

New L^AT_EX Style for FAO Yearbook *

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Abstract

This package provides class for typesetting FAO Yearbook. This is a refactoring of the `faoyeabook` package

1 Introduction

The package `faoyearbook` [1] was written in 2011 for FAO Statistical Yearbook.

The package `faosyb` is a refactoring of this package. We use the lessons learned and incorporate new design requirements. We use some (actually plenty) code from the previous version, but since we do not have to be compatibility, we can correct some unfortunate decisions.

2 User Guide

The installation of the class follows the usual practice [2] for L^AT_EX packages:

1. Run `latex` on `faosyb.ins`. This will produce the L^AT_EX class `faosyb.cls`.
2. Put the file `faosyb.cls` to the place where L^AT_EX can find it (see [2] or the documentation for your T_EX system).
3. Update the database of file names. Again, see [2] or the documentation for your T_EX system for the system-specific details.
4. The file `faosyb.pdf` provides the documentation for the package (this is the file you are probably reading now).

As an alternative to items 2 and 3 you can just put the file `faosyb.cls` in the working directory where your `.tex` file is.

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2.1 Invocation

To use the class, put in the preamble of your document

```
\documentclass[<options>]{faosyb}
```

If the option **web** is chosen, the pages of the book have the dimensions corresponding to A4 paper. However, if the option **print** is chosen, then the pages are printed on a wider area, and crop marks are added for the trimming. Either **web** or **print** option must be chosen: there is no default.

If the option **issuu** is chosen, the internal links are transformed to external in the form suitable for <http://www.issuu.com>. Note that this option probably does not make much sense unless **web** option is also chosen. However, it is still possible to select both **print** and **issuu** option if someone needs it for an obscure purpose.

The option **Draft** (note the capitalization!) leads to the the large word ‘DRAFT’ printed across the pages. The standard L^AT_EX option **draft** leads to the same result, but it also makes other changes, most notably, in the behavior of the `\includegraphics` command and warnings.

`\ifprint` It is possible to query the current mode using the macro `\ifprint`, for example

```
\ifprint
  Stuff for print version
\else
  Stuff for web version
\fi
```

Any branch of this conditional may be empty, so web-only stuff can be coded as

```
\ifprint\else Web-only stuff\fi
```

`\includegraphics` There is a special facility for `\includegraphics` command to choose a file depending on the current mode of the package. Namely, if there is a file `image_print.pdf` visible by L^AT_EX, then the commands `\includegraphics{image}` or `\includegraphics{image.pdf}` selects the file `image_print.pdf`. In the case this file is not found, the file `image.pdf` is selected instead. Similarly in the web mode the file `image_web.pdf` will be selected first, and only if it does not exist, `image.pdf` is selected. This rule works also for commands `\includeLargeGraphics` and `\includeExtraLargeGraphics` described below.

Note that at this time there is no similar facility for the `\input` command.

2.2 Setting Parameters

`\faoset` Some parameters in the class can be set with the command `\faoset{<key=value>}`, for example

```
\faoset{bgcolor=blue}
```

Most of the parameters are explained below.

One of the important parameters is **year**. While the package at this time does not provide facilities for the title pages, it needs to know the year for the proper typesetting of footers. The command

```
\faoset{year=2013}
```

is used to provide this information.

2.3 Fonts

`\narrowfamily` The class uses PT Sans fonts [3] for body text and Arev fonts [4] for math. It defines two additional families: Narrow and Caption, corresponding to the PT Sans Narrow and PT Sans Caption font. They can be selected by the declarations `\captionfamily` and `\textcaption` or by the commands `\textnarrow{<text>}` and `\textcaption{<text>}` following the usual L^AT_EX conventions. Note that since PT Sans does not provide math alphabet, this choice does not change the mathematical text.

PT Sans Narrow may be useful for typesetting tables, for example,

```
{\scriptsize\narrowfamily
\rowcolors{4}{@bgcolor!30}{@bgcolor!20}
\input{./Tables/P1.DEM_1.tex}}
```

The choice of `\narrowfamily` is automatically done by the `tablepages` environment.

2.4 Colors and Icons for Parts

A Yearbook is separated into parts (more on this below). Each part has its own color and icon. They are set by the keys `bgcolor` and `icon` of the `\faoset` command, for example,

```
\faoset{icon=./Icons/agriculture.png}
\faoset{icon=./Icons/population}
\faoset{bgcolor=blue}
\faoset{bgcolor=green!25!yellow}
```

The parameter for the `icon` key can be any file name (with or without extension), suitable for the `\includegraphics` command. The parameter for the `bgcolor` key can be specified in any form acceptable by `xcolor` package [5].

The key `tableheadcolor` sets the color for the headers of tables defined by H or P key (see Section 2.7). Normally it is the current `@bgcolor` color, but it can be set to any required value.

`\selecticon` Note that `\faoset` command does not change the icon or background color immediately. When issued *before* `\part` command, it sets up icon and color for

the next part. If needed, you can manually change this using `\selecticon` and `\selectcolor` commands. In most cases you should *not* use these commands.

`@bgcolor` After a `\part` command (or explicit `\selecticon` and `\selectcolor` command we can access the current values of the color in `@bgcolor`, `@tablecolor`
`@tableheadcolor` colors and `\currenticon` macro.
`\currenticon`

Foreword and other parts in the front matter of the book do not use icons. Instead they have geometric symbols. The key `symbol` can have the values `righttriangle`, `square`, `rightsemicircle` and sets the symbol for such part.

`\lettrine` Front matter uses dropped capitals (lettrines) in the beginning of the sections. The command `\lettrine{W}{ord}` can help in this case.

2.5 Sectioning

`\part` The main division of the text are `\parts`. The command `\part{<title>}` is used for
`\section` numbered parts, while the command `\part*{<title>}` is used for unnumbered parts.
`\subsection` The next division are `\sections` and `\subsections`. They are never numbered.
The style does not use `\chapters`.
`\EndPartIntro` The sections immediately following new parts are special: they are typeset in one column and cannot have floats. The command `\EndPartIntro` switches to the “normal” sections.

2.6 Headers and Footers

`\evenfootmark` Normally headers and footers are defined by the text. However, there is a
`\oddfootmark` possibility to change some of them. Commands `\evenfootmark{<text>}` and `\oddfootmark` set the right and left footers for even and odd pages correspondingly (the remaining footers are used by the page numbers). By default they are defined as

```
\evenfootmark{\textbf{FA0} Statistical Yearbook \textbf{\fao@year}}
\oddfootmark{\rightmark}
```

The last command sets the footer to be the current section name (or part name before the first section), but the user can change this.

2.7 Floats

One of the most important changes from the previous version of the class [1] is the treatment of floats.

In standard \LaTeX floats “float”: they can be placed by the algorithm anywhere. The previous version made them “sticky”: the author explicitly tells \TeX where floats should be placed. However, to do so the class required the author to make explicitly page breaks, which was not very convenient.

This version has a completely rewritten interface and algorithm for placing floats:



Figure 1: A Spread

1. Like in standard \LaTeX , authors do not normally provide page breaks— \TeX tries to make this decision for them.
2. Like in the previous version, floats are put exactly where the authors want them—no default placing and second-guessing.

Here is how it is done.

The main unit of the book is *spread*: a verso page and the corresponding recto page. Each page is divided into four quarters, upper left, upper right, lower left and lower right. We will denote them `ul`, `ur`, `ll`, `lr` for the verso page and `UL`, `UR`, `LL`, `LR` for the recto page (Figure 1). We allow four kinds of floats:

Single floats occupy exactly one quarter. They are denoted as `S`.

Tall floats occupy two quarters stacked vertically (for example, `ul` and `ll`). They are denoted as `T`.

Wide floats occupy two quarters adjacent horizontally (for example, `LL` and `LR`). They are denoted as `W`.

Big floats occupy all four quarters on a page. They are denoted as `B`.

The parameters $\{\langle type \rangle\}$ and $\{\langle location \rangle\}$ are mandatory for floats, for example

```

\begin{map}{T}{ur}
...
\end{map}
\begin{chart}{S}{UL}
...
\end{chart}

```

For multiquarter floats the location is the location of the upper left corner, so Big float can use only `ul` or `UL` location.

Of course, not all combinations are valid: you cannot specify float as `{T}{ll}` or `{W}{UR}`, for example. If you use such combinations, the results may be unpredictable. Also it is not predictable what happens if you try to put overlapping floats (e.g. `{S}{UR}` and `{W}{UL}`).

There are two additional rules:

1. A verso page may have text and floats (still it is recommended that if it has text, then it should not have floats occupying the upper left corner).
2. A recto page may have *either* text or floats: if there are floats for this page, all text is moved to the following verso page.

<code>chart</code> <code>map</code> <code>table</code>	<p>There are three types of floats defined by the class:</p> <p>chart plots and other charts,</p> <p>map mapped data.</p> <p>table mini tables.</p>
<code>caption</code>	<p>Each of these kinds of material is typeset using the corresponding environment: chart, table or map. Note that the caption for each of these environments <i>must</i> precede the graphical material, for example:</p>

```

\begin{chart}{B}{UL}
\caption{Hunger Data}
\label{chart:hunger}
\includegraphics{hunger.pdf}
\end{chart}

```

Note that our class redefines `table` environemnt!. For tables on separate pages use `longtable`.

<code>\chartwidth</code> <code>\chartheight</code>	<p>Inside a chart, map or table it is useful to know the size allocated for the graphics or table, for example, to be able to scale the graphics. Two lengths, <code>\chartwidth</code> and <code>\chartheight</code> provide this information, so the user can say, for example,</p>
---	--

```

\includegraphics[width=\chartwidth, height=\chartheight]{theChart}

```

`\source` Inside a `chart`, `map` or `table` the macro `\source{<source>}` gives the source of the information, for example,

`\Source{FA0, Statistical Division [FAOSTAT]}`

`\listoftables` The standard L^AT_EX has the command `\listoftables` to produce the list of
`\listofcharts` tables in the document. Our class retains this command and produces two addi-
`\listofmaps` tional commands `\listofcharts` and `\listofmaps` with the obvious meaning.

2.8 Page Breaks

`\clearpage` Standard L^AT_EX has commands for immediate page break (e.g. `\clearpage`)
`\cleardoublepage` and for switching to the next recto page, possibly ejecting the next verso page
`\clearspread` (`\cleardoublepage`). The class provides another command `\clearspread`. It
switches to the next *verso* page, possibly ejecting the next recto page (and putting
there floats intended for this page, if any).

2.9 Tables

`tablepages` The tables at the end of a part should be typeset inside `tablepages` environment. The environment switches to the one column setup, decreases the margins and changes the font to `\narrowfamily`.

To typeset numerical items one should use `d` column identifier with the format `d{<a.b>}`, where *a* is the number of decimal in the integer part of the number, and *b* is the number of decimal digitst in the fractional part. For example, a number 12.345 corresponds to `d{2.3}`. The column headers are usually *not* numerical, so one need to use `\multicolumn` entries to typeset them. The class defines several such entries:

H produces a centered entry.

P produces an entry of a given length, for example, `P{1.5cm}`

C produces an entry of the length corresponding to the given number of numerical columns. For example, `C{2}` corresponds to a header of two numerical columns. Each column is assumed to be of the size enough to store -99.999 .

`\hhline` For the rules that do not span the table width `\hhline{<specificaition>}` command from the `hhline` package should be used. The `{<specification>}` argument of this command has many variants, but for our purposes we need only one variant: the command `-` produces a horizontal line spanning one column. The color of this line is determined by the command `\arrayrulecolor{<color>}`, issued in the last `>{<argument>}` command before the `-` specification. Therefore the command `>\arrayrulecolor{@tableheadcolor}-` produces a line of the color `@tableheadcolor`, which is seen as the absence of line. The command `>\arrayrulecolor{black}---` produces a black line spanning three columns.

Thus if we have a four-column table and want a rule spanning columns 2-3, the following command should be issued:

```
\hhline{>\arrayrulecolor{@tableheadcolor}}-% Column 1, no rule
>\arrayrulecolor{black}--% Columns 2 and 3, black rule
>\arrayrulecolor{@tableheadcolor}}-% Column 4, no rule
```

The usual `*` specification may be used for repeating patterns, for example, `*{5}{-}` is equivalent to `-----`.

The vertical bar `|` specification in the `\hhline` argument means an interruption of the line. The interruption is by default a black interval, to make it the same color as the header background, use `>\arrayrulecolor{@tableheadcolor}}|`.

The design of the tables in the current edition requires several important changes to the usual tables:

1. There should be no `\toprule` at the beginning of a table.
2. The first row header of a table must be empty and white; this is done by the command `\cellcolor{white}` in this cell.
3. `\hhline` separating rows in the header must not go through this first white cell; this is done by the `~` specification.

2.10 Publication Descriptions

`\KeyResources` Publication descriptions normally are collected in a special section inside part introduction. This section is introduced by the command `\KeyResources`. There are two options that must be set by `\faoset` to use by this command: `resourcesicon` and `resourcesname`. The first is the filename of the icon used for section heading, the second is the name of the section, for example

```
\faoset{resourcesicon=icons/resources.png,
resourcesname={Key Resources}}
```

`publication` FAO yearbook describes some FAO publications. These publications should be put inside the environment `publication`. The environment has one mandatory argument, which is the title of the publication, and one optional argument, which sets the file name of the publication cover. Note that the option argument, if present, must precede the mandatory one. If this argument is absent, no cover is included. Inside the environment the macros `\pDescription{<description>}`, `\pEdition{<year>}{<edition>}`, `\pWeb{<URL>}` and `\pCycle{<date>}` are used to typeset the corresponding items related to the publication. For example,

```
\pDescription
\pEdition
\pCycle
pWeb
\begin{publication}[./Plots/StateOfFoodAndAgriculture.png]{The State
of Food and Agriculture}
\pDescription{The State of Food and Agriculture, FAO's major
annual flagship publication, aims at bringing to a wider
audience balanced science-based assessments of important issues
```



```

in the field of food and agriculture. Each edition of the
report contains a comprehensive, yet easily accessible, overview
of a selected topic of major relevance for rural and
agricultural development and for global food security. This is
supplemented by a synthetic overview of the current global
agricultural situation.}
\pEdition{2010}{Livestock in the balance}
\pEdition{2011}{Women in Agriculture Closing the gender gap for
development}
\pCycle{May each year}
\pWeb{http://www.fao.org/docrep/013/i2050e/i2050e00.htm}
\end{publication}

```

Note that, as in the example, some fields may be repeated.

`publicationparskip` Two spacing parameters can be used for typesetting of publications: `publicationskip` is the amount of additional space between the publications, while `publicationparskip` is the space between the paragraphs inside the publication environment. The default values correspond to the command

```

\faoset{publicationskip=6pt plus 2pt minus 2pt,
publicationparskip=6pt plus 6pt minus 4pt}

```

2.11 Metadata

`\metadatasection` The sources of the data are collected in special sections called “Metadata section”. Each section is introduced by the command `\metadatasection{<title>}`, for example,

```
\metadatasection{Indicators}
```

`metadata` The sources themselves are collected in the `metadata` environments. Each environment has one obligatory argument—the name of the source. It may include the following commands:

```

\key \key{<key>} sets the corresponding key which is used for labeling the metadata
\source \source{<source>} sets the source of the data.
\owner \owner{<owner>} sets the owner of the data.

```

Note that there is no “description” command because any text which is not an argument of the commands above is considered to belong to the description of the data.

Example of the usage of these commands:

```

\metadatasection{Indicators}
\begin{metadata}{Agricultural population}
\key{agripop}%

```

```

Agricultural population is defined as all persons depending for
their livelihood on agriculture, hunting, fishing and forestry.
It comprises all persons economically active in agriculture as
well as their non-working dependents. It is not necessary that
this referred population exclusively come from rural population.
\source{FILL ME}
\owner{FILL ME}
\end{metadata}

```

Each indicator is preceded by a square, normally grey-colored. The command `\faoset` with the key `indicatorsquarecolor` can be used to set the color of the square, for example

```
\faoset{indicatorsquarecolor={black!10}}
```

`\refMetadata` The metadata is referenced by the command `\refMetadata{<key>}`, for example

```
\refMetadata{agripop}
```

This command will not be typeset, but makes creates a backreference to the corresponding chart from the indicator section.

Note that the package automatically provides backreferencing: all charts, maps and tables where the metadata is referenced, are mentioned in the corresponding metadata section.

2.12 Further Reading

`freading` The special environment `freading` is used for the “further reading” sections of the book. It starts the text from the new page and changes some defaults.

2.13 Subscripts in Text

`\textsubscript` The standard L^AT_EX defines `\textsuperscript`. The class adds a similar `\textsubscript` command.

3 Implementation

3.1 Options

`\faoyearbook@size@warning` The font-changing options are not used in our setup, so we just produce a warning:

```
1 \long\def\faoyearbook@size@warning#1{%
2   \ClassWarning{faoyearbook}{Size-changing option #1 will not be
3     honored}}%
4 \DeclareOption{8pt}{\faoyearbook@size@warning{\CurrentOption}}%
5 \DeclareOption{9pt}{\faoyearbook@size@warning{\CurrentOption}}%
6 \DeclareOption{10pt}{\faoyearbook@size@warning{\CurrentOption}}%
7 \DeclareOption{11pt}{\faoyearbook@size@warning{\CurrentOption}}%
8 \DeclareOption{12pt}{\faoyearbook@size@warning{\CurrentOption}}%
```

`\ifprint` We have a flag which shows whether we are in Web or print mode

```
9 \newif\ifprint
10 \printfalse
11 \DeclareOption{web}{\printfalse
12   \PassOptionsToPackage{paper=a4paper}{geometry}}
13 \DeclareOption{print}{\printtrue
14   \PassOptionsToPackage{papersize={230mm,317mm},
15     layoutoffset=1cm,layoutvoffset=1cm}{geometry}}
```

`\ifDraft` If we are in ‘Draft’ or ‘draft mode’, we print a word ‘draft’ across the page:

```
16 \newif\ifDraft
17 \Draftfalse
18 \DeclareOption{Draft}{\Drafttrue}
19 \DeclareOption{draft}{\Drafttrue}
```

`\if@issuemode` Whether we need issuu-style links

```
20 \newif\if@issuemode
21 \@issuemodefalse
22 \DeclareOption{issuu}{\@issuodemtrue}
```

All other options are just sent to the main class:

```
23 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{report}}
24 \ProcessOptions\relax
```

3.2 Loading Class and Packages

We start with the base class and some packages

```
25 \LoadClass[10pt,twoside,twocolumn]{report}
26 \RequirePackage{graphicx,xkeyval}
27 \RequirePackage[table,cm]{xcolor}
28 \RequirePackage{tikz,dcolumn}
29 \RequirePackage{geometry}
30 \usetikzlibrary{calc}
31 \RequirePackage{fancyhdr}
32 \RequirePackage{lscape,longtable,siunitx,booktabs}
```

```

33 \RequirePackage{multicol,atbegshi,picture,hhline,afterpage}
34 \RequirePackage[T1]{fontenc}
35 \RequirePackage[utf8x]{inputenc}
36 \RequirePackage{pdfpages}
37 \RequirePackage[authoryear]{natbib}
38 \RequirePackage[breaklinks]{hyperref}
39 \RequirePackage{bookmark}
40 \RequirePackage{adjmulticol,lettrine}
41 \if@issuamode
42 \RequirePackage{issuulinks}
43 \fi

```

Options for the hyperref package are set as follows:

```

44 \hypersetup{breaklinks,colorlinks=false,pdfborder=0 0 0,
45   pdfauthor={FAO},
46   pdfsubject={Statistical Yearbook of the Food And Agricultural Organization for the United Nations},
47   pdftitle={Statistical Yearbook of the Food And Agricultural Organization for the United Nations},
48   pdfkeywords={FAO, Food Security, Undernourishment, Sustainable agriculture},
49   pdfpagelayout=TwoColumnLeft,
50   pdfnewwindow=true
51 }

```

3.3 Color

We need to tell the printer that we are using CMYK color model. The following is taken from the pdfx package (the package itself is not too easy to make work).

```

52 \def\@pctchar{\expandafter\@gobble\string\%}
53 \def\@bchar{\expandafter\@gobble\string\}
54 \immediate\pdfobj stream attr{/N 4} file{FOGRA39L.icc}
55 \edef\OBJ@CVR{\the\pdfastobj}
56 \pdfcatalog{/OutputIntents [ <<
57   /Type/OutputIntent
58   /S/GTS_PDFX
59   /OutputCondition (FOGRA39)
60   /OutputConditionIdentifier (FOGRA39 \@bchar(ISO Coated v2
61     300\@pctchar\space \@bchar(ECI\@bchar)\@bchar))
62   /DestOutputProfile \OBJ@CVR\space 0 R
63   /RegistryName(http://www.color.org)
64 >> ]}

```

`\LettrineFontHook` We want the drop caps to have @bgcolor

```
65 \renewcommand\LettrineFontHook{\color{@bgcolor}}
```

`\DefaultFindent` The distance between the dropped capital and the text

```
66 \setlength\DefaultFindent{2pt}
```

3.4 Key-Value Interface

`\faoset` We define the family fao for our keys:

```
67 \def\faoset#1{\setkeys{fao}{#1}}
```

One of the important keys is year

```
68 \define@key{fao}{year}{\gdef\fao@year{#1}}
69 \faoset{year=20XX}
```

3.5 Fonts

We use arev for mathematics:

```
70 \RequirePackage{arevmath}
```

For body text we use PT Sans:

```
71 \def\PTSans@scale{0.95}
72 \def\PTSansNarrow@scale{0.95}
73 \def\PTSansCaption@scale{0.95}
74 \renewcommand{\sfdefault}{PTSans-TLF}
75 \renewcommand{\familydefault}{\sfdefault}
76 \renewcommand{\bfdefault}{b}
```

`\narrowfamily` We declare a new family, `\narrowfamily`:

```
77 \DeclareRobustCommand\narrowfamily{\fontfamily{PTSansNarrow-TLF}\selectfont}
```

`\textnarrow` And the matching `\textnarrow` command:

```
78 \DeclareTextFontCommand{\textnarrow}{\narrowfamily}
```

`\captionfamily` Same with `\captionfamily`:

```
79 \DeclareRobustCommand\captionfamily{\fontfamily{PTSansCaption-TLF}\selectfont}
```

`\textcaption` And the matching `\textcaption` command:

```
80 \DeclareTextFontCommand{\textcaption}{\captionfamily}
```

`\normalsize` The basic size is 9.6pt:

```
81 \renewcommand\normalsize{%
82   \setfontsize\normalsize{9.6pt}{\xiipt}%
83   \abovedisplayskip 10\p@ \@plus2\p@ \@minus5\p@
84   \abovedisplayshortskip \z@ \@plus3\p@
85   \belowdisplayshortskip 6\p@ \@plus3\p@ \@minus3\p@
86   \belowdisplayskip \abovedisplayskip
87   \let\@listi\@listI}
88 \normalsize
```

`\small` This is the small size:

```
89 \renewcommand\small{%
90   \setfontsize\small{\ixpt{10}}%
91   \abovedisplayskip 8.5\p@ \@plus3\p@ \@minus4\p@
92   \abovedisplayshortskip \z@ \@plus2\p@
93   \belowdisplayshortskip 4\p@ \@plus2\p@ \@minus2\p@
94   \def\@listi{\leftmargin\leftmarginI
95     \topsep 4\p@ \@plus2\p@ \@minus2\p@
96     \parsep 2\p@ \@plus\p@ \@minus\p@
97     \itemsep \parsep}%
98   \belowdisplayskip \abovedisplayskip}
```

We use `rm` style of URL:

```
99 \urlstyle{sf}
```

3.6 Margins and Paragraphing

`\parindent` We use not indented paragraphs with paragraph borders given by skips

```
\parskip 100 \setlength\parindent\z@
101 \setlength\parskip{6\p@ plus 6\p@ minus 4\p@}
```

We use `a4paper`.

```
102 \geometry{layout=a4paper,
103     left=5cm,right=3.5cm,bottom=2.3cm,top=76mm,
104     footskip=8mm, head=30mm, headsep=3mm,
105     columnsep=6mm, twoside}%
106 \savegeometry{frontmatter}
107 \geometry{layout=a4paper,
108     left=2cm,right=2cm,bottom=2.3cm,top=2.3cm,
109     footskip=8mm, head=30mm, headsep=3mm,
110     columnsep=6mm, twoside}%
111 \savegeometry{standard}
```

3.7 Cropmarks

There are several packages that provide crop marks. Unfortunately they do not work for us because they put crop marks at the background. Since we have colored pages, we want crop marks to be on the foreground.

In this section we re-implement cropmarks of the `geometry` package, putting the marks on the foreground.

We postpone the code to the beginning of the document to get the proper value of the switch

```
112 \AtBeginDocument{\ifprint
113     \AtBeginShipout{%
114         \AtBeginShipoutUpperLeftForeground{%
115             \color{black}%
116             \@tempdima=\Gm@layouthoffset
117             \@tempdimb=\Gm@layoutvoffset
118             \put(\@tempdima,-\@tempdimb+6\p@){\line(0,1){50}}%
119             \put(\@tempdima-6\p@,-\@tempdimb){\line(-1,0){50}}%
120             \advance\@tempdima by \Gm@layoutwidth
121             \put(\@tempdima,-\@tempdimb+6\p@){\line(0,1){50}}%
122             \put(\@tempdima+6\p@,-\@tempdimb){\line(1,0){50}}%
123             \advance\@tempdimb by \Gm@layoutheight
124             \put(\@tempdima,-\@tempdimb-6\p@){\line(0,-1){50}}%
125             \put(\@tempdima+6\p@,-\@tempdimb){\line(1,0){50}}%
126             \advance\@tempdima by -\Gm@layoutwidth
127             \put(\@tempdima-6\p@,-\@tempdimb){\line(-1,0){50}}%
128             \put(\@tempdima,-\@tempdimb-6\p@){\line(0,-1){50}}%
129         }}\fi}
```

In draft mode we put the word ‘DRAFT’ across the page:

```

130 \AtBeginDocument{\ifDraft
131   \AtBeginShipout{%
132     \AtBeginShipoutUpperLeft{%
133       \color{black!25}%
134       \@tempdima=\Gm@layouthoffset
135       \@tempdimb=\Gm@layoutvoffset
136       \advance\@tempdima by 0.2\Gm@layoutwidth
137       \advance\@tempdimb by 0.7\Gm@layoutheight
138       \put(\@tempdima,-\@tempdimb){%
139         \rotatebox{45}{%
140           \fontsize{6cm}{6cm}\selectfont
141           DRAFT}}}\fi}

```

3.8 Setting Colors and Icons

`\fao@color@string` This is the command that remembers the present color for TOC

```

142 \def\fao@color@string{0,0,0}

```

`@bgcolor@next` We store the next background color in `@bgcolor@next`. We store the next heading background in `@tableheadcolor@next`.

`\setbgcolor` The command `\setbgcolor` selects the next background color:

```

143 \def\setbgcolor#1{\colorlet{@bgcolor@next}[cmyk]{#1}%
144   \@for\curr@ext:=\@toc@ext@list\do{%
145     \addtocontents{\curr@ext}{\string\colorlet{@bgcolor}[cmyk]{#1}}%
146     \addtocontents{toc}{\string\colorlet{@bgcolor}[cmyk]{#1}}%
147     \gdef\fao@color@string{#1}}
148 \colorlet{@bgcolor@next}[cmyk]{white}

```

The key-value interface for the same command:

```

149 \define@key{fao}{bgcolor}{\setbgcolor{#1}}

```

And for separate setting of `@tableheadcolor`

```

150 \define@key{fao}{tableheadcolor}{\colorlet{@tableheadcolor}[cmyk]{#1}}

```

`@bgcolor` The current color is in the macro `@bgcolor`.

`@tableheadcolor` This command makes the actual color change:

```

\selectcolor
151 \def\selectcolor{\colorlet{@bgcolor}{@bgcolor@next}%
152   \colorlet{@tableheadcolor}{@bgcolor}}
153 \selectcolor

```

`@tablebg` The color for table pages

```

154 \define@key{fao}{tablebg}{\colorlet{@tablebg}[cmyk]{#1}}

```

`\seticon` Setting the next icon for the part

```

155 \def\seticon#1{\gdef\next@icon{#1}}
156 \define@key{fao}{icon}{\seticon{#1}}

```

`\selecticon` The actual icon change

`\currenticon` 157 `\def\selecticon{\gdef\currenticon{\next@icon}}`
158 `\def\next@icon{}`

`\newicon` Define an icon #2 for the part #1
159 `\def\newicon#1#2{\expandafter\gdef\csname @icon@#1\endcsname{#2}}`

`\colored@icon` The icon for us is just a mask. This will create a colored icon using background
@bgcolor
160 `\newcommand\colored@icon[2][\bgroup\fbboxsep=-1pt%`
161 `\fcolorbox{white}{@bgcolor}{\includegraphics[#1]{#2}}\egroup}`

`\colored@icon@fg` The icon for us is just a mask. This will create a colored icon using background
@bgcolor!#3
162 `\newcommand\colored@icon@fg[3][\bgroup\fbboxsep=-1p%`
163 `\fcolorbox{white}{@bgcolor!#3}{\includegraphics[#1]{#2}}\egroup}`

3.9 Page Styles

`\evenfootmark` The mark on even pages
164 `\def\evenfootmark#1{\gdef\@evenfootmark{#1}}`
165 `\evenfootmark{\textbf{FAO} Statistical Yearbook \textbf{\fao@year}}`

`\oddfootmark` The mark on odd pages
166 `\def\oddfootmark#1{\gdef\@oddfootmark{#1}}`
167 `\oddfootmark{\rightmark}`

`frontmatterpagestyle` This is our page style for front matter
168 `\fancypagestyle{frontmatterpagestyle}{%`
169 `\fancyhf{}`
170 `\fancyhfoffset[LR]{1.5cm}%`
171 `\renewcommand\headrulewidth{\z@}%`
172 `\fancyfoot[RO,LE]{%`
173 `\bgroup`
174 `\setlength\fbboxsep{10p@}%`
175 `\raisebox{-\height}{\fcolorbox{white}{white}{\thepage}}%`
176 `\egroup}%`
177 `}`
178 `%`
179 `% \end{macro}`
180 `% \begin{macro}{spartpagestyle}`
181 `% \changes{v1.4}{2013/12/17}{Introduced macro}`
182 `% This is our page style for front matter`
183 `% \begin{macrocode}`
184 `\fancypagestyle{spartpagestyle}{%`
185 `\fancyhf{}`
186 `\fancyhfoffset[LR]{3cm}%`
187 `\renewcommand\headrulewidth{\z@}%`


```

188 \fancyfoot [RO,LE]{%
189   \bgroup
190   \setlength\fbboxsep{10\p@}%
191   \raisebox{-\height}{\fcolorbox{white}{white}{\thepage}}}%
192 \egroup}%
193 }
194 %
195 % \end{macro}
196 %
197 % \begin{macro}{\@foliobox}
198 % \changes{v1.6}{2013/12/19}{Introduced macro}
199 % This is the macro that typesets the page number in a colorbox of
200 % the required size
201 % \begin{macrocode}
202 \def\@foliobox{\bgroup\normalsize\normalfont\fbboxsep=5mm\relax
203 \fcolorbox{@bgcolor}{@bgcolor}{\parbox{4mm}{\centering
204 \color{white}\thepage\strut}}\egroup}

```

standardpagestyle This is our main page style

```

205 \fancypagestyle{standardpagestyle}{%
206   \fancyhf{}%
207   \fancyhfoffset [LR]{2.12cm}%
208   \renewcommand\headrulewidth{\z@}%
209   \fancyhead [LE]{\hspace*{25\p@}\color{@bgcolor}\captionfamily
210   \Huge\strut\ifnum\thepart>0\relax
211   \thepart\fi\normalsize\dotfill}%
212   \fancyhead [LO]{\hspace*{25\p@}\color{@bgcolor}\normalsize\dotfill
213   \captionfamily\Huge\strut
214   \leftmark\expandafter\ifx\csname @icon@\thepart\endcsname\relax\else\space
215   \raisebox{-0.25\totalheight}{%
216     \colored@icon[width=1.2cm]{\csname
217       @icon@\thepart\endcsname}}\fi
218   \hspace*{25\p@}}}%
219   \fancyfoot [LE]{%
220     \bgroup
221     \setlength\fbboxsep{11\p@}%
222     \color{@bgcolor}%
223     \raisebox{-\height}{\@foliobox}%
224     \normalsize\dotfill
225     \raisebox{-\height}{\@evenfootmark\hspace*{25\p@}}}%
226   \egroup}%
227   \fancyfoot [LO]{%
228     \bgroup
229     \setlength\fbboxsep{11\p@}%
230     \color{@bgcolor}%
231     \raisebox{-\height}{\hspace*{25\p@}\@oddfootmark}%
232     \normalsize\dotfill
233     \raisebox{-\height}{\@foliobox}%
234   \egroup}%
235 }

```

```

236 \pagestyle{standardpagestyle}

\@partpagerpicture A picture in the part page. \@part defines it to the combination of the current
icons
237 \def\@partpagepicture{}

partpagestyle The page style for the parts introduction
238 \fancypagestyle{partpagestyle}{%
239   \fancyhf{}%
240   \fancyhead[L]{%
241     \begin{picture}(0,0)
242       \@partpagepicture
243       \put(-7,63){%
244         \raisebox{-\height}{\begin{tikzpicture}
245           \fill[color=@bgcolor,opacity=.1]
246             (0,0) rectangle ($(\textwidth,\textheight)+(5cm,5cm)$);
247         \end{tikzpicture}}}%
248       \end{picture}}
249   \fancyhfoffset[LR]{2.22cm}%
250   \renewcommand\headrulewidth{\z@}%
251   \fancyfoot[LE]{%
252     \bgroup
253     \setlength\fbboxsep{10\p@}%
254     \color{@bgcolor}%
255     \raisebox{-\height}{\@foliobox}%
256     \normalsize\dotfill
257     \raisebox{-\height}{\@evenfootmark\hspace{20\p@}}}%
258   \egroup}%
259   \fancyfoot[LO]{%
260     \bgroup
261     \setlength\fbboxsep{10\p@}%
262     \color{@bgcolor}%
263     \raisebox{-\height}{\hspace*{25\p@}\@oddfootmark}%
264     \normalsize\dotfill
265     \raisebox{-\height}{\@foliobox}%
266   \egroup}%
267 }

\faopartblobtop Some pages have “part blobs”: colored blobs on the specific positions of the page.
\faopartblobbottom These macros set the top and the bottom of the blob corresponding to the part
set in the second parameter:
268 \def\faopartblobtop#1#2{\expandafter\gdef\csname fao@blobstart#1\endcsname{#2}}
269 \def\faopartblobbottom#1#2{\expandafter\gdef\csname fao@blobend#1\endcsname{#2}}

```

3.10 Nonfloats

In Faoyearbook we used float package. Since we changed too much in the internals, here we just rewrite the code from scratch.

<code>\@toc@ext@list</code>	Added macro Comma-separated list of extensions for toc-like files: 270 <code>\gdef\@toc@ext@list{toc}</code>
<code>\nf@vert@sep</code>	Vertical separation between the floats 271 <code>\newlength\nf@vert@sep</code> 272 <code>\setlength\nf@vert@sep{10mm}</code>
<code>\nf@width</code>	The width of the nonfloat 273 <code>\newlength\nf@width</code>
<code>\nf@height</code>	The height of the nonfloat 274 <code>\newlength\nf@height</code>
<code>\nf@captionheight</code>	The height reserved for the caption 275 <code>\newlength\nf@captionheight</code> 276 <code>\setlength\nf@captionheight{11mm}</code>
<code>\nf@sourceheight</code>	The height reserved for the source lines 277 <code>\newlength\nf@sourceheight</code> 278 <code>\setlength\nf@sourceheight{2\baselineskip}</code>
<code>\nf@margin</code>	Margin for floats 279 <code>\newlength\nf@margin</code> 280 <code>\setlength\nf@margin{12\p@}</code>
<code>\nf@trianglebase</code>	The design requires a triangle under the caption. Here it is 281 <code>\newlength\nf@trianglebase</code> 282 <code>\setlength\nf@trianglebase{12\p@}</code>
<code>\chartwidth</code>	The resulting width of a chart 283 <code>\newlength\chartwidth</code>
<code>\charheight</code>	The resulting width of a chart 284 <code>\newlength\charheight</code>
<code>\nf@topskip</code>	Top separation for a nonfloat <code>@topskip</code>
<code>\nf@bottomskip</code>	Bottom separation for a nonfloat <code>@bottomskip</code>
<code>\nonfloat@type</code>	The counter to keep the next type to assign 285 <code>\newcount\nonfloat@type</code> 286 <code>\nonfloat@type=4\relax</code>
<code>\nf@contentsbox</code>	The box to keep the contents of the float 287 <code>\newbox\nf@contentsbox</code>
<code>\nf@mainbox</code>	The box for the float 288 <code>\newbox\nf@mainbox</code>

`\newnon@float` The macro `\newnon@float` has the following arguments: TYPE, EXT, NAME for example

```
\newnon@float{map}{lom}{Map}
```

It defines a nonfloat with these parameters.

```
289 \def\newnon@float#1#2#3{%
```

First, we need to define `\ftype@TYPE`: the type of the float. Note that tables are taken, so we need to make a special care of nonfloats that correspond to floats.

```
290 \expandafter\ifx\csname ftype@#1\endcsname\relax
291 \expandafter\edef\csname ftype@#1\endcsname{\the\nonfloat@type}%
292 \multiply\nonfloat@type by 2\relax
293 \fi
```

Now we define the extension for the floats

```
294 \expandafter\def\csname ext@#1\endcsname{#2}%
295 \xdef\@toc@ext@list{\@toc@ext@list,#2}%
```

The macro `\fnum@TYPE` formats the line like “Figure 1”. We need to check whether the counter is defined

```
296 \expandafter\ifx\csname the#1\endcsname\relax
297 \newcounter{#1}\fi
298 \expandafter\def\csname fnum@#1\endcsname{#3~\csname
299 the#1\endcsname}%
```

Now we want to define the environment TYPE. Since it might be already defined, we first delete this definition, otherwise `\newenvironment` might throw an error

```
300 \expandafter\let\csname #1\endcsname\relax
301 \expandafter\let\csname end#1\endcsname\relax
```

And the actual definition

```
302 \newenvironment{#1}{\non@float{#1}}{\endnon@float}}
```

`\@getfirstletter` An aux macro to get a first letter of a word. Used in constructs

```
\edef\U{\@getfirstletter{AAAAA\@endword}}
```

```
303 \def\@getfirstletter#1{\@getfirstletter#1}
304 \def\@getfirstletter#1{#1\@gobbleword}
305 \def\@gobbleword#1\@endword{}
```

`\non@float` Now we are ready to define the `\non@float` macro. It has three parameters: TYPE, SIZE and PLACEMENT. `\nf@source` is the source of the float.

```
306 \def\non@float#1#2#3{
307 \def\@captype{#1}%
308 \def\nf@size{#2}%
309 \def\nf@placement{#3}%
```

The macro `\nf@vert@pos` is either u or l

```
310 \lowercase{\xdef\nf@vert@pos{\@getfirstletter#3\@endword}}
311 \global\let\nf@source\@empty
```

Define the source command inside float

```

312 \def\source##1{\gdef\nf@source{##1}}

```

Define the caption producing command:

```

313 \long\def\makecaption##1##2{\long\gdef\nf@caption{%
314   {\bfseries\large\color{white}
315     \MakeUppercase{##1}: ##2}}}%
316 \gdef\nf@caption{}%

```

We calculate the size of the float and skips

```

317 \nf@width=\columnwidth
318 \nf@height=\dimexpr(\textheight/2-\nf@vert@sep)%
319 \if\nf@vert@pos u\relax
320   \nf@topskip=\z@
321   \nf@bottomskip=\nf@vert@sep
322 \else
323   \nf@topskip=\nf@vert@sep%
324   \nf@bottomskip=\z@
325 \fi
326 \def\tempW{W}%
327 \def\tempT{T}%
328 \def\tempB{B}%
329 \ifx\nf@size\tempW
330   \nf@width=\textwidth
331 \fi
332 \ifx\nf@size\tempT
333   \nf@height=\textheight
334   \nf@topskip=\z@
335   \nf@bottomskip=\z@
336 \fi
337 \ifx\nf@size\tempB
338   \nf@width=\textwidth
339   \nf@height=\textheight
340   \nf@topskip=\z@
341   \nf@bottomskip=\z@
342 \fi
343 \chartheight=
344   \dimexpr(\nf@height-\nf@captionheight-\nf@sourceheight
345     -2\nf@margin-\nf@trianglebase)%
346 \ifx\nf@size\tempB
347   \advance\chartheight by -2\baselineskip
348 \fi
349 \ifx\nf@size\tempT
350   \advance\chartheight by -2\baselineskip
351 \fi
352 \chartwidth=\dimexpr(\nf@width-2\nf@margin-0.5\nf@trianglebase)%
353 \nf@height=\dimexpr(\nf@height+\nf@topskip+\nf@bottomskip)%

```

Now we construct the main box.

```

354 \global\setbox\nf@contentsbox
355   \color@vbox

```

```

356 \normalcolor
357 \vbox to \chartheight
358 \bgroup
359 \hsize\chartwidth
360 \@parboxrestore
361 \@floatboxreset
362 }

```

\endnon@float The actual typesetting

```

363 \def\endnon@float{\@endfloatbox\par
364 \hsize=\nf@width
365 \setbox\nf@mainbox=\vbox to \nf@height\bgroup
366 \hsize=\chartwidth
367 \vskip\nf@topskip
368 \noindent
369 \begin{picture}(0,0)%
370 \put(0,0){\color{\bgcolor}%
371 \begin{tikzpicture}[baseline=(current bounding box.north)]
372 \fill (0,0) -- (\nf@trianglebase,0) --
373 (0.5\nf@trianglebase,-\nf@trianglebase) -- cycle;
374 \end{tikzpicture}}
375 \end{picture}%
376 \def\@tempa{chart}%
377 \ifx\@tempa\@cuptype
378 \begin{picture}(0,0)%
379 \put(0,0){\color{\bgcolor}%
380 \begin{tikzpicture}[baseline=(current bounding box.north)]
381 \draw(0,0) -- (\nf@width,0);
382 \draw (0.5\nf@trianglebase,-2\nf@trianglebase) --
383 (0.5\nf@trianglebase,-\chartheight-2\nf@trianglebase
384 -\nf@margin) --
385 (\nf@width-\pgflinewidth, -\chartheight-2\nf@trianglebase
386 -\nf@margin) -- (\nf@width-\pgflinewidth, 0);
387 \end{tikzpicture}}
388 \end{picture}%
389 \fi
390 {\color{\bgcolor}\color@block{\nf@width}{\nf@captionheight}{.1\p}}%
391 \hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
392 \vbox to \nf@captionheight\bgroup
393 \nf@caption\vfill\normalcolor
394 \egroup\par\nointerlineskip\vskip\nf@trianglebase
395 \vskip\nf@margin
396 \noindent\hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
397 \box\nf@contentsbox\par\nointerlineskip
398 \vskip\nf@margin
399 \hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
400 \vbox to \nf@sourceheight\bgroup
401 \leftskip-\nf@margin\parskip\z@\parindent\z@
402 \ifx\nf@source\@empty\else
403 \vskip0.5\baselineskip

```

```

404 \color{bgcolor}%
405 \rule{.2em}{.2em}~\rule{.2em}{.2em}~%
406 \rule{.2em}{.2em}~\rule{.2em}{.2em}~%
407 \rule{.2em}{.2em}~\rule{.2em}{.2em}~%
408 \rule{.2em}{.2em}\par\normalcolor
409 Source: \nf@source\par\vfill\fi\egroup
410 \vfill\egroup
411 \edef\nf@currbox{\expandafter\csname nfbox@\nf@size
412 @\nf@placement\endcsname}%
413 \global\setbox\nf@currbox=
414 \vbox{\box\nf@currbox\nointerlineskip\penalty0\box\nf@mainbox}}

\map A standard nonfloat:
415 \newnon@float{map}{lom}{Map}

\listofmapsname The name for the list of maps
416 \def\listofmapsname{List of Maps}

\table Another one
417 \newnon@float{table}{lot}{Table}

\chart And another one
418 \newnon@float{chart}{loc}{Chart}

\listofchartsname The name for the list of charts
419 \def\listofchartsname{List of charts}

```

3.11 Output Routine

This is hairy because output routines are hairy...

We need several insert boxes. Naming convention: the letter for the box size and two letter code for the location. We use `\newbox` instead of `\newinsert` since we do not use associated `\count`, `\dimen` and `\skip` registers.

```

420 \newbox\nfbox@S@ul
421 \newbox\nfbox@S@ur
422 \newbox\nfbox@S@ll
423 \newbox\nfbox@S@lr
424 \newbox\nfbox@S@UL
425 \newbox\nfbox@S@UR
426 \newbox\nfbox@S@LL
427 \newbox\nfbox@S@LR
428 \newbox\nfbox@T@ul
429 \newbox\nfbox@T@ur
430 \newbox\nfbox@T@UL
431 \newbox\nfbox@T@UR
432 \newbox\nfbox@W@ul
433 \newbox\nfbox@W@ll
434 \newbox\nfbox@W@UL

```

```

435 \newbox\nfbox@W@LL
436 \newbox\nfbox@B@ul
437 \newbox\nfbox@B@UL

\@tempboxb Standard LATEX has \@tempboxa. We need more...
438 \ifx\@tempboxb\@undefined
439   \newbox\@tempboxb
440 \fi

\standard@output The standard LATEX output routine is saved as \standard@output. We use it for
one column pages—maybe one even wants a standard float here?
441 \edef\standard@output{\the\output}

\output Right now we use standard output on one column pages and the new one with
two columns
442 \output{\if@twocolumn\the\nf@output\else\standard@output\fi}

\nf@output Here we define our own output routine.
443 \newtoks\nf@output
444 \nf@output {%

We define the current boxes \curr@nfbox.... Also, uc or lc mean Upper or
Lower Current column
445   \ifodd\c@page
446     \global\let\curr@nfbox@S@ul\nfbox@S@UL
447     \global\let\curr@nfbox@S@ur\nfbox@S@UR
448     \global\let\curr@nfbox@S@ll\nfbox@S@LL
449     \global\let\curr@nfbox@S@lr\nfbox@S@LR
450     \global\let\curr@nfbox@T@ul\nfbox@T@UL
451     \global\let\curr@nfbox@T@ur\nfbox@T@UR
452     \global\let\curr@nfbox@W@ul\nfbox@W@UL
453     \global\let\curr@nfbox@W@ll\nfbox@W@LL
454     \global\let\curr@nfbox@B@ul\nfbox@B@UL
455   \else
456     \global\let\curr@nfbox@S@ul\nfbox@S@ul
457     \global\let\curr@nfbox@S@ur\nfbox@S@ur
458     \global\let\curr@nfbox@S@ll\nfbox@S@ll
459     \global\let\curr@nfbox@S@lr\nfbox@S@lr
460     \global\let\curr@nfbox@T@ul\nfbox@T@ul
461     \global\let\curr@nfbox@T@ur\nfbox@T@ur
462     \global\let\curr@nfbox@W@ul\nfbox@W@ul
463     \global\let\curr@nfbox@W@ll\nfbox@W@ll
464     \global\let\curr@nfbox@B@ul\nfbox@B@ul
465   \fi
466   \if@firstcolumn
467     \global\let\curr@nfbox@S@uc\curr@nfbox@S@ul
468     \global\let\curr@nfbox@S@lc\curr@nfbox@S@ll
469     \global\let\curr@nfbox@T@uc\curr@nfbox@T@ul
470   \else

```



```

471 \global\let\curr@nfbbox@S@uc\curr@nfbbox@S@ur
472 \global\let\curr@nfbbox@S@lc\curr@nfbbox@S@lr
473 \global\let\curr@nfbbox@T@uc\curr@nfbbox@T@ur
474 \fi
475 \let \par \@@par

476 %
477 % There are several possibilities when we start the output routine for
478 % a single column in a two-column layout.
479 % \begin{enumerate}
480 % \item Wide or big non-floats completely cover the page. In this
481 % case we do not need to create columns, and directly go to the
482 % output.
483 % \item The column is occupied by tall or single nonfloats. We make
484 % a column of nonfloats and send it further.
485 % \item There is room for text on the page, but its height
486 % (\cs{@colroom}) is different from the one known to the page builder
487 % (\cs{vsize}). In this case we change \cs{vsize} and return.
488 % \item The room for text is exactly \cs{vsize}. In this case we form
489 % a column and return.
490 % \end{enumerate}
491 % \begin{macrocode}
492 \global\@colht=\textheight
493 \ifdim\ht\curr@nfbbox@B@ul>0.5\baselineskip
494 \global\advance\@colht by -\textheight
495 \fi
496 \ifdim\ht\curr@nfbbox@W@ul>0.5\baselineskip
497 \global\advance\@colht by -0.5\textheight
498 \fi
499 \ifdim\ht\curr@nfbbox@W@ll>0.5\baselineskip
500 \global\advance\@colht by -0.5\textheight
501 \fi
502 \ifdim\@colht < \baselineskip
503 \nf@output@widepage
504 \else
505 \nf@makecol
506 \fi
507 }

```

`\nf@output@widepage` The macro `\nf@output@widepage` outputs a page completely filled by wide pictures.

```

508 \def\nf@output@widepage{%
509 \unvbox\@cclv
510 \penalty\outputpenalty
511 \if@firstcolumn\else
512 \ClassError{faosyb}{Wide or big nonfloats defined too late. Move
513 them up}{I encountered Big or Wide floats when I already made the
514 first column. Please move them up}
515 \fi
516 \ifdim\ht\curr@nfbbox@B@ul>0.5\baselineskip

```

```

517     \setbox\@tempboxa\vsplit\curr@nfbox@B@ul to \textheight
518     \setbox\@outputbox \vbox\bgroup
519       \boxmaxdepth \@maxdepth
520       \box\@tempboxa
521       \vfill
522     \egroup
523   \else
524     \setbox\@tempboxa\vsplit\curr@nfbox@W@ul to 0.5\textheight
525     \setbox\@tempboxb\vsplit\curr@nfbox@W@ll to 0.5\textheight
526     \setbox\@outputbox\vbox\bgroup
527       \boxmaxdepth \@maxdepth
528       \box\@tempboxa
529       \nointerlineskip
530       \box\@tempboxb
531       \vfill
532     \egroup
533   \fi
534   \global\ysize\textheight
535   \global\@colht\textheight
536   \@outputpage
537   \@firstcolumntrue
538 }

```

`\nf@makecol` This macro tries to make one column of text. If successful, it puts first column into temporary storage, and outputs the page when or if the second column is ready.

When we start `\nf@makecol`, `\@colht` already reflects possible wide nonfloats. This to get `\@colroom`, we need to take into account only the narrow ones

```

539 \def\nf@makecol{%
540   \global\@colroom\@colht
541   \ifdim\ht\curr@nfbox@T@uc>0.5\baselineskip
542     \global\@colroom=0pt
543   \fi
544   \ifdim\ht\curr@nfbox@S@uc>0.5\baselineskip
545     \global\advance\@colroom by -0.5\textheight
546   \fi
547   \ifdim\ht\curr@nfbox@S@lc>0.5\baselineskip
548     \global\advance\@colroom by -0.5\textheight
549   \fi

```

Now there could be two cases. If `\@colroom` is small, we fill the column with the non-floats only. Otherwise we have a “mixed” column with both text and nonfloats.

```

550   \ifdim\@colroom<0.5\baselineskip
551     \nf@makenfcol
552   \else
553     \nf@makemixedcol
554   \fi}

```

`\nf@makenfcol` This macro outputs a column with only non-floats. If it is called, we already know

that the narrow non-floats would fill the column, so we do not do any additional checks.

```

555 \def\nf@makenfcol{%
556   \unvbox\@cclv
557   \penalty\outputpenalty
558   \ifdim\@colht>0.9\textheight % one tall or two squares
559     \ifdim\ht\curr@nfbox@T@uc>0.5\baselineskip
560       \setbox\@outputbox\vbox\bgroup
561       \boxmaxdepth \@maxdepth
562       \vsplit \curr@nfbox@T@uc to \textheight
563       \egroup
564     \else
565       \setbox\@outputbox\vbox\bgroup
566       \boxmaxdepth \@maxdepth
567       \vsplit\curr@nfbox@S@uc to 0.5\textheight
568       \nointerlineskip
569       \vsplit\curr@nfbox@S@lc to 0.5\textheight
570       \egroup
571     \fi
572   \else % one square
573     \ifdim\ht\curr@nfbox@S@uc>0.49\textheight
574       \setbox\@outputbox\vsplit \curr@nfbox@S@uc to 0.5\textheight
575     \else
576       \setbox\@outputbox\vsplit \curr@nfbox@S@lc to 0.5\textheight
577     \fi
578   \fi
579   \nf@opcol
580 }

```

`\nf@makemixedcol` This macros used when we have a mix of text with nonfloats (or possibly just text).

We check whether the page builder has the right idea about the text size; if not, we return from the output routine

```

581 \def\nf@makemixedcol{%
582   \ifdim\@colroom=\vsize
583     \nf@makemixedcol@
584   \else
585     \global\vsize=\@colroom
586     \unvbox\@cclv
587     \penalty\outputpenalty
588   \fi}

```

`\nf@makmixedcol@` And now the real work of `\nf@makemixedcol@`

```

589 \def\nf@makemixedcol@{%
590   \ifvoid\footins
591     \setbox\@outputbox \box \@cclv
592   \else
593     \setbox\@outputbox \vbox {%
594       \boxmaxdepth \@maxdepth

```

```

595      \unvbox \@cclv
596      \vskip \skip\footins
597      \color@begingroup
598      \normalcolor
599      \footnoterule
600      \unvbox \footins
601      \color@endgroup
602      }%
603  \fi
604  \ifdim\ht\curr@nfbox@S@uc>0.49\textheight
605      \setbox\@tempboxa\vsplit\curr@nfbox@S@uc to 0.5\textheight
606      \setbox\@outputbox \vbox
607      \bgroup
608      \box\@tempboxa
609      \nointerlineskip
610      \box\@outputbox
611      \egroup
612  \fi
613  \ifdim\ht\curr@nfbox@S@lc>0.49\textheight
614      \setbox\@tempboxa\vsplit\curr@nfbox@S@lc to 0.5\textheight
615      \setbox\@outputbox \vbox
616      \bgroup
617      \box\@outputbox
618      \nointerlineskip
619      \box\@tempboxa
620      \egroup
621  \fi
622  \nf@opcol}

```

\nf@opcol This is like the standard L^AT_EX \@outputdblcol, but with the treatment of wide nonfloats.

```

623 \def\nf@opcol{%
624   \if@firstcolumn
625     \global\@firstcolumnfalse
626     \global\setbox\@leftcolumn\box\@outputbox
627   \else
628     \global\@firstcolumntrue
629     \ifdim\ht\curr@nfbox@W@ul>0.5\baselineskip
630       \setbox\@tempboxa\vsplit \curr@nfbox@W@ul to 0.5\textheight
631     \else
632       \setbox\@tempboxb\box\@tempboxa
633     \fi
634     \setbox\@outputbox \vbox\bgroup
635     \box\@tempboxa
636     \nointerlineskip
637     \hb@xt@\textwidth {%
638       \hb@xt@\columnwidth {%
639         \box\@leftcolumn \hss}%
640     \hfil
641     {\normalcolor\vrule \@width\columnseprule}%

```

```

642         \hfil
643         \hb@xt@\columnwidth {%
644             \box\@outputbox \hss}%
645     }%
646 \egroup
647 \ifdim\ht\curr@nfbox@W@ll>0.5\baselineskip
648     \setbox\@tempboxa\vsplit \curr@nfbox@W@ll to 0.5\textheight
649     \setbox\@outputbox\vbox\bgroup
650         \box\@outputbox
651         \nointerlineskip
652         \box\@tempboxa
653     \egroup
654 \fi
655 \@outputpage
656 \global\size\textheight
657 \global\@colht\textheight
658 \global\@colroom\textheight
659 \fi}

```

`\standard@clearpage` The usual `\clearpage` flushes the floats. We keep it in `\standard@clearpage`

```

660 \let\standard@clearpage\clearpage

```

`\clearpage` Now we can define `\clearpage` to take care of the mode:

```

661 \def\clearpage{%
662     \if@twocolumn
663         \nf@clearpage
664     \else
665         \standard@clearpage
666 \fi}

```

`\nf@totalheight` The total height of all non-floats

```

667 \def\nf@totalheight{\dimexpr(
668     \ht\nfbox@S@UL+
669     \ht\nfbox@S@UR+
670     \ht\nfbox@S@LL+
671     \ht\nfbox@S@LR+
672     \ht\nfbox@T@UL+
673     \ht\nfbox@T@UR+
674     \ht\nfbox@W@UL+
675     \ht\nfbox@W@LL+
676     \ht\nfbox@B@UL+
677     \ht\nfbox@S@ul+
678     \ht\nfbox@S@ur+
679     \ht\nfbox@S@ll+
680     \ht\nfbox@S@lr+
681     \ht\nfbox@T@ul+
682     \ht\nfbox@T@ur+
683     \ht\nfbox@W@ul+
684     \ht\nfbox@W@ll+
685     \ht\nfbox@B@ul)}

```

`\nf@clearpage` We keep ejecting pages until get rid of nf stuff

```
686 \def\nf@clearpage{%
687   \write\m@ne{%
688     \if@firstcolumn
689       \ifdim\dimexpr(\pagetotal+\nf@totalheight)>\baselineskip
690         \leavevmode
691         \null\vfill\newpage
692         \null\vfill\newpage
693       \fi
694     \else
695       \leavevmode
696       \null\vfill\newpage
697     \fi
698     \ifdim\nf@totalheight>\baselineskip
699     \nf@clearpage\fi
700 }
```

`\clearspread` This is like `\cleardoublepage`, but with the logic inverted:

```
701 \def\clearspread{\clearpage\ifodd\c@page
702   \hbox{}\newpage\if@twocolumn\hbox{}\newpage\fi\fi\@firstcolumntrue}
```

We need to clear everything at the end

```
703 \AtEndDocument{\if@twocolumn
704   \ifdim\nf@totalheight>\baselineskip
705   \null\vfill\clearpage\fi
706 \fi}
```

3.12 Sectioning

`\if@mainmatter` This is used to check whether we are at main matter

```
707 \newif\if@mainmatter
```

`\frontmatter` We want Arabic numbers for front matter:

```
708 \def\frontmatter{%
709   \pagestyle{frontmatterpagestyle}%
710   \onecolumn\@mainmatterfalse}
```

`\mainmatter` We want Arabic numbers for main matter:

```
711 \def\mainmatter{\loadgeometry{standard}\onecolumn
712   \@mainmattertrue}
```

`\tocdepth` Only sections and up are allowed in TOC:

```
713 \setcounter{tocdepth}{1}
```

`\secnumdepth` Only the parts are numbered in our setup:

```
714 \setcounter{secnumdepth}{-1}
```

`\thepart` And the parts are numbered using Arabic numbers:

```
715 \renewcommand \thepart {\@arabic\c@part}
```

`\c@fao@partnum` To draw the blobs in part color in the proper position, we need to associate them with parts. However, some parts are numbered, some are not. The macro `\fao@partnum` keeps the current part number counted continuously from the beginning to end.

```
716 \newcounter{fao@partnum}
717 \setcounter{fao@partnum}{0}
```

`\fao@currentpartnum` The current value of `\fao@partnum` used in TOC:

```
718 \def\fao@currentpartnum{0}
```

`\part` The largest partition in the book

```
719 \renewcommand\part{%
720   \secdef\@part\@spart}
```

`\EndPartIntro` This command switches off the special formatting of part pages:

```
721 \def\EndPartIntro{\clearpage
722 \end{adjmulticols}\clearspread\twocolumn\normalcolor
723   \pagestyle{standardpagestyle}}
```

`iconfill` Fill a line with the icons of increasing size. The parameters are the initial size, length of the strip and the intensity of the background

```
724 \def\@maxpart{1}
725 \def\iconfill#1#2#3{%
726   \expandafter\ifx\csname @icon@1\endcsname\relax\strut\else
727   \@tempcnta=1
728   \setbox\@tempboxa=\hbox{}%
729   \loop
730     \@tempdima=#1
731     \setbox\@tempboxa=\hbox{\unhbox\@tempboxa
732       \colored@icon@fg[width=\@tempdima]{\csname
733         @icon@the\@tempcnta\endcsname}\#3}\hspace{0.3\@tempdima}}%
734     \advance\@tempcnta by 1\relax
735     \ifnum\@tempcnta>\@maxpart\relax\@tempcnta=1\fi
736     \ifdim\wd\@tempboxa>\#2\else\repeat
737     \unhbox\@tempboxa
738     \fi}
```

`\currenticonfill` Several iterations of the current icon with increasing sizes. The parameters are the initial size, length and the intensity of the background.

```
739 \def\currenticonfill#1#2#3{%
740   \expandafter\ifx\csname @icon@\thepart\endcsname\relax\strut\else
741   \setbox\@tempboxa=\hbox{}%
742   \@tempdima=#1
743   \loop
744     \@tempdima=1.44\@tempdima
745     \setbox\@tempboxa=\hbox{\unhbox\@tempboxa
746       \colored@icon@fg[width=\@tempdima]{\csname
747         @icon@\thepart\endcsname}\#3}\hspace{0.2\@tempdima}}%
```

```

748 \ifdim\wd\@tempboxa>#2\else\repeat
749 \unhbox\@tempboxa
750 \fi}

```

\@part This is the actual part making macro.

```

751 \def\@part[#1]#2{%
752   \clearspread
753   \onecolumn
754   \clearspread
755   \selectcolor
756   \selecticon
757   \color{@bgcolor}%
758   \rowcolors{2}{@bgcolor!10}{}%
759   \pagestyle{partpagestyle}%
760   \refstepcounter{part}%
761   \addcontentsline{toc}{part}{\thepart\hspace{1em}#1}%
762   \protected@write\@auxout{%
763     {\string\newicon{\thepart}{\currenticon}
764       \string\gdef\string\@maxpart{\thepart}}%
765   \def\@partpagepicture{%
766     \put(-15,-500){\rotatebox{30}{%
767       \iconfill{1.2cm}{0.4\textwidth}{20}%
768       \currenticonfill{1.2cm}{0.6\textwidth}{20}}}%
769     \put(40,-550){\rotatebox{30}{%
770       \iconfill{1.2cm}{1.2\textwidth}{100}}}%
771     \put(40,-600){\rotatebox{30}{%
772       \iconfill{1.2cm}{1.2\textwidth}{20}}}%
773   }
774   \markboth{#1}{#1}%
775   \null
776   \newpage
777   \def\@partpagepicture{\put(160,-180){\rotatebox{30}{\iconfill{1.2cm}{13.5cm}{20}}}%
778   \gdef\@partpagepicture{}}
779   {\interlinepenalty \@M
780     \vspace*{80\p@}
781     \captionfamily
782     \fontsize{240\p@}{240\p@}\selectfont\raggedright\thepart~%
783     \parbox[b]{0.8\textwidth}{\fontsize{64\p@}{72\p@}\selectfont
784       \raggedright\null#2\par}\par\vskip80\p@
785   }\par\normalcolor
786   \begin{adjmulticols}{1}{44mm}{0mm}}

```

\@currentsymbol the symbol for the next unnumbered part

```

787 \define@choicekey*{fao}{symbol}[\val\nr]%
788 {righttriangle,square,rightsemicircle}%
789 \ifcase\nr\relax
790   \gdef\@currentsymbol{(0,0) -- (1ex,0) -- (1ex,1ex) -- cycle}%
791 \or
792   \gdef\@currentsymbol{(0,0) -- (1ex,0) -- (1ex,1ex) -- (0,1ex) --
793     cycle}%

```



```

794 \or
795 \gdef\@currentsymbol{(0,0) arc[start angle=90, end angle=-90, x
796 radius = 0.5ex, y radius = 0.5ex] -- cycle}%
797 \fi
798 }\ClassError{faosyb}{Bad symbol value \val}}
799 \faoset{symbol=square}

\@spart Unnumbered parts are only in the foreword
800 \def\@spart#1{%
801 \cleardoublepage
802 \loadgeometry{frontmatter}%
803 \pagestyle{spartpagestyle}%
804 \onecolumn
805 \selectcolor
806 \selecticon
807 \rowcolors{2}{@bgcolor!10}{}%
808 \phantomsection
809 \addcontentsline{toc}{spart}{\hspace{1em}#1}%
810 \makebox[0pt]{%
811 \raisebox{-\totalheight}%
812 [0pt][0pt]{\rotatebox{90}{\fontsize{9mm}{9mm}\selectfont
813 \captionfamily
814 \tikz\fill[color=@bgcolor]\@currentsymbol;\space
815 \color{gray}#1\strut}}%
816 \hspace*{50pt}}\par\vspace*{-\baselineskip}%
817 \vspace*{-\parskip}}

\sectionmark We do not want to have uppercase sections in the footers
818 \def\sectionmark#1{\markright{#1}}

\section New sections start on a recto page in one column mode and on a verso page in
two column mode
819 \renewcommand\section{\par\clearspread
820 \@startsection {section}{1}{\z@}%
821 {-1sp}%
822 {2.3ex \@plus .2ex}%
823 {\normalfont\Large\bfseries\raggedright
824 \color{@bgcolor}}

\subsection The subsection macro
825 \renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
826 {-1sp}%
827 {1.5ex \@plus .2ex}%
828 {\normalfont\large\bfseries\raggedright
829 \color{@bgcolor}}

```

3.13 Tables

\tablepages Long tables at the end of a part

```

830 \newenvironment{tablepages}{\onecolumn
831   \bgroup\narrowfamily\multicolsep=\z@
832   \vspace*{-2cm}%
833   \def\emph{\textsl}%
834   \begin{adjmulticols}{1}{-1.3cm}{-1.3cm}\centering\normalcolor}%
835   {\end{adjmulticols}\egroup}

\tablemph Some styles define \tablemph commands. Here we supply a stub
836 \AtBeginDocument{\providecommand{\tablemph}[1]{\emph{#1}}}

We define new column types for table headers:
837 \newcolumnntype{d}[1]{D{.}{.}{#1}}
838 \newcolumnntype{H}{>{\columncolor{\tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]}c}

P columnntype is much more complex. Basically we want a centered entry with
a parbox of the given width inside.:
839 \newcolumnntype{P}[1]{>{\columncolor{\tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]}%
840   \@fao@Pentry{#1}}c<{\end@fao@Pentry}}

\@fao@Pentry Since \parbox needs “real” braces to delimit the argument, we use this trick. Note
\hspace{Opt} to allow TEX to hyphenate the first word.
841 \def\@fao@Pentry#1#2\end@fao@Pentry{%
842   \parbox[t]{#1}{\centering\strut\hspace{\z@}#2\strut}}

Same with C entry:
843 \newcolumnntype{C}[1]{>{\columncolor{\tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]}%
844   \@fao@Centry{#1}}c<{\end@fao@Centry}}

\@fao@Centry This macro is similar to \@fao@Pentry, but with different way to set the width of
the \parbox:
845 \def\@fao@Centry#1#2\end@fao@Centry{%
846   \settowidth{\@tempdima}{\$-99.999\$}%
847   \@tempdima=#1\@tempdima\relax
848   \parbox[t]{\@tempdima}{\centering\strut\hspace{\z@}#2\strut}}

\LT@makecaption This macro produces the caption for the long tables. We redefine it to get the
tables in the way specified by the designer
849 \def\LT@makecaption#1#2#3{%
850   \LT@mc\LT@cols {#1}{\cellcolor{white}}%
851   \rlap{\fcolorbox{white}{\tableheadcolor}{\normalsize
852     \captionfamily\large\strut
853     \textcolor{white}{#1\MakeUppercase{#2}: }#3}}}%
854   \begin{picture}(0,0)%
855     \put(.5,-7){\color{\bgcolor}%
856       \begin{tikzpicture}[baseline=(current bounding box.north)]
857         \fill (0,0) -- (\nf@trianglebase,0) --
858           (.5\nf@trianglebase,-\nf@trianglebase) -- cycle;
859       \end{tikzpicture}}
860   \end{picture}\normalcolor
861   \raisebox{-17pt}{\strut}}}
```

3.14 Front Matter

<code>\@generic</code>	<p>This is a generic macro with two parameters: name of the toc and file extension</p> <pre> 862 \def\@generic#1#2{\clearpage\loadgeometry{standard}% 863 \pagestyle{frontmatterpagestyle}\onecolumn 864 {\fontsize{48pt}{48pt}\selectfont 865 \captionfamily\color{black!40}#1\par}\@mkboth{#1}{#1}\bigskip 866 \@starttoc{#2}}</pre>
<code>\tableofcontents</code>	<p>Our table of contents</p> <pre> 867 \renewcommand\tableofcontents{\clearpage\loadgeometry{standard}% 868 \pagestyle{frontmatterpagestyle}\onecolumn 869 \@mkboth{\contentsname}{\contentsname}% 870 \makebox[0pt][l]{\fontsize{24pt}{32pt}\selectfont \bfseries 871 \color{black!70}\MakeUppercase{\contentsname}\space}% 872 \par\vspace{-2\baselineskip}\vspace{-\parskip}% 873 \@starttoc{toc}}</pre>
<code>\@tocpartskip</code>	<p>This is the skip between the parts in TOC:</p> <pre> 874 \newlength{\@tocpartskip} 875 \define@key{fao}{tocpartskip}{\setlength{\@tocpartskip}{#1}} 876 \faoset{tocpartskip}=\z@</pre>
<code>\@fao@tocrule@start</code>	<p>The start of the current TOC colored rule</p> <pre> 877 \newdimen\@fao@tocrule@start</pre>
<code>\@fao@tocrule@height</code>	<p>The height of the current TOC rule</p> <pre> 878 \newdimen\@fao@tocrule@height</pre>
<code>\@draw@tocrule@part</code>	<p>Drawing the toc rule for a part</p> <pre> 879 \def\@draw@tocrule@part{\@fao@tocrule@height=\pagetotal 880 \protected@write\@auxout{}\string\@fao@partblobbottom{\@fao@currentpartnum}{\the\@fao@tocrule@height}% 881 \advance\@fao@tocrule@height-\@fao@tocrule@start 882 \bgroup\parskip\z@ 883 \parbox[b][\z@]{\z@}{\hspace*{-15\p@}\color{\bgcolor}\rule{2\p@}{\@fao@tocrule@height}}% 884 \parbox[b][\z@]{\z@}{\hspace*{330\p@}% 885 \color{\bgcolor}\rule{41\p@}{\@fao@tocrule@height}}% 886 \par\vspace{-0.5\baselineskip}\egroup}</pre>
<code>\@draw@tocrule@section</code>	<p>Drawing the toc rule for a section</p> <pre> 887 \def\@draw@tocrule@section{\@fao@tocrule@height=\pagetotal 888 \protected@write\@auxout{}\string\@fao@partblobbottom{\@fao@currentpartnum}{\the\@fao@tocrule@height}% 889 \advance\@fao@tocrule@height-\@fao@tocrule@start 890 \advance\@fao@tocrule@height5\p@ 891 \bgroup\parskip\z@\small 892 \raisebox{\baselineskip}[\z@][\z@]{\parbox[b][\z@]{\z@}{\hspace*{-35\p@}\color{\bgcolor}\rule{2\p@}{\@fao@tocrule@height}}}% 893 \raisebox{\baselineskip}[\z@][\z@]{\parbox[b][\z@]{\z@}{\hspace*{310\p@}% 894 \color{\bgcolor}\rule{41\p@}{\@fao@tocrule@height}}}% 895 \par\vspace{-\baselineskip}\egroup}</pre>

`\l@part` This prints the part in TOC:

```
896 \renewcommand*\l@part[2]{%
897   \ifnum \c@tocdepth >-2\relax
898     \addpenalty{-\@highpenalty}%
899     \setlength\@tempdima{3em}%
900     \addvspace{\@tocpartskip}%
901     \begingroup
```

We store the current vertical position of the page into `\@fao@tocrule@start`

```
902 %       \addvspace{-2pc}\par
903       \@fao@tocrule@start=\pagetotal
904       \protected@write\@auxout{}\string\@fao@partblobtop{\@fao@currentpartnum}{\the\@fao@tocrule@start}%
905       \parindent \z@ \rightskip \@pnumwidth
906       \parfillskip -\@pnumwidth
907       \leftskip180\p@
908       {\leavevmode
909         \color{\bgcolor}\bfseries\partname\space#1:
910         \hfil \hb@xt@\@pnumwidth{\hss #2}}%
911       \par\@draw@tocrule@part
912       \nobreak
913       \global\@nobreaktrue
914       \everypar{\global\@nobreakfalse\everypar{}}%
915     \endgroup
916   \fi}
```

`\l@spart` This adds unnumbered part to TOC

```
917 \newcommand*\l@spart[2]{%
918   \ifnum \c@tocdepth >-2\relax
919     \addpenalty{-\@highpenalty}%
920     \setlength\@tempdima{3em}%
921     \begingroup
922     \@fao@tocrule@start=\pagetotal
923     \protected@write\@auxout{}\string\@fao@partblobtop{\@fao@currentpartnum}{\the\@fao@tocrule@start}%
924     \parindent \z@ \rightskip \@pnumwidth
925     \parfillskip -\@pnumwidth
926     \leftskip180\p@
927     {\leavevmode
928       \color{\bgcolor}\bfseries#1:
929       \hfil \hb@xt@\@pnumwidth{\hss #2}}%
930     \par\@draw@tocrule@part
931     \nobreak
932     \global\@nobreaktrue
933     \everypar{\global\@nobreakfalse\everypar{}}%
934   \endgroup
935   \fi}
```

`\l@section` This prints the section in TOC:

```
936 \renewcommand*\l@section[2]{%
937   \ifnum \c@tocdepth >-2\relax
938     \addpenalty{-\@highpenalty}%
```

```

939 \setlength\@tempdima{3em}%
940 \begingroup
941 \small
942 \@fao@tocrule@start=\pagetotal
943 \leftskip200\p@\relax\parskip\z@
944 \parindent \z@ \rightskip \@pnumwidth
945 \parfillskip -\@pnumwidth
946 {\leavevmode\small\strut
947 #1\hfil \hb@xt@\@pnumwidth{\hss #2}}\par\@draw@tocrule@section
948 \nobreak
949 \global\@nobreaktrue
950 \everypar{\global\@nobreakfalse\everypar{}}%
951 \endgroup
952 \fi}

```

`\appendix` We do not draw colored rules in the TOC part of the appendix:

```

953 \renewcommand\appendix{%
954 \bookmarksetup{startatroot}%
955 \addtocontents{toc}{\string\let\string\@draw@tocrule@part\string\relax
956 \string\let\string\@draw@tocrule@section\string\relax}}

```

We use special formatting of metadata in the lists of... This requires explicit `\pars` at the end:

```

957 \AtEndDocument{%
958 \immediate\write\@auxout{\string\@writefile{loc}{\string\par}}%
959 \immediate\write\@auxout{\string\@writefile{lot}{\string\par}}%
960 \immediate\write\@auxout{\string\@writefile{lom}{\string\par}}}

```

`\nf@dottedtocline` This is like the standard `\dottedtocline`, but with colored page numbers

```

961 \def\nf@dottedtocline#1#2#3#4#5{%
962 \ifnum #1>\c@tocdepth \else
963 \vskip \z@ \@plus.2\p@
964 {\leftskip #2\relax \rightskip \@tocrmarg \parfillskip -\rightskip
965 \parindent #2\relax\@afterindenttrue
966 \interlinepenalty\@M
967 \leavevmode
968 \@tempdima #3\relax
969 \advance\leftskip \@tempdima \null\nobreak\hskip -\leftskip
970 {#4}\nobreak
971 \leaders\hbox{$\m@th
972 \mkern \dotsep mu\hbox{.}\mkern \dotsep
973 mu$}\hfill
974 \nobreak
975 \hb@xt@\@pnumwidth{\hfil\normalfont\color{@bgcolor}#5}%
976 \par}%
977 \fi}

```

`\l@nonfloat` The generic listing of a nonfloat in a list

```

978 \newcommand*\l@nonfloat{\nf@dottedtocline{1}{\z@}{2.3em}}

```

<code>\numberline</code>	The number in table of contents
	<pre> 979 \def\numberline#1{% 980 \raisebox{\z@}{\z@}{\z@}{% 981 \fcolorbox{bgcolor}{@bgcolor}{% 982 \hb@xt@{\tempdima{\color{white}#1\strut\hfil}}}{\hspace{2em}} </pre>
<code>\listofmaps</code>	Our list of maps
	<pre> 983 \newcommand\listofmaps{\@generic toc{\listofmapsname}{lom}} </pre>
<code>\l@map</code>	Entry in the list of maps
	<pre> 984 \let\l@map\l@nonfloat </pre>
<code>\listoftables</code>	Our list of tables
	<pre> 985 \renewcommand\listoftables{\@generic toc{\listtablename}{lot}} </pre>
<code>\l@table</code>	Entry in the list of tables
	<pre> 986 \let\l@table\l@nonfloat </pre>
<code>\listofcharts</code>	Our list of charts
	<pre> 987 \newcommand\listofcharts{\@generic toc{\listofchartsname}{loc}} </pre>
<code>\l@chart</code>	Entry in the list of charts
	<pre> 988 \let\l@chart\l@nonfloat </pre>

3.15 Metadata

<code>\metadatassection</code>	The section for metadata:
	<pre> 989 \newcommand\metadatassection[1]{\clearspread\twocolumn\normalcolor 990 \section{#1}} </pre>
<code>@indicatorsquarecolor</code>	The color for the little squares in the indicator section
	<pre> 991 \define@key{fao}{indicatorsquarecolor}{% 992 \colorlet{@indicatorsquarecolor}[cmyk]{#1}} 993 \faoset{indicatorsquarecolor=gray} </pre>
<code>\metadata</code>	This starts the metadata section. The commands inside are local to the metadata.
	<pre> 994 \def\metadata#1{\bgroup 995 \def\meta@key{@@@}% </pre> <p>Now we define the commands for metadata:</p>
<code>\key</code>	This sets the key:
	<pre> 996 \def\key##1{\NR@getttitle{##1}\phantomsection\label{##1}% 997 \gdef\meta@key{##1}} </pre>
<code>\source</code>	This typesets the source:
	<pre> 998 \def\source##1{\textbar\,\emph{\bfseries Source: }##1. }% </pre>

```

\owner This typesets the owner:
999 \def\owner##1{\textbar\,\emph{\bfseries Owner: }##1. }%

1000 \begin{list}{\topsep8\p@\labelwidth\z@
1001 \labelsep\z@itemindent\z@parsep0.4ex plus 0.5ex minus
1002 0.2ex\relax\listparindent\z@\leftmargin\z@\rightmargin\z@
1003 \partopsep\z@}%
1004 \item{\bfseries{\color{@indicatorsquarecolor}$\blacksquare$}~#1\par\penalty10000}}

\endmetadata This closes the environment:
1005 \def\endmetadata{%
1006 \expandafter\ifx\csname
1007 metaback@meta@key\endcsname\relax
1008 \else
1009 \textbar\,\emph{\bfseries Referenced in: }
1010 \csname metaback@meta@key\endcsname
1011 \fi
1012 \end{list}\egroup}

\refMetadata The way we actually reference the metadata:
1013 \def\refMetadata#1{%
1014 \ifx\@capytype\@undefined\def\@capytype{table}\fi
1015 \if@filesw
1016 \immediate\write\@mainaux{%
1017 \string\faometaback{#1}{\@capytype}{\csname the\@capytype\endcsname}{\thepage}{\@currentpage}}
1018 \fi
1019 }

\faometaback This reads the backreferences to metadata and prepares the the list. The argu-
ments are: key, float type, number of float, page and hyperref
1020 \def\faometaback#1#2#3#4#5{%
1021 \expandafter\ifx\csname metaback@#1\endcsname\relax
1022 \expandafter\gdef\csname metaback@#1\endcsname{%
1023 \hyper@linkstart{link}{#5}#2~#3\hyper@linkend}%
1024 \else
1025 \expandafter\g@addto@macro\csname metaback@#1\endcsname{,
1026 \hyper@linkstart{link}{#5}#2~#3\hyper@linkend}%
1027 \fi}

```

3.16 Further Reading

`\fitemize` This is the special version of `itemize` for further reading pages. Basically it is a patched kernel version.

```

1028 \def\fitemize{%
1029 \ifnum \@itemdepth >\thr@@\@toodeep\else
1030 \advance\@itemdepth\@ne
1031 \edef\@itemitem{labelitem\romannumeral\the\@itemdepth}%
1032 \expandafter
1033 \list

```

```

1034      \csname\@itemitem\endcsname
1035      {\def\makelabel##1{{##1}\space}\parskip\z@\topsep\z@
1036       \itemsep\z@\labelwidth\z@\parsep\z@\partopsep\z@
1037       \leftmargin\z@\labelsep\z@}%
1038 \fi}

\endfitemize This is standard:
1039 \let\endfitemize =\endlist

\freading This is the “Further Reading environment”
1040 \newenvironment{freading}{%
1041   \bgroup
1042   \fboxsep=5\p@
1043   \let\itemize=\fitemize
1044   \let\enditemize=\endfitemize
1045   \setbox\@tempboxa=\hbox\bgroup
1046   \begin{minipage}{0.9\columnwidth}\parskip\z@
1047   {\color{\@bgcolor}\bfseries
1048     \makebox[\z@][r]{%
1049       \tikz\fill[color=@bgcolor] (0,0) -- (1.5ex,0) -- (1.5ex, 1.5ex) --
1050       cycle;\hspace{5\p@}}}%
1051   Further reading\strut\par}}{\end{minipage}\egroup
1052   \par\vspace{12mm}%
1053   \hspace{\dimexpr(0.1\columnwidth-10\p@)}%
1054   \fcolorbox{\@bgcolor!10}{\@bgcolor!10}{\box\@tempboxa}%
1055   \egroup}

```

3.17 Publications

`\@publicationskip` Skip between the publications. By default `\medskip`:

```

1056 \newlength{\@publicationskip}
1057 \define@key{fao}{publicationskip}{\setlength{\@publicationskip}{#1}}
1058 \faoset{publicationskip=6pt plus 2pt minus 2pt}

```

`\@publicationparskip` Paragraph skip between the publications.

```

1059 \newlength{\@publicationparskip}
1060 \define@key{fao}{publicationparskip}{\setlength{\@publicationparskip}{#1}}
1061 \faoset{publicationparskip=6pt plus 6pt minus 4pt}

```

`\publication` This typesets one publication:

```

1062 \newenvironment{publication}[2][\%
1063   \gdef\@pub@cover{#1}%
1064   \par
1065   \raisebox{\dimexpr(\baselineskip-\totalheight)}[0pt]{%
1066   \ifx\@pub@cover\empty\rule{0.4\columnwidth}{\z@}\else
1067     \includegraphics[width=0.4\columnwidth, angle=5,
1068     origin=c]{\@pub@cover}\fi}
1069   \hspace{0.1\columnwidth}%
1070   \begin{minipage}[t]{0.49\columnwidth}%

```



```

1071 \setlength\parskip{\@publicationparskip}%
1072 {\bfseries\large\color{@bgcolor}#2\par}
1073 \long\def\pDescription##1{\par##1\par}%
1074 \def\pEdition##1##2{\par##1: ##2\par}%
1075 \def\pCycle##1{\par Publication cycle: ##1\par}%
1076 \def\pWeb##1{\par \raggedright Webpage: \url{##1}\par}}%
1077 {\end{minipage}}%
1078 \par
1079 \vspace{\@publicationskip}}

\@resourcesicon he icon for resources
1080 \define@key{fao}{resourcesicon}{\gdef\@resourcesicon{#1}}
1081 \faoset{resourcesicon={}}

\@resourcesname he icon for resources
1082 \define@key{fao}{resourcesname}{\gdef\@resourcesname{#1}}
1083 \faoset{resourcesname={Key Resources}}

\KeyResources ere we start resources section
1084 \def\KeyResources{\clearpage\phantomsection
1085 \ifx\@resourcesicon\@empty\else
1086 \def\@partpagepicture{%
1087 \put(190,-36){\colored@icon[width=1.2cm]{\@resourcesicon}}%
1088 \gdef\@partpagepicture{}}
1089 \fi
1090 \addcontentsline{toc}{section}{\@resourcesname}%
1091 \ifx\@resourcesicon\@empty\else
1092 \hspace*{1.3cm}%
1093 \fi
1094 {\color{@bgcolor}\Large\bfseries\raggedright\@resourcesname\par
1095 \vspace{2.3ex \@plus.2ex}}

```

3.18 Subscripts

```

\textsubscript This follows standard LATEX:
1096 \DeclareRobustCommand*\textsubscript[1]{%
1097 \@textsubscript{\selectfont#1}}
1098 \def\@textsubscript#1{%
1099 {\m@th\ensuremath{_{\mbox{\fontsize\sfontsize\z@#1}}}}}

```

3.19 LyX code

```

\lyxlist It seems Lyx wants this:
1100 \newenvironment{lyxlist}[1]
1101 {\begin{list}{#1}
1102 {\settowidth{\labelwidth}{#1}
1103 \setlength{\leftmargin}{\labelwidth}
1104 \addtolength{\leftmargin}{\labelsep}

```

```

1105 \renewcommand{\makelabel}[1]{##1\hfil}}
1106 {\end{list}}

```

3.20 Bibliography

`\thebibliography` Our bibliography is a section rather than a chapter.

```

1107 \renewenvironment{thebibliography}[1]
1108     {\section{\bibname}%
1109      \list{\@biblabel{\@arabic\c@enumiv}}%
1110           {\settowidth\labelwidth{\@biblabel{#1}}%
1111           \leftmargin\labelwidth
1112           \advance\leftmargin\labelsep
1113           \@openbib@code
1114           \usecounter{enumiv}%
1115           \let\p@enumiv\@empty
1116           \renewcommand\theenumiv{\@arabic\c@enumiv}}%
1117      \sloppy
1118      \clubpenalty4000
1119      \@clubpenalty \clubpenalty
1120      \widowpenalty4000%
1121      \sfcode'\.\@m}
1122 { \def\@noitemerr
1123   {\@latex@warning{Empty 'thebibliography' environment}}%
1124   \endlist}

```

3.21 The final word

```

1125 \setbgcolor{gray}\selectcolor
1126 \loadgeometry{standard}%
1127 \pagestyle{empty}
1128 \normalsize\normalfont
1129 </class>

```

References

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Change History

1.3		\@part: Rewrote	33	\@part: Rewrote using tikz	18
1.4		\@part: Changed fonts	33	General: Added Further Reading from the old code	39
2013/12/16		\@currentsymbol: T	32	Added metadata from the old code	38
v0.2		\@part: Changed formatting	32	Added Pubs from the old code	40
		iconfill: Rewrote	31	partpagestyle: Changed position of footers	18
		\EndPartIntro: Deleted \clearspread	31	Rewrote using tikz	18
		\newicon: Added macro	16	\EndPartIntro: Added \normalcolor	31
		\section: Redefined	33	\evenfootmark: Introduced macro	16
v0.3		\@generic: Added macro	35	\frontmatter: Deleted change in the pagenumbers	30
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		\EndPartIntro: Restored		\mainmatter: Deleted change in the pagenumbers	30
		\clearspread	31	\metadata: Rewrote	38
		\l@chart: Added macro	38	\metadatassection: Added macro	38
		\l@map: Added macro	38	\nf@opcol: Typo corrected	28
		\l@nonfloat: Added macro	37	\oddfootmark: Introduced macro	16
		\l@table: Added macro	38	\subsection: Redefined	33
		\listofcharts: Added macro	38	\tableofcontents: Rewrote	35
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		\newnon@float: Added writing extensions to the list of extensions	20	\@part: Changed margins for intro	32
		\numberline: Added macro	38	Changed pictures	32
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		iconfill: Rewrote	31	\nf@captionheight: Changed size	19
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		\@part: Changed the way the icons are displayed	32		

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\tableofcontents: Added geometry change	35	\publication: Swapped picture and description	40
standardpagestyle: Increased sizes	17	standardpagestyle: Changed bottom margins	17
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