main language of the document. The value is given in BCP 47 format, so, e.g, `language=de-DE` or `language=fr`. The value is stored in the document properties and can be retrieved (expandably) with `\GetDocumentProperty{document/language}`.

The key does *not* change the language setup of a document: it doesn't change the hyphenation patterns or the fix names or forces the loading of a language package. The expectation is that packages that need to know the document language, like `babel` or `polyglossia`, read the value and react accordingly. The BCP 47 value, e.g., can be parsed with `\text_bcp_parse:n` which produces 7 brace groups, see `interface3`. To extract, for example, the main language in the first group this code could be used:

```
\cs_generate_variant:Nn\text_bcp_parse:n{e}
\tl_set:N\mainlanguage
{\exp_last_unbraced:N\use_i:nnnnnnn
 {\text_bcp_parse:e{\GetDocumentProperty{document/language}}}}
```

The key updates the default `\BCPdata` command to use with the give language value. Note that this can lead to empty fields for region or script, if, e.g., only `language=de` instead of `language=de-Latn-AT` is used. This is only relevant if neither `babel` nor `polyglossia` are used as both packages overwrite the `\BCPdata` command with their own version.

The value of the `language` key is also used to set the `/Lang` key in the PDF. If a different (shorter) value is wanted there, an optional argument can be used: `language=[de]{de-DE}`, or the `lang` key can be used to overwrite the value: `language=de-DE,lang=de`.

**otherlanguage** The `other-languages` key can be used to declare more languages that are used in the document. The argument is a comma list of languages in BCP 47 format: `other-languages={fr,en-US,ar}`. The comma list is stored in the document properties and can be retrieved (expandably) with `\GetDocumentProperty{document/other-languages}`. As with the `language` key the expectation is, that language packages read the value and react accordingly.

**lang** Explicitly sets the `Lang` entry in the Catalog, e.g., `lang=de-DE`. If not given, the value of `\BCPdata{language}` or `\BCPdata{main.language}` at the beginning of the document is used (these commands are set by `babel`, the default value is `en-US`). The key is implicitly set if the `language` key is used.

**pdfstandard** Choice key to set the pdf standard. Currently A-1b, A-2a, A-2b, A-2u, A-3a, A-3b, A-3u, A-4, A-4E and A-4F are accepted as A-standard. values. The casing is irrelevant, a-1b works too. Note that using this key doesn't mean that the document actually follows the standard. L<sup>A</sup>T<sub>E</sub>X can neither ensure nor check all requirements of a standard, and not everything it can do theoretically has already been implemented. When setting an A-standard a color profile is included and the /OutputIntent is set and any javascript action in hyperref are suppressed. The u variants do not enforce unicode, but they will pass the information to hyperref. The a variants do *not* enforce (or even test) a tagged pdf yet.

Beside the A-standards it is also possible to use the values X-4, X-4p, X-5g, X-5n, X-5pg, X-6, X-6n, X-6p for a PDF/X and UA-1 and UA-2 for PDF/UA standard. UA-2 should only be used together with PDF 2.0. Currently these keys set *only* the relevant XMP-metadata. They do not validate or enforce special requirements (e.g., the UA standards do not automatically activate tagging).

pdfstandard can be used more than once to set overlapping standards, e.g: pdfstandard=A-2b,pdfstandard=X-4,pdfstandard=UA-1. It is also possible to pass a list like pdfstandard={UA-2,A-4F}.

If XMP-metadata are added (see the following key xmp) the necessary conformance markers for the standards are set.

Standards can require some minimal or maximal PDF version and the keys will try to adjust the PDF version as necessary. At the beginning of the document the versions are checked again a warning is issued if PDF version and standard conflicts.

The key is defined in the pdfmanagement in l3pdfmeta and more information can be found in the documentation.

**xmp** A boolean, if set to false no XMP metadata are added to the PDF. The initial value is true. Details are described in the documentation of l3pdfmeta.

**colorprofiles** This allows to load icc-colorprofiles. Details are described in the documentation of l3pdfmeta.

**tagging** This key allows to activate, deactivate or partially deactivate the tagging support. It accepts the three values **on**, **off** and **draft**. The tagpdf package and all standard modules of the tagging support are loaded regardless of the use and the value of the key!

- **tagging=on** activates tagging.
- **tagging=off** deactivates in the **class/before** hook the tagging commands, including the **\tagpdfsetup** command. It also deactivates the use of real space chars. This can be reactivated by using **tagging-setup={activate/spaces}**.
- **tagging=draft** leaves the tagging commands active but it deactivates the writing of the structure tree at the end of the compilation. This can save time when drafting a longer document but preserves, e.g., MC-content marker in the PDF stream and warnings and errors from **tagpdf** if the structure is faulty.

**tagging-setup** This key allows to configure the tagging. It accepts all keys that can also be used in **\tagpdfsetup**; see the **tagpdf** documentation. Additionally, it accepts two keys to extend the list of modules loaded:

**modules** This key previously allowed to change the list of modules. Starting with the release 2025-11-01 all standard modules are loaded always, so its only use is to load a non-standard module, e.g. `modules=verbatim-af` will load an experimental module changing the verbatim tagging.

**extra-modules** This key allows to load non-standard modules and starting with the release 2025-11-01 it is an alias of `modules`.

**check-tagging-status** This key is provided to help to identify packages that are potentially problematic when used with the tagging code. When used (with no value or with the value `listfiles`, it reads the file `latex-tagging-status.ltx` from the `latex-tagging-status` package and then writes at the end of the compilation a report about the compatibility of the class and the packages with the tagging project. It follows the classification done at <https://latex3.github.io/tagging-project/tagging-status>.

This is only a rough overview and a debugging aid, not a final report! Using packages that are classified as incompatible or partially incompatible does not mean that the tagging is necessarily broken. For example, `hyperref` is partially incompatible as the form fields are not properly tagged (this requires the use of the `l3pdffield` package), but in documents without form fields it is unproblematic. (In case of partially-compatible or incompatible packages check the table at <https://latex3.github.io/tagging-project/tagging-status> as it often contains an explanation what is not yet working.)

The package `latex-tagging-status` will be regularly updated to reflect changes in package. Erroneous messages should be reported at <https://github.com/latex3/tagging-project/issues>. It is also possible to create a pull request which updates the data.

**testphase** This key loaded in older L<sup>A</sup>T<sub>E</sub>X versions specific sets of modules from the testphase code. Starting with the release 2025-11-01 all standard modules are loaded automatically by `\DocumentMetadata` and with this change the key lost most of its original purpose. The values `phase-I`, `phase-II`, `phase=III` of the `testphase` key will no longer load different code variants but only activate tagging. The key can still be used to load additional experimental modules, it then works similar to the `modules` and `extra-modules` key and does not automatically activate tagging.

**debug** This key activates some debug options. It takes a list of key-values as value. Currently the following keys are known:

**para** with the default and only value `show`. It will activate the `debug/show=para` option of `tagpdf`;

**log** with the values as described in the documentation of `tagpdf`;

**uncompress** which does the same as `uncompress` as main key;

**pdfmanagement** a boolean which allows to deactivate the pdfmanagement (deprecated);

**firstaidoff** this accepts a comma lists of keywords and disables the patches related to them. More information can be found in the documentation of `pdfmanagement-firstaid`;

**xmp-export** this will export the XMP-metadata to a file `\jobname.xmpi`. With `debug={xmp-export=filename}` the file name can be changed; More information can be found in the documentation of `l3pdfmeta` of the `pdfmanagement-testphase` bundle;

**tagpdf** This loads the package `tagpdf-debug` which enhances various commands from `tagpdf` with additional debugging options. This can slow down the compilation!

**BBox** This helps to debug BBox values of graphics, see the documentation of `latex-lab-graphic`.

## References

- [1] Frank Mittelbach and Chris Rowley: *L<sup>A</sup>T<sub>E</sub>X Tagged PDF — A blueprint for a large project*. <https://latex-project.org/publications/indexbyyear/2020/>

## 4 The Implementation

```

1 <@@=pdfmanagement>
2 <*code>
3 \RequirePackage{pdfmanagement-init}
4 \ExplSyntaxOn\makeatletter

```

### 4.1 Variables

These variable definitions are currently also done in `ltdocinit`. They can be removed from there once `latex-lab` has been updated to provide them too.

```

\g__pdfmanagement_firstaidoff_clist A list to store the firstaid code which should be disabled
5 \clist_if_exist:NF \g__pdfmanagement_firstaidoff_clist
6 { \clist_new:N \g__pdfmanagement_firstaidoff_clist }
(End of definition for \g__pdfmanagement_firstaidoff_clist.)

```

```

\g__pdfmanagement_testphase_tl a tl to store the testphase loading code so that we can load them at the end of the
command.
7 \tl_if_exist:NF \g__pdfmanagement_testphase_tl
8 { \tl_new:N \g__pdfmanagement_testphase_tl }
(End of definition for \g__pdfmanagement_testphase_tl.)

```

### 4.2 Kernel changes with `\DocumentMetadata`

```

\@kernel@before@DocumentMetadata
9 \cs_new_protected:Npn \@kernel@before@DocumentMetadata
10 {
11   \ifx\Umathcode\@undefined
12     \fontencoding{T1}
13     \renewcommand\encodingdefault{T1}
14     \fi
15 }
(End of definition for \@kernel@before@DocumentMetadata. This function is documented on page ??.)

```

### 4.3 \DocumentMetadata

#### \DocumentMetadata

\DocumentMetadata should not be used after \documentclass so we error in this case. It can be used more than once but follow-up calls should not do the initialization code.

```

16 \cs_set_protected:Npn \DocumentMetadata #1
17 {
18   \cs_if_eq:NNTF \documentclass \@twoclasseserror
19   { \msg_error:nn { meta } { after-class } }
20   {

```

Load general format changes

```

21   \@kernel@before@DocumentMetadata

```

The wanted backend must be detected first, we read the init key and then force the loading of the backend. The backend can contain management commands, so the boolean should be set to true first.

```

22   \bool_gset_true:N \g__pdfmanagement_active_bool
23   \keys_set_groups:nnn { document / metadata } {init}{ #1 }
24   %if no backend has been loaded force it now:
25   \str_if_exist:NF \c_sys_backend_str
26   {
27     \sys_load_backend:n {}
28   }

```

Now we load the extra backend code:

```

29   \ExplSyntaxOn\makeatletter
30   \file_input:n {l3backend-testphase-\c_sys_backend_str.def}
31   \ExplSyntaxOff\makeatother
32   \pdf_version_gset:n { 2.0 }

```

tagpdf currently requires that the pdf version is set first.

```

33   \keys_set_groups:nnn { document / metadata } {pdf}{ #1 }

```

Load the latex-lab modules:

```

34   \RequirePackage{latex-lab-testphase-latest}
35   \AddToDocumentProperties [document]{tagging}{inactive}
36   \AddToDocumentProperties [document]{tagging/para}{inactive}

```

Process the non-init keys.

```

37   \keys_set_exclude_groups:nnn { document / metadata } { init,pdf } { #1 }

```

Finally we set up the language default. If the language key hasn't be set yet, we set it directly either to the value of the lang key or to en-US.

```

38   \tl_if_empty:eTF{\GetDocumentProperty{document/language}}
39   {
40     \tl_set:N\l__pdfmanagement_tmpa_tl{\GetDocumentProperty{document/lang}}
41     \tl_if_empty:NNTF\l__pdfmanagement_tmpa_tl
42     {\AddToDocumentProperties [document]{language}{en-Latn-US}}
43     {
44       \keys_set:ne{document/metadata}{language=\l__pdfmanagement_tmpa_tl}
45       \__pdfmanagement_update_BCPdata:
46     }

```

```

47     }
48     {
49         \__pdfmanagement_update_BCPdata:
50     }

```

At last we set up the lang default. This is done after the begindocument hook so that it can pick up settings from babel. If the Catalog dictionary already contains a lang value we do nothing, otherwise we use the value stored in \BCPdata, either the main language (if its exists) or the fall back language. Note: if babel is loaded without a language this gives the language und.

```

51     \g@addto@macro\@kernel@after@begindocument
52     {
53         \pdfdict_get:nnN {g__pdf_Core/Catalog}{Lang}\l__pdfmanagement_tmpa_tl
54         \quark_if_no_value:NT\l__pdfmanagement_tmpa_tl
55         {
56             \tl_if_empty:eTF { \BCPdata{main.language} }
57             { \tl_set:Ne \l__pdfmanagement_tmpb_tl { \BCPdata{language} } }
58             { \tl_set:Ne \l__pdfmanagement_tmpb_tl { \BCPdata{main.language} } }
59             \exp_last_unbraced:Ne
60             \AddToDocumentProperties{[document]{lang}{\l__pdfmanagement_tmpb_tl}}
61             \pdfmanagement_add:nne {Catalog} {Lang}{(\l__pdfmanagement_tmpb_tl)}
62         }
63     }

```

\pdfmanagement\_add:nnn has collected values in this hook.

```

64     \hook_use_once:n {pdfmanagement/add}

```

Now we redefine \DocumentMetadata so that it errors on future calls

```

65     \cs_set_protected:Npn \DocumentMetadata ##1
66     {
67         \@latex@error
68         {Two~\noexpand\DocumentMetadata~declarations}%
69         {The~document~may~use~only~one~\noexpand\DocumentMetadata~declaration.}
70     }

```

Load more modules, the testphase code and the firstaid code.

```

71     \g__pdfmanagement_testphase_tl
72     \RequirePackage{pdfmanagement-firstaid}
73 }
74 }

```

*(End of definition for \DocumentMetadata. This function is documented on page 1.)*

## 4.4 Tagging status report

Hide our own files

```

75 \clist_map_inline:nn
76 {
77     pdfmanagement-init.sty,
78     color-ltx.sty,
79     xcolor-patches-tmp-ltx.sty,
80     tagpdf-base.sty,
81     latex-lab-testphase-latest.sty,
82     tagpdf.sty,

```



```

83 tagpdf-mc-code-generic.sty,
84 tagpdf-mc-code-lua.sty,
85 luamml-patches-kernel.sty,
86 luamml-patches-amsmath.sty,
87 latex-lab-enumitem.sty,
88 latex-lab-kernel-changes.sty,
89 latex-lab-testphase-names.sty,
90 latex-lab-testphase-new-or-2.sty,
91 latex-lab-testphase-block.sty,
92 latex-lab-testphase-context.sty,
93 latex-lab-testphase-sec.sty,
94 latex-lab-testphase-sec-template.sty,
95 latex-lab-testphase-toc.sty,
96 latex-lab-testphase-minipage.sty,
97 latex-lab-testphase-graphic.sty,
98 latex-lab-testphase-float.sty,
99 latex-lab-testphase-bib.sty,
100 latex-lab-testphase-text.sty,
101 latex-lab-testphase-marginpar.sty,
102 latex-lab-testphase-title.sty,
103 latex-lab-testphase-table.sty,
104 latex-lab-testphase-math.sty,
105 latex-lab-testphase-firstaid.sty,
106 latex-lab-testphase-tikz.sty,
107 pdfmanagement-firstaid.sty,
108 }
109 {\expandafter\chardef\csname t@status@#1\endcsname8\relax }

110 \tl_new:c {l__tag_status_0_tl}
111 \tl_new:c {l__tag_status_1_tl}
112 \tl_new:c {l__tag_status_2_tl}
113 \tl_new:c {l__tag_status_3_tl}
114 \tl_new:c {l__tag_status_4_tl}
115 \tl_new:c {l__tag_status_-1_tl}
116 \cs_new_protected:Npn\__tag_status_sort:
117 {
118   \clist_map_inline:Nn\g__tag_status_filelist_tl
119   {
120     \filename@parse{##1}
121     \cs_if_exist:cTF { t@status@##1 }
122     {
123       \str_if_eq:onF{\filename@ext}{cls}
124       {
125         \tl_put_right:cn
126         {l__tag_status_\int_use:c { t@status@##1 }_tl}
127         {~~##1\iow_newline:}
128       }
129     }
130     {
131       \str_if_eq:onT{\filename@ext}{sty}
132       {
133         \tl_put_right:cn
134         {l__tag_status_-1_tl}
135         {~~##1\iow_newline:}
136       }
137     }
138   }

```

```

137     }
138   }
139 }
140 \cs_new_protected:Npn \__tag_status_type:nn #1 #2
141 % #1 number, -1 for not listed, #2 title
142 {
143   \iow_term:n{~~#2}
144   \iow_term:n{~-----}
145   \tl_if_empty:cTF{l__tag_status_#1_tl}
146   {
147     \iow_term:e{~NONE\iow_newline:}
148   }
149   {
150     \iow_term:e{\tl_use:c{l__tag_status_#1_tl}}
151   }
152 }
153 \cs_new_protected:Npn \__tag_status_log:
154 {
155   \file_if_exist_input:n {latex-tagging-status.ltx}
156   \AddToHookNext{class/before}
157   {
158     \tl_const:Ne \c__tag_current_class_tl{\currname.\@currentx}
159     \tl_const:Ne \c__tag_status_class_tl
160     {
161       \cs_if_exist:cTF { t@status@\currname.\@currentx }
162       {
163         \int_case:nn { \int_use:c { t@status@\currname.\@currentx } }
164         {
165           {0}{unknown}
166           {1}{unsupported}
167           {2}{currently~incompatible}
168           {3}{partially~compatible}
169           {4}{compatible}
170         }
171       }
172       { not~in~the~status~list}
173     }
174   }
175   \AddToHook{begindocument}{\tl_gset_eq:NN \g__tag_status_filelist_tl\@filelist}
176   \AddToHook{enddocument/info}
177   {
178     \iow_term:n{}
179     \iow_term:n
180     {=====}
181     \iow_term:n{~~Status~report~of~the~tagging~support}
182     \iow_term:n{=====}
183     \iow_term:n{~~Details~at~https://latex3.github.io/tagging-project/tagging-
status}
184     \iow_term:n{~~Report~erroneous~entries~at~https://github.com/latex3/tagging-
project}
185     \iow_term:n{}
186     \iow_term:n{~~A.~CLASS}
187     \iow_term:n{~~*****}
188     \iow_term:n{}

```

```

189 \iow_term:e{~~\c__tag_current_class_tl\c_space_tl is~\c__tag_status_class_tl}
190 \iow_term:n{}
191 \iow_term:n{~~B.~PACKAGES,~LIBRARIES,~etc}
192 \iow_term:n{~~*****}
193 \iow_term:n{}
194 \__tag_status_sort:
195 \__tag_status_type:nn{1}{1.~Unsupported}
196 \__tag_status_type:nn{2}{2.~Currently~incompatible}
197 \__tag_status_type:nn{3}{3.~Partially~compatible}
198 \__tag_status_type:nn{4}{4.~Compatible}
199 \__tag_status_type:nn{0}{5.~Unknown}
200 \__tag_status_type:nn{-1}{6.~Unclassified~files~with~extension~.sty}
201 \iow_term:n{=====}
202 \iow_term:n{~~End~of~status~report}
203 \iow_term:n{=====}
204 }
205 }

```

## 4.5 \DocumentMetadata keys

\\_pdfmanagement\_update\_BCPdata:n A helper command for the language key. This command updates the \BCPdata command.

```

206 \cs_generate_variant:Nn \text_bcp_parse:n {e}
207 \cs_new_protected:Npn \_pdfmanagement_update_BCPdata:
208 {
209   \tl_set:Nc \l__pdfmanagement_tmpa_tl { \text_bcp_parse:e{\GetDocumentProperty{document/language}}
210   \use:e
211   {
212     \exp_not:N\renewcommand*\exp_not:N\BCPdata[1]
213     {
214       \exp_not:N \str_case:nn {##1}
215       {
216         { language } %was en
217         { \exp_last_unbraced:No\use_i:nnnnnnn { \l__pdfmanagement_tmpa_tl} }
218         { region } %was US
219         { \exp_last_unbraced:No\use_iv:nnnnnnn { \l__pdfmanagement_tmpa_tl} }
220         { script } %was Latn
221         { \exp_last_unbraced:No\use_iii:nnnnnnn { \l__pdfmanagement_tmpa_tl} }
222         { tag } %was en-US
223         { \exp_last_unbraced:No\use_i:nnnnnnn { \l__pdfmanagement_tmpa_tl}-
224           \exp_last_unbraced:No\use_iv:nnnnnnn { \l__pdfmanagement_tmpa_tl}
225         }
226       }
227     }
228   }
229 }

```

(End of definition for \\_pdfmanagement\_update\_BCPdata:n.)

\\_pdfmanagement\_language\_set:n Command to handle the optional argument of the language key.

\\_pdfmanagement\_language\_set\_aux:wn

```

230 \cs_new_protected:Npn \_pdfmanagement_language_set:n #1
231 {
232   \tl_if_head_eq_charcode:nNTF {#1}[ %]
233   {
234     \_pdfmanagement_language_set_aux:wn #1

```

```

235     }
236     {
237         \AddToDocumentProperties[document]{language}{#1}
238         \keys_set:ne{document/metadata}{lang={#1}}
239     }
240 }
241
242 \cs_new_protected:Npn \__pdfmanagement_language_set_aux:wn [#1] #2
243 {
244     \AddToDocumentProperties[document]{language}{#2}
245     \keys_set:ne{document/metadata}{lang={#1}}
246 }

```

(End of definition for \\_\_pdfmanagement\_language\_set:n and \\_\_pdfmanagement\_language\_set\_aux:wn.)

The key definition:

```

247 \keys_define:nn { document / metadata }
248 {
249     language .code:n =
250     {
251         \__pdfmanagement_language_set:n {#1}
252     },
253     other-languages.code:n = {\AddToDocumentProperties [document]{other-languages}{#1}},
254 }
255
256 \keys_define:nn { document / metadata }
257 {
258     backend .choices:nn =
259     { dvipdfmx , dvips , dvisvgm , luatex , pdftex , pdfmode , xdvipdfmx , xetex }
260     {
261         \sys_load_backend:n {#1}
262     },
263     backend .groups:n = { init } ,
264 }
265 \keys_define:nn { document / metadata }
266 {
267     ,check-tagging-status .choice:
268     ,check-tagging-status / off .code:n = {}
269     ,check-tagging-status / listfiles .code:n =
270     {
271         \__tag_status_log:
272     }
273     ,check-tagging-status .default:n = {listfiles}
274 }
275 \keys_define:nn { document / metadata }
276 {
277     ,pdfversion .groups:n = { pdf }
278     ,pdfstandard .groups:n = { pdf }
279     ,lang .code:n =
280     {
281         \pdfmanagement_add:nnn {Catalog} {Lang}{(#1)}
282         \AddToDocumentProperties[document]{lang}{#1}
283     }
284 }

```

As the latest set of modules is loaded by default, many testphase keys only activate tagging.

```

283 ,testphase .multichoices:nn =
284 {latest,tagpdf,phase-I,phase-II,phase-III}
285 {
286   \keys_set:nn
287     {document / metadata}
288     {tagging=on}
289 }

```

The following modules are all always loaded, therefore they can be ignored when used in a testphase key:

```

290 ,testphase .multichoices:nn =
291 {math,new-or,sec,sec-template,toc,graphic,block,minipage,float,
292  bib,context,text,firstaid,table,title,marginpar,tikz}
293 {}
294 ,testphase / unknown .code:n =
295 {
296   \tl_gput_right:Nn\g__pdfmanagement_testphase_tl
297   {
298     \tl_if_empty:eT{\GetDocumentProperties{document/testphase/#1}}
299     {
300       \AddToDocumentProperties [document]{testphase/#1}{loaded}
301       \file_if_exist_input:nF {#1-latex-lab-testphase.ltx}
302       {
303         \msg_warning:nnn{meta}{latex-lab-pkg-missing}{#1}
304         \AddToDocumentProperties [document]{testphase/#1}{missing}
305       }
306     }
307   }
308 }
309 }

```

Activating and deactivating tagging after tagpdf has been loaded requires a redefinition of various commands. We store the needed settings in auxiliaries that we can redefine if tagging should be used.

```

\__tag_document_set_tagging_off:
\__tag_document_set_tagging_on:
\__tag_document_set_tagging:
310 \cs_new_protected:Npn \__tag_document_set_tagging_off:
311 {

```

Avoid warning from non-existing hook label. This can be removed after the next tagpdf update (2025-10-13).

```

312 \sys_if_engine luatex:F
313 { \AddToHook{shipout/firstpage}[tagpdf/space]{} }
314 \tagpdfsetup{activate/mc=false,activate/tree=false,
315   activate/struct=false,activate/socket=false,
316   activate/spaces=false,
317   para/tagging=false,math/setup=}
318 \AddToDocumentProperties [document]{tagging}{inactive}
319 \AddToDocumentProperties [document]{tagging/para}{inactive}
320 \AddToDocumentProperties [document]{tagging/interwordspace}{inactive}

```

We must avoid that a command like `\LaTeX` which contains a `\ResumeTagging` command restarts tagging, so we start a global suspend. Perhaps the commands should even be set to noop.

```
321 \tag_suspend:n {global}
```

We disable the setup command, as various keys assume that the tagging structure is there, see tagging-project issue #994.

```
322 \cs_set_protected:Npn\tagpdfsetup##1{}
```

perhaps, need to test:

```
323 %\cs_set_eq:NN\tag_suspend:n\use_none:n
324 %\cs_set_eq:NN\tag_resume:n \use_none:n
325 }
326 \cs_new_protected:Npn \__tag_document_set_tagging_on:
327 {
328   \tagpdfsetup{activate,para/tagging,activate/spaces}
329   \AddToDocumentProperties [document]{tagging}{active}
330   \AddToDocumentProperties [document]{tagging/para}{active}
331   \AddToDocumentProperties [document]{tagging/interwordspace}{active}
332 }
```

By default tagging is off.

```
333 \cs_new_eq:NN \__tag_document_set_tagging:\__tag_document_set_tagging_off:
334 \AddToHookNext{class/before}{\__tag_document_set_tagging:}
```

(End of definition for `\__tag_document_set_tagging_off:`, `\__tag_document_set_tagging_on:`, and `\__tag_document_set_tagging:`.)

```
335 \keys_define:nn { document / metadata }
336 {
337   ,tagging .choice:,
338   ,tagging / on .code:n =
339   {
340     \cs_set_eq:NN \__tag_document_set_tagging:\__tag_document_set_tagging_on:
341   }
342   ,tagging / off .code:n =
343   {
344     \cs_set_eq:NN \__tag_document_set_tagging:\__tag_document_set_tagging_off:
345   }
346   ,tagging / draft .code:n =
347   {
348     \keys_set:nn { document / metadata }{ tagging=on }
349     \AddToHook{shipout/lastpage}[tagging-setup]{\tagpdfsetup{activate/tree=false}}
350     \DeclareHookRule{shipout/lastpage}{tagging-setup}{before}{tagpdf}
351   }
352   ,tagging-setup .code:n =
353   {
354     \keys_set:nn { document / metadata }{ tagging=on }
355     \tl_gclear:N\g__pdfmanagement_testphase_tl
356     \keys_set_groups:nnn{\__tag/setup}{load}{#1}
357     \AddToHook{class/before}
358     {\keys_set_exclude_groups:nnn {\__tag/setup}{load}{#1}}
359   }
360   ,debug .code:n =
361   {
```

```

362     \keys_set:nn { document / metadata / debug } {#1}
363   }
364 ,debug / para .code:n =
365   {
366     \AddToHook
367     {
368       package/tagpdf/after
369     }
370     {
371       \tagpdfsetup{debug/show=para}
372     }
373   }
374 ,debug / log .code:n =
375   {
376     \AddToHook
377     {
378       package/tagpdf/after
379     }
380     {
381       \tagpdfsetup{debug/log=#1}
382     }
383   }
384 ,debug / tagpdf .code:n =
385   {
386     \AddToHook
387     {
388       package/tagpdf/after
389     }
390     {
391       \RequirePackage{tagpdf-debug}
392     }
393   }
394 ,debug / uncompress .code:n =
395   {
396     \pdf_uncompress:
397   }
398 ,debug / pdfmanagement .bool_gset:N = \g__pdfmanagement_active_bool
399 ,debug / firstaidoff .clist_gset:N = \g__pdfmanagement_firstaidoff_clist
400 ,debug / BBox .code:n =
401   {
402     \AddToHook{package/latex-lab-testphase-graphic/after}
403     { \bool_set_true:N \l__tag_graphic_debug_bool}
404   }
405 }
406 \keys_define:nn{__tag/setup}
407 {
408   ,modules .code:n =
409   {
410     \keys_set:nn { document / metadata }{testphase={#1}}
411   }
412 ,modules .groups:n = { load }
413 ,extra-modules .code:n =
414   {
415     \keys_set:nn { document / metadata }{testphase={#1}}

```

```

416     }
417     ,extra-modules .groups:n = { load }
418 }

419 %Ufi is meta the right module name here?
420 \prop_gput:Nnn \g_msg_module_type_prop { meta } { LaTeX }
421 \prop_gput:Nnn \g_msg_module_name_prop { meta } { DocumentMetadata }
422
423 \msg_new:nnn { meta } { after-class }
424 {
425     \token_to_str:N \DocumentMetadata \c_space_tl
426     should-be-used-only-before-\token_to_str:N\documentclass
427 }
428 \msg_new:nnn { meta } { latex-lab-pkg-missing }
429 {
430     LaTeX-lab-package~'#1'~not-found.
431 }

432 \ExplSyntaxOff\makeatother

433 </code>

```

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