

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:

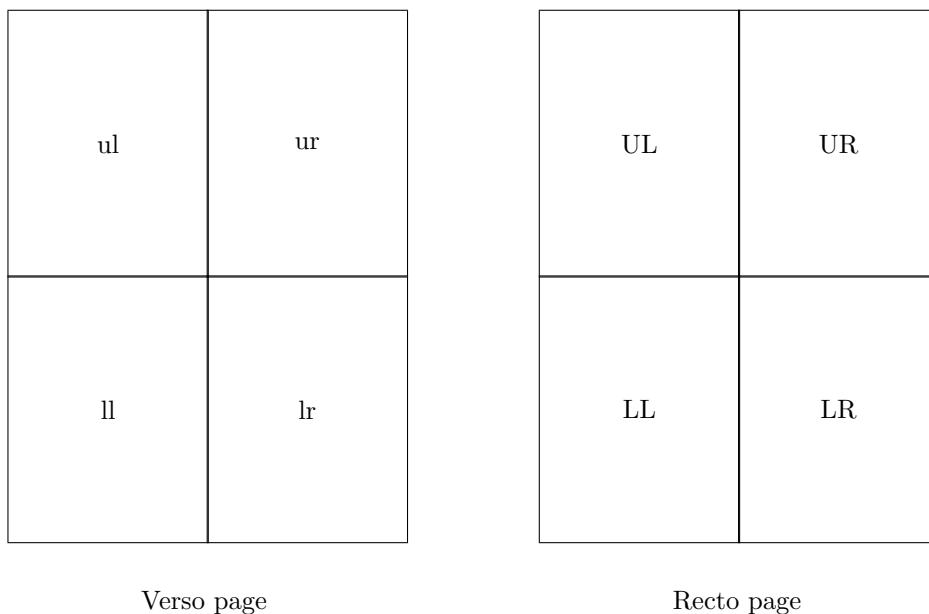


Figure 1: A Spread

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}

```

`\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}{\@issuumodetrue}
```

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,cmyk]{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@issuume
42 \RequirePackage{issuulinks}
43 \fi

```

Options for the hyperref package are set as follows:

```

44 \ifprint
45 \hypersetup{breaklinks,colorlinks=false,pdfborder=0 0 0,
46   pdfauthor={FAO},
47   pdfsubject={Statistical Yearbook of the Food And Agricultural Organization for the United Nations},
48   pdftitle={Statistical Yearbook of the Food And Agricultural Organization for the United Nations},
49   pdfkeywords={FAO, Food Security, Undernourishment, Sustainable agriculture},
50   pdfpagelayout=TwoColumnLeft,
51   pdfnewwindow=true
52 }
53 \else
54 \hypersetup{breaklinks,colorlinks=false,pdfborder=0 0 0,
55   pdfauthor={FAO},
56   pdfsubject={Statistical Yearbook of the Food And Agricultural Organization for the United Nations},
57   pdftitle={Statistical Yearbook of the Food And Agricultural Organization for the United Nations},
58   pdfkeywords={FAO, Food Security, Undernourishment, Sustainable agriculture},
59   pdfpagelayout=TwoColumnRight,
60   pdfnewwindow=true
61 }
62 \fi

```

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).

```

63 \def\@pctchar{\expandafter\@gobble\string\%}
64 \def\@bchar{\expandafter\@gobble\string\}
65 \immediate\pdfobj stream attr{/N 4} file{FOGRA39L.icc}
66 \edef\OBJ@CVR{\the\pdfobj}
67 \pdfcatalog{/OutputIntents [ <<
68   /Type/OutputIntent
69   /S/GTS_PDFX
70   /OutputCondition (FOGRA39)
71   /OutputConditionIdentifier (FOGRA39 \bchar{ISO Coated v2
72     300\pctchar\space \bchar{ECI\bchar}\bchar})
73   /DestOutputProfile \OBJ@CVR\space 0 R
74   /RegistryName(http://www.color.org)
75   >> ]}

```

`\LettrineFontHook` We want the drop caps to have @bgcolor
`76 \renewcommand\LettrineFontHook{\color{@bgcolor}}`

`\DefaultFindent` The distance between the dropped capital and the text
`77 \setlength\DefaultFindent{2pt}`

3.4 Key-Value Interface

`\faoset` We define the family `fao` for our keys:
`78 \def\faoset#1{\setkeys{fao}{#1}}`

One of the important keys is `year`
`79 \define@key{fao}{year}{\gdef\fao@year{#1}}`
`80 \faoset{year=20XX}`

3.5 Fonts

We use `arev` for mathematics:
`81 \RequirePackage{arevmath}`

For body text we use PT Sans:
`82 \def\PTSans@scale{0.95}`
`83 \def\PTSansNarrow@scale{0.95}`
`84 \def\PTSansCaption@scale{0.95}`
`85 \renewcommand{\sfdefault}{PTSans-TLF}`
`86 \renewcommand{\familydefault}{\sfdefault}`
`87 \renewcommand{\bfdefault}{b}`

`\narrowfamily` We declare a new family, `\narrowfamily`:
`88 \DeclareRobustCommand\narrowfamily{\fontfamily{PTSansNarrow-TLF}\selectfont}`

`\textnarrow` And the matching `\textnarrow` command:
`89 \DeclareTextFontCommand{\textnarrow}{\narrowfamily}`

`\captionfamily` Same with `\captionfamily`:
`90 \DeclareRobustCommand\captionfamily{\fontfamily{PTSansCaption-TLF}\selectfont}`

`\textcaption` And the matching `\textcaption` command:
`91 \DeclareTextFontCommand{\textcaption}{\captionfamily}`

`\normalsize` The basic size is 9.6pt:
`92 \renewcommand\normalsize{%`
`93 \setfontsize\normalsize{9.6pt}{\@xipt}%`
`94 \abovedisplayskip 10\p@ \@plus2\p@ \@minus5\p@`
`95 \abovedisplayshortskip \z@ \@plus3\p@`
`96 \belowdisplayshortskip 6\p@ \@plus3\p@ \@minus3\p@`
`97 \belowdisplayskip \abovedisplayskip`
`98 \let\@listi\@listI}`
`99 \normalsize`

`\small` This is the small size:

```

100 \renewcommand\small{%
101   \@setfontsize\small\@ixpt{10}%
102   \abovedisplayskip 8.5\p@ \@plus3\p@ \@minus4\p@
103   \abovedisplayshortskip \z@ \@plus2\p@
104   \belowdisplayshortskip 4\p@ \@plus2\p@ \@minus2\p@
105   \def\@listif\leftmargin\leftmargini
106         \topsep 4\p@ \@plus2\p@ \@minus2\p@
107         \parsep 2\p@ \@plus\p@ \@minus\p@
108         \itemsep \parsep}%
109   \belowdisplayskip \abovedisplayskip}

```

We use `rm` style of URL:

```

110 \urlstyle{sf}

```

3.6 Margins and Paragraphing

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

```

\parskip 111 \setlength\parindent\z@
112 \setlength\parskip{6\p@ plus 6\p@ minus 4\p@}

```

We use `a4paper`.

```

113 \geometry{layout=a4paper,
114   left=5cm,right=3.5cm,bottom=2cm,top=76mm,
115   footskip=9mm, head=30mm, headsep=3mm,
116   columnsep=6mm, twoside}%
117 \savegeometry{frontmatter}
118 \geometry{layout=a4paper,
119   left=2cm,right=2cm,bottom=2cm,top=2.3cm,
120   footskip=9mm, head=30mm, headsep=3mm,
121   columnsep=6mm, twoside}%
122 \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

```

123 \AtBeginDocument{\ifprint
124   \AtBeginShipout{%
125     \AtBeginShipoutUpperLeftForeground{%
126       \color{black}%
127       \@tempdima=\Gm@layouthoffset
128       \@tempdimb=\Gm@layoutvoffset

```

```

129 \put(\@tempdima,-\@tempdimb+6\p@){\line(0,1){50}}%
130 \put(\@tempdima-6\p@,-\@tempdimb){\line(-1,0){50}}%
131 \advance\@tempdima by \Gm@layoutwidth
132 \put(\@tempdima,-\@tempdimb+6\p@){\line(0,1){50}}%
133 \put(\@tempdima+6\p@,-\@tempdimb){\line(1,0){50}}%
134 \advance\@tempdimb by \Gm@layoutheight
135 \put(\@tempdima,-\@tempdimb-6\p@){\line(0,-1){50}}%
136 \put(\@tempdima+6\p@,-\@tempdimb){\line(1,0){50}}%
137 \advance\@tempdima by -\Gm@layoutwidth
138 \put(\@tempdima-6\p@,-\@tempdimb){\line(-1,0){50}}%
139 \put(\@tempdima,-\@tempdimb-6\p@){\line(0,-1){50}}%
140 }}\fi}

```

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

```

141 \AtBeginDocument{\ifDraft
142   \AtBeginShipout{%
143     \AtBeginShipoutUpperLeft{%
144       \color{black!25}%
145       \@tempdima=\Gm@layouthoffset
146       \@tempdimb=\Gm@layoutvoffset
147       \advance\@tempdima by 0.2\Gm@layoutwidth
148       \advance\@tempdimb by 0.7\Gm@layoutheight
149       \put(\@tempdima,-\@tempdimb){%
150         \rotatebox{45}{%
151           \fontsize{6cm}{6cm}\selectfont
152           DRAFT}}}}\fi}

```

3.8 Setting Colors and Icons

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

```
153 \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:

```

154 \def\setbgcolor#1{\colorlet{@bgcolor@next}[cmyk]{#1}%
155   \@for\curr@ext:=\@toc@ext@list\do{%
156     \addtocontents{\curr@ext}{\string\colorlet{@bgcolor}[cmyk]{#1}}}%
157   \addtocontents{toc}{\string\colorlet{@bgcolor}[cmyk]{#1}}%
158   \gdef\fao@color@string{#1}}
159 \colorlet{@bgcolor@next}[cmyk]{white}

```

The key-value interface for the same command:

```
160 \define@key{fao}{bgcolor}{\setbgcolor{#1}}
```

And for separate setting of `@tableheadcolor`

```
161 \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 162 \def\selectcolor{\colorlet{@bgcolor}{@bgcolor@next}}%
              163 \colorlet{tableheadcolor}{@bgcolor}}
              164 \selectcolor

@tablebg The color for table pages
          165 \define@key{fao}{tablebg}{\colorlet{tablebg}[cmyk]{#1}}

\seticon Setting the next icon for the part
          166 \def\seticon#1{\gdef\next@icon{#1}}
          167 \define@key{fao}{icon}{\seticon{#1}}

\selecticon The actual icon change
\currenticon 168 \def\selecticon{\gdef\currenticon{\next@icon}}
              169 \def\next@icon{}

\newicon Define an icon #2 for the part #1
          170 \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
          171 \newcommand\colored@icon[2][\bgroup\fbboxsep=-1pt%
          172 \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
          173 \newcommand\colored@icon@fg[3][\bgroup\fbboxsep=-1p@%
          174 \fcolorbox{white}{@bgcolor!#3}{\includegraphics[#1]{#2}}\egroup}

```

3.9 Page Styles

`\evenfootmark` The mark on even pages

```

175 \def\evenfootmark#1{\gdef\@evenfootmark{#1}}
176 \evenfootmark{\textbf{FAO} Statistical Yearbook \textbf{fao@year}}

\oddfootmark The mark on odd pages
          177 \def\oddfootmark#1{\gdef\@oddfootmark{#1}}
          178 \oddfootmark{\rightmark}

frontmatterpagestyle This is our page style for front matter
          179 \fancypagestyle{frontmatterpagestyle}{%
          180 \fancyhf{}%
          181 \fancyhfoffset[LR]{1.5cm}%
          182 \renewcommand\headrulewidth{\z@}%
          183 \fancyfoot[RO,LE]{%
          184 \bgroup
          185 \setlength\fbboxsep{10\p@}%
          186 \raisebox{-\height}{\fcolorbox{white}{white}{\thepage}}%

```



```

187 \egroup}%
188 }
189 %
190 % \end{macro}
191 % \begin{macro}{spartpagestyle}
192 % \changes{v1.4}{2013/12/17}{Introduced macro}
193 % This is our page style for front matter
194 % \begin{macrocode}
195 \fancypagestyle{spartpagestyle}{%
196 \fancyhf{}%
197 \fancyhfoffset[LR]{3cm}%
198 \renewcommand\headrulewidth{\z@}%
199 \fancyfoot[RO,LE]{%
200 \bgroup
201 \setlength\fbboxsep{10\p@}%
202 \raisebox{-\height}{\fcolorbox{white}{white}{\thepage}}}%
203 \egroup}%
204 }
205 %
206 % \end{macro}
207 %
208 % \begin{macro}{standardpagestyle}
209 % \changes{v1.3}{2013/12/14}{Changed position of footers}
210 % \changes{v1.4}{2013/12/17}{Increased sizes}
211 % This is our main page style
212 % \begin{macrocode}
213 \fancypagestyle{standardpagestyle}{%
214 \fancyhf{}%
215 \fancyhfoffset[LR]{2.22cm}%
216 \renewcommand\headrulewidth{\z@}%
217 \fancyhead[LE]{\hspace*{25\p@}\color{@bgcolor}\captionfamily
218 \Huge\strut\ifnum\thepart>0\relax
219 \thepart\fi\normalsize\dotfill}%
220 \fancyhead[L0]{\hspace*{25\p@}\color{@bgcolor}\normalsize\dotfill
221 \captionfamily\Huge\strut
222 \leftmark\expandafter\ifx\csname @icon@\thepart\endcsname\relax\else\space
223 \raisebox{-0.25\totalheight}{%
224 \colored@icon[width=1.2cm]{\csname
225 @icon@\thepart\endcsname}}\fi
226 \hspace*{25\p@}}}%
227 \fancyfoot[LE]{%
228 \bgroup
229 \setlength\fbboxsep{10\p@}%
230 \color{@bgcolor}%
231 \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}}%
232 \normalsize\dotfill
233 \raisebox{-\height}{\@evenfootmark\hspace*{25\p@}}}%
234 \egroup}%
235 \fancyfoot[L0]{%
236 \bgroup

```

```

237 \setlength\fbboxsep{10\p@}%
238 \color{@bgcolor}%
239 \raisebox{-\height}{\hspace*{25\p@}\@oddfootmark}%
240 \normalsize\dotfill
241 \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
242 \egroup}%
243 }
244 \pagestyle{standardpagestyle}

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

partpagestyle The page style for the parts introduction
246 \fancypagestyle{partpagestyle}{%
247 \fancyhf{}%
248 \fancyhead[L]{%
249 \begin{picture}(0,0)
250 \@partpagepicture
251 \put(-7,63){%
252 \raisebox{-\height}{\begin{tikzpicture}
253 \fill[color=@bgcolor,opacity=.1]
254 (0,0) rectangle ($(\textwidth,\textheight)+(5cm,5cm)$);
255 \end{tikzpicture}}}%
256 \end{picture}}
257 \fancyhfoffset[LR]{2.22cm}%
258 \renewcommand\headrulewidth{\z@}%
259 \fancyfoot[LE]{%
260 \bgroup
261 \setlength\fbboxsep{10\p@}%
262 \color{@bgcolor}%
263 \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
264 \normalsize\dotfill
265 \raisebox{-\height}{\@evenfootmark\hspace{20\p@}}%
266 \egroup}%
267 \fancyfoot[L0]{%
268 \bgroup
269 \setlength\fbboxsep{10\p@}%
270 \color{@bgcolor}%
271 \raisebox{-\height}{\hspace*{25\p@}\@oddfootmark}%
272 \normalsize\dotfill
273 \raisebox{-\height}{\fcolorbox{@bgcolor}{@bgcolor}{\color{white}\thepage}}%
274 \egroup}%
275 }

\faopartbloptop 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:
276 \def\faopartbloptop#1#2{\expandafter\gdef\csname fao@blobstart#1\endcsname{#2}}
277 \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: 278 <code>\gdef\@toc@ext@list{toc}</code>
<code>\nf@vert@sep</code>	Vertical separation between the floats 279 <code>\newlength\nf@vert@sep</code> 280 <code>\setlength\nf@vert@sep{10mm}</code>
<code>\nf@width</code>	The width of the nonfloat 281 <code>\newlength\nf@width</code>
<code>\nf@height</code>	The height of the nonfloat 282 <code>\newlength\nf@height</code>
<code>\nf@captionheight</code>	The height reserved for the caption 283 <code>\newlength\nf@captionheight</code> 284 <code>\setlength\nf@captionheight{11mm}</code>
<code>\nf@sourceheight</code>	The height reserved for the source lines 285 <code>\newlength\nf@sourceheight</code> 286 <code>\setlength\nf@sourceheight{2\baselineskip}</code>
<code>\nf@margin</code>	Margin for floats 287 <code>\newlength\nf@margin</code> 288 <code>\setlength\nf@margin{12\p@}</code>
<code>\nf@trianglebase</code>	The design requires a triangle under the caption. Here it is 289 <code>\newlength\nf@trianglebase</code> 290 <code>\setlength\nf@trianglebase{12\p@}</code>
<code>\chartwidth</code>	The resulting width of a chart 291 <code>\newlength\chartwidth</code>
<code>\chartheight</code>	The resulting width of a chart 292 <code>\newlength\chartheight</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 293 <code>\newcount\nonfloat@type</code> 294 <code>\nonfloat@type=4\relax</code>

`\nf@contentsbox` The box to keep the contents of the float
295 `\newbox\nf@contentsbox`

`\nf@mainbox` The box for the float
296 `\newbox\nf@mainbox`

`\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.

297 `\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.

298 `\expandafter\ifx\csname ftype@#1\endcsname\relax`
299 `\expandafter\edef\csname ftype@#1\endcsname{\the\nonfloat@type}%`
300 `\multiply\nonfloat@type by 2\relax`
301 `\fi`

Now we define the extension for the floats

302 `\expandafter\def\csname ext@#1\endcsname{#2}%`
303 `\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

304 `\expandafter\ifx\csname the#1\endcsname\relax`
305 `\newcounter{#1}\fi`
306 `\expandafter\def\csname fnum@#1\endcsname{#3~\csname`
307 `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

308 `\expandafter\let\csname #1\endcsname\relax`
309 `\expandafter\let\csname end#1\endcsname\relax`

And the actual definition

310 `\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}}`

311 `\def\@getfirstletter#1{\@getfirstletter#1}`
312 `\def\@getfirstletter#1{#1\@gobbleword}`
313 `\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.

```

314 \def\non@float#1#2#3{
315   \def\@capttype{#1}%
316   \def\nf@size{#2}%
317   \def\nf@placement{#3}%

```

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

```

318   \lowercase{\xdef\nf@vert@pos{\@getfirstletter#3\@endword}}
319   \global\let\nf@source\@empty

```

Define the source command inside float

```

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

```

Define the caption producing command:

```

321 \long\def\@makecaption##1##2{\long\gdef\nf@caption{%
322   {\bfseries\large\color{white}
323     \MakeUppercase{##1}: ##2}}}%
324 \gdef\nf@caption{}%

```

We calculate the size of the float and skips

```

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

```

```

355 \advance\charheight by -2\baselineskip
356 \fi
357 \ifx\nf@size\tempT
358 \advance\charheight by -2\baselineskip
359 \fi
360 \chartwidth=\dimexpr(\nf@width-2\nf@margin-0.5\nf@trianglebase)%
361 \nf@height=\dimexpr(\nf@height+\nf@topskip+\nf@bottomskip)%

```

Now we construct the main box.

```

362 \global\setbox\nf@contentsbox
363 \color@vbox
364 \normalcolor
365 \vbox to \charheight
366 \bgroup
367 \hsize\chartwidth
368 \@parboxrestore
369 \@floatboxreset
370 }

```

\endnon@float The actual typesetting

```

371 \def\endnon@float{\@endfloatbox\par
372 \hsize=\nf@width
373 \setbox\nf@mainbox=\vbox to \nf@height\bgroup
374 \hsize=\chartwidth
375 \vskip\nf@topskip
376 \noindent
377 \begin{picture}(0,0)%
378 \put(0,0){\color{\bgcolor}%
379 \begin{tikzpicture}[baseline=(current bounding box.north)]
380 \fill (0,0) -- (\nf@trianglebase,0) --
381 (0.5\nf@trianglebase,-\nf@trianglebase) -- cycle;
382 \end{tikzpicture}}
383 \end{picture}%
384 \def\@tempa{chart}%
385 \ifx\@tempa\@capttype
386 \begin{picture}(0,0)%
387 \put(0,0){\color{\bgcolor}%
388 \begin{tikzpicture}[baseline=(current bounding box.north)]
389 \draw(0,0) -- (\nf@width,0);
390 \draw (0.5\nf@trianglebase,-2\nf@trianglebase) --
391 (0.5\nf@trianglebase,-\charheight-2\nf@trianglebase
392 -\nf@margin) --
393 (\nf@width-\pgflinewidth, -\charheight-2\nf@trianglebase
394 -\nf@margin) -- (\nf@width-\pgflinewidth, 0);
395 \end{tikzpicture}}
396 \end{picture}%
397 \fi
398 {\color{\bgcolor}\color@block{\nf@width}{\nf@captionheight}{.1\p@}}%
399 \hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
400 \vbox to \nf@captionheight\bgroup

```

```

401 \nf@caption\vfill\normalcolor
402 \egroup\par\nointerlineskip\vskip\nf@trianglebase
403 \vskip\nf@margin
404 \noindent\hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
405 \box\nf@contentsbox\par\nointerlineskip
406 \vskip\nf@margin
407 \hskip\dimexpr(\nf@margin+0.5\nf@trianglebase)%
408 \vbox to \nf@sourceheight\bgroup
409 \leftskip-\nf@margin\parskip\z@\parindent\z@
410 \ifx\nf@source\@empty\else
411 \vskip0.5\baselineskip
412 \color{bgcolor}%
413 \rule{.2em}{.2em}~\rule{.2em}{.2em}~%
414 \rule{.2em}{.2em}~\rule{.2em}{.2em}~%
415 \rule{.2em}{.2em}~\rule{.2em}{.2em}~%
416 \rule{.2em}{.2em}\par\normalcolor
417 Source: \nf@source\par\vfill\fi\egroup
418 \vfill\egroup
419 \edef\nf@currbox{\expandafter\csize nfbox@\nf@size
420 @\nf@placement\endcsize}%
421 \global\setbox\nf@currbox=
422 \vbox{\box\nf@currbox\nointerlineskip\penalty0\box\nf@mainbox}}

```

`\map` A standard nonfloat:

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

`\listofmapsname` The name for the list of maps

```
424 \def\listofmapsname{List of Maps}
```

`\table` Another one

```
425 \newnon@float{table}{lot}{Table}
```

`\chart` And another one

```
426 \newnon@float{chart}{loc}{Chart}
```

`\listofchartsname` The name for the list of charts

```
427 \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.

```

428 \newbox\nfbox@S@ul
429 \newbox\nfbox@S@ur
430 \newbox\nfbox@S@ll
431 \newbox\nfbox@S@lr

```

```

432 \newbox\nfbox@S@UL
433 \newbox\nfbox@S@UR
434 \newbox\nfbox@S@LL
435 \newbox\nfbox@S@LR
436 \newbox\nfbox@T@ul
437 \newbox\nfbox@T@ur
438 \newbox\nfbox@T@UL
439 \newbox\nfbox@T@UR
440 \newbox\nfbox@W@ul
441 \newbox\nfbox@W@ll
442 \newbox\nfbox@W@UL
443 \newbox\nfbox@W@LL
444 \newbox\nfbox@B@ul
445 \newbox\nfbox@B@UL

```

\@tempboxb Standard L^AT_EX has \@tempboxa. We need more...

```

446 \ifx\@tempboxb\@undefined
447   \newbox\@tempboxb
448 \fi

```

\standard@output The standard L^AT_EX output routine is saved as \standard@output. We use it for one column pages—maybe one even wants a standard float here?

```

449 \edef\standard@output{\the\output}

```

\output Right now we use standard output on one column pages and the new one with two columns

```

450 \output{\if@twocolumn\the\nf@output\else\standard@output\fi}

```

\nf@output Here we define our own output routine.

```

451 \newtoks\nf@output
452 \nf@output {%

```

We define the current boxes \curr@nfbox.... Also, uc or lc mean Upper or Lower Current column

```

453   \ifodd\c@page
454     \global\let\curr@nfbox@S@ul\nfbox@S@UL
455     \global\let\curr@nfbox@S@ur\nfbox@S@UR
456     \global\let\curr@nfbox@S@ll\nfbox@S@LL
457     \global\let\curr@nfbox@S@lr\nfbox@S@LR
458     \global\let\curr@nfbox@T@ul\nfbox@T@UL
459     \global\let\curr@nfbox@T@ur\nfbox@T@UR
460     \global\let\curr@nfbox@W@ul\nfbox@W@UL
461     \global\let\curr@nfbox@W@ll\nfbox@W@LL
462     \global\let\curr@nfbox@B@ul\nfbox@B@UL
463   \else
464     \global\let\curr@nfbox@S@ul\nfbox@S@ul
465     \global\let\curr@nfbox@S@ur\nfbox@S@ur
466     \global\let\curr@nfbox@S@ll\nfbox@S@ll
467     \global\let\curr@nfbox@S@lr\nfbox@S@lr

```



```

468 \global\let\curr@nfbbox@T@ul\nfbbox@T@ul
469 \global\let\curr@nfbbox@T@ur\nfbbox@T@ur
470 \global\let\curr@nfbbox@W@ul\nfbbox@W@ul
471 \global\let\curr@nfbbox@W@ll\nfbbox@W@ll
472 \global\let\curr@nfbbox@B@ul\nfbbox@B@ul
473 \fi
474 \if@firstcolumn
475 \global\let\curr@nfbbox@S@uc\curr@nfbbox@S@ul
476 \global\let\curr@nfbbox@S@lc\curr@nfbbox@S@ll
477 \global\let\curr@nfbbox@T@uc\curr@nfbbox@T@ul
478 \else
479 \global\let\curr@nfbbox@S@uc\curr@nfbbox@S@ur
480 \global\let\curr@nfbbox@S@lc\curr@nfbbox@S@lr
481 \global\let\curr@nfbbox@T@uc\curr@nfbbox@T@ur
482 \fi
483 \let \par \@@par
484 %
485 % There are several possibilities when we start the output routine for
486 % a single column in a two-column layout.
487 % \begin{enumerate}
488 % \item Wide or big non-floats completely cover the page. In this
489 % case we do not need to create columns, and directly go to the
490 % output.
491 % \item The columnd is occupied by tall or single nonfloats. We make
492 % a column of nonfloats and send it further.
493 % \item There is room for text on the page, but its height
494 % (\cs{@colroom}) is different from the one known to the page builder
495 % (\cs{vsize}). In this case we change \cs{vsize} and return.
496 % \item The room for text is exactly \cs{vsize}. In this case we form
497 % a column and return.
498 % \end{enumerate}
499 % \begin{macrocode}
500 \global\@colht=\textheight
501 \ifdim\ht\curr@nfbbox@B@ul>0.5\baselineskip
502 \global\advance\@colht by -\textheight
503 \fi
504 \ifdim\ht\curr@nfbbox@W@ul>0.5\baselineskip
505 \global\advance\@colht by -0.5\textheight
506 \fi
507 \ifdim\ht\curr@nfbbox@W@ll>0.5\baselineskip
508 \global\advance\@colht by -0.5\textheight
509 \fi
510 \ifdim\@colht < \baselineskip
511 \nf@output@widepage
512 \else
513 \nf@makecol
514 \fi
515 }

```

`\nf@output@widepage` The macro `\nf@output@widepage` outputs a page completely filled by wide pic-

tures.

```

516 \def\nf@output@widepage{%
517   \unvbox\@cclv
518   \penalty\outputpenalty
519   \if@firstcolumn\else
520     \ClassError{faosyb}{Wide or big nonfloats defined too late. Move
521       them up}{I encountered Big or Wide floats when I already made the
522       first column. Please move them up}
523   \fi
524   \ifdim\ht\curr@nfbox@B@ul>0.5\baselineskip
525     \setbox\@tempboxa\vsplit\curr@nfbox@B@ul to \textheight
526     \setbox\@outputbox \vbox\bgroup
527       \boxmaxdepth \@maxdepth
528       \box\@tempboxa
529       \vfill
530     \egroup
531   \else
532     \setbox\@tempboxa\vsplit\curr@nfbox@W@ul to 0.5\textheight
533     \setbox\@tempboxb\vsplit\curr@nfbox@W@ll to 0.5\textheight
534     \setbox\@outputbox\vbox\bgroup
535       \boxmaxdepth \@maxdepth
536       \box\@tempboxa
537       \nointerlineskip
538       \box\@tempboxb
539     \vfill
540   \egroup
541   \fi
542   \global\vsizetextheight
543   \global\@colhttextheight
544   \@outputpage
545   \@firstcolumntrue
546 }

```

`\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

```

547 \def\nf@makecol{%
548   \global\@colroom\@colht
549   \ifdim\ht\curr@nfbox@T@uc>0.5\baselineskip
550     \global\@colroom=0pt
551   \fi
552   \ifdim\ht\curr@nfbox@S@uc>0.5\baselineskip
553     \global\advance\@colroom by -0.5\textheight
554   \fi
555   \ifdim\ht\curr@nfbox@S@lc>0.5\baselineskip
556     \global\advance\@colroom by -0.5\textheight
557   \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.

```
558 \ifdim\@colroom<0.5\baselineskip
559   \nf@makenfcol
560 \else
561   \nf@makemixedcol
562 \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.

```
563 \def\nf@makenfcol{%
564   \unvbox\@cclv
565   \penalty\outputpenalty
566   \ifdim\@colht>0.9\textheight % one tall or two squares
567     \ifdim\ht\curr@nfbox@T@uc>0.5\baselineskip
568       \setbox\@outputbox\vbox\bgroup
569       \boxmaxdepth \@maxdepth
570       \vsplit \curr@nfbox@T@uc to \textheight
571       \egroup
572     \else
573       \setbox\@outputbox\vbox\bgroup
574       \boxmaxdepth \@maxdepth
575       \vsplit\curr@nfbox@S@uc to 0.5\textheight
576       \nointerlineskip
577       \vsplit\curr@nfbox@S@lc to 0.5\textheight
578       \egroup
579     \fi
580   \else % one square
581     \ifdim\ht\curr@nfbox@S@uc>0.49\textheight
582       \setbox\@outputbox\vsplit \curr@nfbox@S@uc to 0.5\textheight
583     \else
584       \setbox\@outputbox\vsplit \curr@nfbox@S@lc to 0.5\textheight
585     \fi
586   \fi
587   \nf@opcol
588 }
```

`\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

```
589 \def\nf@makemixedcol{%
590   \ifdim\@colroom=\vsize
591     \nf@makemixedcol@
592   \else
593     \global\vsize=\@colroom
594     \unvbox\@cclv
```

```

595 \penalty\outputpenalty
596 \fi}

\nf@makmixedcol@ And now the real work of \nf@makmixedcol@
597 \def\nf@makmixedcol{%
598 \ifvoid\footins
599 \setbox\@outputbox \box \cclv
600 \else
601 \setbox\@outputbox \vbox {%
602 \boxmaxdepth \@maxdepth
603 \unvbox \cclv
604 \vskip \skip\footins
605 \color@begingroup
606 \normalcolor
607 \footnoterule
608 \unvbox \footins
609 \color@endgroup
610 }%
611 \fi
612 \ifdim\ht\curr@nfbox@S@uc>0.49\textheight
613 \setbox\@tempboxa\vsplit\curr@nfbox@S@uc to 0.5\textheight
614 \setbox\@outputbox \vbox
615 \bgroup
616 \box\@tempboxa
617 \nointerlineskip
618 \box\@outputbox
619 \egroup
620 \fi
621 \ifdim\ht\curr@nfbox@S@lc>0.49\textheight
622 \setbox\@tempboxa\vsplit\curr@nfbox@S@lc to 0.5\textheight
623 \setbox\@outputbox \vbox
624 \bgroup
625 \box\@outputbox
626 \nointerlineskip
627 \box\@tempboxa
628 \egroup
629 \fi
630 \nf@opcol}

\nf@opcol This is like the standard LATEX \@outputdblcol, but with the treatment of wide
nonfloats.
631 \def\nf@opcol{%
632 \if@firstcolumn
633 \global\@firstcolumnfalse
634 \global\setbox\@leftcolumn\box\@outputbox
635 \else
636 \global\@firstcolumntrue
637 \ifdim\ht\curr@nfbox@W@ul>0.5\baselineskip
638 \setbox\@tempboxa\vsplit \curr@nfbox@W@ul to 0.5\textheight
639 \else

```

```

640     \setbox\@tempboxb\box\@tempboxa
641     \fi
642     \setbox\@outputbox \vbox\bgroup
643       \box\@tempboxa
644       \nointerlineskip
645       \hb@xt@\textwidth {%
646         \hb@xt@\columnwidth {%
647           \box\@leftcolumn \hss}%
648       \hfil
649       {\normalcolor\vrule \@width\columnseprule}%
650       \hfil
651       \hb@xt@\columnwidth {%
652         \box\@outputbox \hss}%
653     }%
654     \egroup
655     \ifdim\ht\curr@nfbox@W@ll>0.5\baselineskip
656       \setbox\@tempboxa\vsplit \curr@nfbox@W@ll to 0.5\textheight
657       \setbox\@outputbox\vbox\bgroup
658         \box\@outputbox
659         \nointerlineskip
660         \box\@tempboxa
661       \egroup
662     \fi
663     \@outputpage
664     \global\vsizet\textheight
665     \global\@colht\textheight
666     \global\@colroom\textheight
667     \fi}

```

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

```

668 \let\standard@clearpage\clearpage

```

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

```

669 \def\clearpage{%
670   \if@twocolumn
671     \nf@clearpage
672   \else
673     \standard@clearpage
674 \fi}

```

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

```

675 \def\nf@totalheight{\dimexpr(
676   \ht\nfbox@S@UL+
677   \ht\nfbox@S@UR+
678   \ht\nfbox@S@LL+
679   \ht\nfbox@S@LR+
680   \ht\nfbox@T@UL+
681   \ht\nfbox@T@UR+
682   \ht\nfbox@W@UL+

```

```

683 \ht\nfbox@W@LL+
684 \ht\nfbox@B@UL+
685 \ht\nfbox@S@ul+
686 \ht\nfbox@S@ur+
687 \ht\nfbox@S@ll+
688 \ht\nfbox@S@lr+
689 \ht\nfbox@T@ul+
690 \ht\nfbox@T@ur+
691 \ht\nfbox@W@ul+
692 \ht\nfbox@W@ll+
693 \ht\nfbox@B@ul)}}

```

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

```

694 \def\nf@clearpage{%
695 \write\m@ne{}%
696 \if@firstcolumn
697 \ifdim\dimexpr(\pagetotal+\nf@totalheight)>\baselineskip
698 \leavevmode
699 \null\vfill\newpage
700 \null\vfill\newpage
701 \fi
702 \else
703 \leavevmode
704 \null\vfill\newpage
705 \fi
706 \ifdim\nf@totalheight>\baselineskip
707 \nf@clearpage\fi
708 }

```

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

```

709 \def\clearspread{\clearpage\ifodd\c@page
710 \hbox{}\newpage\if@twocolumn\hbox{}\newpage\fi\fi\@firstcolumntrue}

```

We need to clear everything at the end

```

711 \AtEndDocument{\if@twocolumn
712 \ifdim\nf@totalheight>\baselineskip
713 \null\vfill\clearpage\fi
714 \fi}

```

3.12 Sectioning

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

```

715 \newif\if@mainmatter

```

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

```

716 \def\frontmatter{%
717 \pagestyle{frontmatterpagestyle}%
718 \onecolumn\@mainmatterfalse}

```

`\mainmatter` We want Arabic numbers for main matter:
719 `\def\mainmatter{\loadgeometry{standard}\onecolumn`
720 `\@mainmattertrue}`

`\tocdepth` Only sections and up are allowed in TOC:
721 `\setcounter{tocdepth}{1}`

`\secnumdepth` Only the parts are numbered in our setup:
722 `\setcounter{secnumdepth}{-1}`

`\thepart` And the parts are numbered using Arabic numbers:
723 `\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.
724 `\newcounter{fao@partnum}`
725 `\setcounter{fao@partnum}{0}`

`\fao@currentpartnum` The current value of `\fao@partnum` used in TOC:
726 `\def\fao@currentpartnum{0}`

`\part` The largest partition in the book
727 `\renewcommand\part{%`
728 `\secdef\@part\@spart}`

`\EndPartIntro` This command switches off the special formatting of part pages:
729 `\def\EndPartIntro{\clearpage`
730 `\end{adjmulticols}\clearspread\twocolumn\normalcolor`
731 `\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
732 `\def\@maxpart{1}`
733 `\def\iconfill#1#2#3{%`
734 `\expandafter\ifx\csname @icon@1\endcsname\relax\strut\else`
735 `\@tempcnta=1`
736 `\setbox\@tempboxa=\hbox{}}%`
737 `\loop`
738 `\@tempdima=#1`
739 `\setbox\@tempboxa=\hbox{\unhbox\@tempboxa`
740 `\colored@icon@fg[width=\@tempdima]{\csname`
741 `@icon@the\@tempcnta\endcsname}\#3}\hspace{0.3\@tempdima}}%`
742 `\advance\@tempcnta by 1\relax`
743 `\ifnum\@tempcnta>\@maxpart\relax\@tempcnta=1\fi`
744 `\ifdim\wd\@tempboxa>\#2\else\repeat`
745 `\unhbox\@tempboxa`
746 `\fi}`

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

```

747 \def\currenticonfill#1#2#3{%
748   \expandafter\ifx\csname @icon@\thepart\endcsname\relax\strut\else
749   \setbox\@tempboxa=\hbox{%
750     \@tempdima=#1
751     \loop
752     \@tempdima=1.44\@tempdima
753     \setbox\@tempboxa=\hbox{\unhbox\@tempboxa
754       \colored@icon@fg[width=\@tempdima]{\csname
755         @icon@\thepart\endcsname}{#3}\hspace{0.2\@tempdima}}%
756     \ifdim\wd\@tempboxa>#2\else\repeat
757     \unhbox\@tempboxa
758   \fi}

```

`\@part` This is the actual part making macro.

```

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

```



```

792      \raggedright\null#2\par}\par\vskip80\p@
793    }\par\normalcolor
794    \begin{adjmulticols}{1}{44mm}{0mm}}

\@currentsymbol the symbol for the next unnumbered part
795 \define@choicekey*{fao}{symbol}[\val\nr]%
796 {righttriangle,square,rightsemicircle}{%
797   \ifcase\nr\relax
798     \gdef\@currentsymbol{(0,0) -- (1ex,0) -- (1ex,1ex) -- cycle}%
799   \or
800     \gdef\@currentsymbol{(0,0) -- (1ex,0) -- (1ex,1ex) -- (0,1ex) --
801     cycle}%
802   \or
803     \gdef\@currentsymbol{(0,0) arc[start angle=90, end angle=-90, x
804     radius = 0.5ex, y radius = 0.5ex] -- cycle}%
805   \fi
806 }{\ClassError{faosyb}{Bad symbol value \val}}
807 \faoset{symbol=square}

\@spart Unnumbered parts are only in the foreword
808 \def\@spart#1{%
809   \cleardoublepage
810   \loadgeometry{frontmatter}%
811   \pagestyle{spartpagestyle}%
812   \onecolumn
813   \selectcolor
814   \selecticon
815   \rowcolors{2}{@bgcolor!10}{}%
816   \phantomsection
817   \addcontentsline{toc}{spart}{\hspace{1em}#1}%
818   \makebox[0pt]{%
819     \raisebox{-\totalheight}%
820     [0pt][0pt]{\rotatebox{90}{\fontsize{9mm}{9mm}\selectfont
821       \captionfamily
822       \tikz\fill[color=@bgcolor]\@currentsymbol;\space
823       \color{gray}#1\strut}}%
824     \hspace*{50pt}}\par\vspace*{-\baselineskip}%
825   \vspace*{-\parskip}}

\sectionmark We do not want to have uppercase sections in the footers
826 \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
827 \renewcommand\section{\par\clearspread
828   \@startsection {section}{1}{\z@}%
829   {-1sp}%
830   {2.3ex \@plus.2ex}%
831   {\normalfont\Large\bfseries\raggedright
832   \color{@bgcolor}}}
```

`\subsection` The subsection macro

```
833 \renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
834                                     {-1sp}%
835                                     {1.5ex \@plus .2ex}%
836                                     {\normalfont\large\bfseries\raggedright
837                                     \color{@bgcolor}}}
```

3.13 Tables

`\tablepages` Long tables at the end of a part

```
838 \newenvironment{tablepages}{\onecolumn
839 \bgroup\narrowfamily\multicolsep=\z@
840 \vspace*{-2cm}%
841 \def\emph{\textsl}%
842 \begin{adjmulticols}{1}{-1.3cm}{-1.3cm}\centering\normalcolor}%
843 {\end{adjmulticols}\egroup}}
```

`\tablemph` Some styles define `\tablemph` commands. Here we supply a stub

```
844 \AtBeginDocument{\providecommand{\tablemph}[1]{\emph{#1}}}
```

We define new column types for table headers:

```
845 \newcolumntype{d}[1]{D{.}{.}{#1}}
846 \newcolumntype{H}{>\columncolor{@tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]}c}
```

P columntype is much more complex. Basically we want a centered entry with a parbox of the given width inside.:

```
847 \newcolumntype{P}[1]{>{\columncolor{@tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]%
848 \@fao@Pentry{#1}}c<\end@fao@Pentry}}
```

`\@fao@Pentry` Since `\parbox` needs “real” braces to delimit the argument, we use this trick. Note `\hspace{0pt}` to allow T_EX to hyphenate the first word.

```
849 \def\@fao@Pentry#1#2\end@fao@Pentry{%
850 \parbox[t]{#1}{\centering\strut\hspace{\z@}#2\strut}}
```

Same with C entry:

```
851 \newcolumntype{C}[1]{>\columncolor{@tableheadcolor}[1.01\tabcolsep][1.01\tabcolsep]%
852 \@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`:

```
853 \def\@fao@Centry#1#2\end@fao@Centry{%
854 \settowidth{\@tempdima}{${-99.999$}}%
855 \@tempdima=#1\@tempdima\relax
856 \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

```
857 \def\LT@makecaption#1#2#3{%
```

```

858 \LT@mc\LT@cols {0}{1}{\cellcolor{white}%
859 \rlap{\fcolorbox{white}{\tableheadcolor}{\normalsize
860 \captionfamily\large\strut
861 \textcolor{white}{#1\MakeUppercase{#2}: }#3}}}%
862 \begin{picture}(0,0)%
863 \put(.5,-7){\color{bgcolor}%
864 \begin{tikzpicture}[baseline=(current bounding box.north)]
865 \fill (0,0) -- (\nf@trianglebase,0) --
866 (.5\nf@trianglebase,-\nf@trianglebase) -- cycle;
867 \end{tikzpicture}}
868 \end{picture}\normalcolor
869 \raisebox{-17pt}{\strut}}

```

3.14 Front Matter

`\@generic` This is a generic macro with two parameters: name of the toc and file extension

```

870 \def\@generic#1#2{\clearpage\loadgeometry{standard}%
871 \pagestyle{frontmatterpagestyle}\onecolumn
872 {\fontsize{48pt}{48pt}\selectfont
873 \captionfamily\color{black!40}#1\par}\@mkboth{#1}{#1}\bigskip
874 \@starttoc{#2}}

```

`\tableofcontents` Our table of contents

```

875 \renewcommand\tableofcontents{\clearpage\loadgeometry{standard}%
876 \pagestyle{frontmatterpagestyle}\onecolumn
877 \@mkboth{\contentsname}{\contentsname}%
878 \makebox[0pt][l]{\fontsize{24pt}{32pt}\selectfont \bfseries
879 \color{black!70}\MakeUppercase{\contentsname}\space}%
880 \par\vspace{-2\baselineskip}\vspace{-\parskip}%
881 \@starttoc{toc}}

```

`\@tocpartskip` This is the skip between the parts in TOC:

```

882 \newlength{\@tocpartskip}
883 \define@key{fao}{tocpartskip}{\setlength{\@tocpartskip}{#1}}
884 \faoset{tocpartskip}=\z@

```

`\@fao@tocrule@start` The start of the current TOC colored rule

```
885 \newdimen\@fao@tocrule@start
```

`\@fao@tocrule@height` The height of the current TOC rule

```
886 \newdimen\@fao@tocrule@height
```

`\@draw@tocrule@part` Drawing the toc rule for a part

```

887 \def\@draw@tocrule@part{\@fao@tocrule@height=\pagetotal
888 \protected@write\@auxout{\string\@fao@partblobbottom{\@fao@currentpartnum}{\the\@fao@tocrule@height}}{\@fao@tocrule@height}{\@fao@tocrule@start}
889 \advance\@fao@tocrule@height-\@fao@tocrule@start
890 \bgroup\parskip\z@
891 \parbox[b][\z@]{\z@}{\hspace*{-15\p@}\color{bgcolor}\rule{2\p@}{\@fao@tocrule@height}}%
892 \parbox[b][\z@]{\z@}{\hspace*{330\p@}}%

```

```

893   \color{bgcolor}\rule{41\p}{\fao@tocrule@height}}%
894   \par\vspace{-0.5\baselineskip}\egroup}

\@draw@tocrule@section Drawing the toc rule for a section
895 \def\@draw@tocrule@section{\fao@tocrule@height=\pagetotal
896   \protected@write\@auxout{}\string\fao@partblobbottom{\fao@currentpartnum}{\the\fao@tocrule@height}
897   \advance\fao@tocrule@height-\fao@tocrule@start
898   \advance\fao@tocrule@height5\p@
899   \bgroup\parskip\z@\small
900   \raisebox{\baselineskip}[\z@][\z@]{\parbox[b][\z@]{\hspace*{-35\p@}\color{bgcolor}\rule{41\p}{\fao@tocrule@height}}
901   \raisebox{\baselineskip}[\z@][\z@]{\parbox[b][\z@]{\hspace*{310\p@}%
902     \color{bgcolor}\rule{41\p}{\fao@tocrule@height}}}%
903   \par\vspace{-\baselineskip}\egroup}

\l@part This prints the part in TOC:
904 \renewcommand*\l@part[2]{%
905   \ifnum \c@tocdepth >-2\relax
906     \addpenalty{-\@highpenalty}%
907     \setlength\@tempdima{3em}%
908     \addvspace{\@tocpartskip}%
909     \begingroup
We store the current vertical position of the page into \fao@tocrule@start
910 %       \addvspace{-2pc}\par
911       \fao@tocrule@start=\pagetotal
912       \protected@write\@auxout{}\string\fao@partblobtop{\fao@currentpartnum}{\the\fao@tocrule@start}
913       \parindent \z@ \rightskip \@pnumwidth
914       \parfillskip -\@pnumwidth
915       \leftskip180\p@
916       {\leavevmode
917         \color{bgcolor}\bfseries\partname\space#1:
918         \hfil \hbxt@\@pnumwidth{\hss #2}}%
919       \par\@draw@tocrule@part
920       \nobreak
921       \global\@nobreaktrue
922       \everypar{\global\@nobreakfalse\everypar{}}%
923     \endgroup
924   \fi}

\l@spart This adds unnumbered part to TOC
925 \newcommand*\l@spart[2]{%
926   \ifnum \c@tocdepth >-2\relax
927     \addpenalty{-\@highpenalty}%
928     \setlength\@tempdima{3em}%
929     \begingroup
930     \fao@tocrule@start=\pagetotal
931     \protected@write\@auxout{}\string\fao@partblobtop{\fao@currentpartnum}{\the\fao@tocrule@start}
932     \parindent \z@ \rightskip \@pnumwidth
933     \parfillskip -\@pnumwidth
934     \leftskip180\p@

```

```

935     {\leavevmode
936       \color{@bgcolor}\bfseries#1:
937       \hfil \hb@xt@{@pnumwidth{\hss #2}}}%
938     \par\@draw@tocrule@part
939     \nobreak
940     \global\@nobreaktrue
941     \everypar{\global\@nobreakfalse\everypar{}}%
942   \endgroup
943 \fi}

```

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

```

944 \renewcommand*\l@section[2]{%
945   \ifnum \c@tocdepth >-2\relax
946     \addpenalty{-\@highpenalty}%
947     \setlength\@tempdima{3em}%
948     \begingroup
949     \small
950     \@fao@tocrule@start=\pagetotal
951     \leftskip200\p@\relax\parskip\z@
952     \parindent \z@ \rightskip \@pnumwidth
953     \parfillskip -\@pnumwidth
954     {\leavevmode\small\strut
955       #1\hfil \hb@xt@{@pnumwidth{\hss #2}}\par\@draw@tocrule@section
956     \nobreak
957     \global\@nobreaktrue
958     \everypar{\global\@nobreakfalse\everypar{}}%
959   \endgroup
960 \fi}

```

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

```

961 \renewcommand\appendix{%
962   \bookmarksetup{startatroot}%
963   \addtocontents{toc}{\string\let\string\@draw@tocrule@part\string\relax
964     \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:

```

965 \AtEndDocument{%
966   \immediate\write\@auxout{\string\@writefile{loc}{\string\par}}%
967   \immediate\write\@auxout{\string\@writefile{lot}{\string\par}}%
968   \immediate\write\@auxout{\string\@writefile{lom}{\string\par}}}

```

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

```

969 \def\nf@dottedtocline#1#2#3#4#5{%
970   \ifnum #1>\c@tocdepth \else
971     \vskip \z@ \@plus.2\p@
972     {\leftskip #2\relax \rightskip \@tocrmarg \parfillskip -\rightskip
973       \parindent #2\relax\@afterindenttrue
974       \interlinepenalty\@M

```

```

975 \leavevmode
976 \@tempdima #3\relax
977 \advance\leftskip \@tempdima \null\nobreak\hskip -\leftskip
978 {#4}\nobreak
979 \leaders\hbox{$\m@th
980 \mkern \dotsep mu\hbox{.}\mkern \dotsep
981 mu$}\hfill
982 \nobreak
983 \hb@xt@\@pnumwidth{\hfil\normalfont\color{bgcolor}#5}%
984 \par}%
985 \fi}

\l@nonfloat The generic listing of a nonfloat in a list
986 \newcommand*\l@nonfloat{\nf@dottedtocline{1}{\z@}{2.3em}}

\l@numberline The number in table of contents
987 \def\l@numberline#1{%
988 \raisebox{\z@}{[\z@][\z@]}{%
989 \fcolorbox{bgcolor}{bgcolor}{%
990 \hb@xt@\@tempdima{\color{white}#1\strut\hfil}}}\hspace{2em}}

\listofmaps Our list of maps
991 \newcommand\listofmaps{\@genericctoc{\listofmapsname}{lom}}

\l@map Entry in the list of maps
992 \let\l@map\l@nonfloat

\listoftables Our list of tables
993 \renewcommand\listoftables{\@genericctoc{\listtablename}{lot}}

\l@table Entry in the list of tables
994 \let\l@table\l@nonfloat

\listofcharts Our list of charts
995 \newcommand\listofcharts{\@genericctoc{\listofchartsname}{loc}}

\l@chart Entry in the list of charts
996 \let\l@chart\l@nonfloat

```

3.15 Metadata

```

\metadatasession The section for metadata:
997 \newcommand\metadatasession[1]{\clearspread\twocolumn\normalcolor
998 \section{#1}}

\metadata This starts the metadata section. The commands inside are local to the metadata.
999 \def\metadata#1{\bgroup
1000 \def\meta@key{@@@}%

```

Now we define the commands for metadata:

```

\key This sets the key:
1001 \def\key##1{\NR@getttitle{##1}\phantomsection\label{##1}%
1002 \gdef\meta@key{##1}}

\source This typesets the source:
1003 \def\source##1{\textbar\,\emph{Source: }##1. }%

\owner This typesets the owner:
1004 \def\owner##1{\textbar\,\emph{Owner: }##1. }%

1005 \begin{list}{}{\topsep8\p@\labelwidth\z@
1006 \labelsep\z@itemindent\z@\parsep0.4ex plus 0.5ex minus
1007 0.2ex\relax\listparindent\z@\leftmargin\z@\rightmargin\z@
1008 \partopsep\z@}%
1009 \item{\bfseries\textbullet~#1\par\penalty10000}}

\endmetadata This closes the environment:
1010 \def\endmetadata{%
1011 \expandafter\ifx\csname
1012 metaback@\meta@key\endcsname\relax
1013 \else
1014 \textbar\,\emph{Referenced in: }
1015 \csname metaback@\meta@key\endcsname
1016 \fi
1017 \end{list}\egroup}

\refMetadata The way we actually reference the metadata:
1018 \def\refMetadata#1{%
1019 \ifx\@capytype\@undefined\def\@capytype{table}\fi
1020 \if@filesw
1021 \immediate\write\@mainaux{%
1022 \string\fao@metaback{#1}\{\@capytype\}\csname the\@capytype\endcsname\{\thepage\}\@current
1023 \fi
1024 }

\fao@metaback This reads the backreferences to metadata and prepares the the list. The argu-
ments are: key, float type, number of float, page and hyperref
1025 \def\fao@metaback#1#2#3#4#5{%
1026 \expandafter\ifx\csname metaback@#1\endcsname\relax
1027 \expandafter\gdef\csname metaback@#1\endcsname{%
1028 \hyper@linkstart{link}{#5}#2~#3\hyper@linkend}%
1029 \else
1030 \expandafter\g@addto@macro\csname metaback@#1\endcsname{,
1031 \hyper@linkstart{link}{#5}#2~#3\hyper@linkend}%
1032 \fi}

```

3.16 Further Reading

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

```

1033 \def\fitemize{%
1034   \ifnum \@itemdepth >\thr@@\@toodeep\else
1035     \advance\@itemdepth\@ne
1036     \edef\@itemitem{labelitem\romannumeral\the\@itemdepth}%
1037     \expandafter
1038     \list
1039       \csname\@itemitem\endcsname
1040       {\def\makelabel##1{\space}\parskip\z@\topsep\z@
1041        \itemsep\z@\labelwidth\z@\parsep\z@\partopsep\z@
1042        \leftmargin\z@\labelsep\z@}%
1043   \fi}

\endfitemize This is standard:
1044 \let\endfitemize =\endlist

\freading This is the “Further Reading environment”
1045 \newenvironment{freading}{%
1046   \bgroup
1047   \fboxsep=5\p@
1048   \let\itemize=\fitemize
1049   \let\enditemize=\endfitemize
1050   \setbox\@tempboxa=\hbox\bgroup
1051   \begin{minipage}{0.9\columnwidth}\parskip\z@
1052   {\color\@bgcolor}\bfseries
1053     \makebox[\z@][r]{%
1054       \tikz\fill[color=\@bgcolor] (0,0) -- (1.5ex,0) -- (1.5ex, 1.5ex) --
1055       cycle;\hspace{5\p@}}%
1056   Further reading\strut\par}}{\end{minipage}\egroup
1057   \par\vspace{12mm}%
1058   \hspace{\dimexpr(0.1\columnwidth-10\p@)}%
1059   \fcolorbox{\@bgcolor!10}{\@bgcolor!10}{\box\@tempboxa}%
1060   \egroup}

```

3.17 Publications

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

```

1061 \newlength{\@publicationskip}
1062 \define@key{fao}{publicationskip}{\setlength{\@publicationskip}{#1}}
1063 \faoset{publicationskip=6pt plus 2pt minus 2pt}

\@publicationparskip Paragraph skip between the publications.
1064 \newlength{\@publicationparskip}
1065 \define@key{fao}{publicationparskip}{\setlength{\@publicationparskip}{#1}}
1066 \faoset{publicationparskip=6pt plus 6pt minus 4pt}

```


`\publication` This typesets one publication:

```

1067 \newenvironment{publication}[2][{}]{%
1068   \gdef\@pub@cover{#1}%
1069   \par
1070   \raisebox{\dimexpr(-\baselineskip-\totalheight)}{%
1071     \ifx\@pub@cover\empty\rule{0.4\columnwidth}{\z@}\else
1072       \includegraphics[width=0.4\columnwidth]{\@pub@cover}\fi}
1073   \hspace{0.1\columnwidth}%
1074   \begin{minipage}[t]{0.49\columnwidth}%
1075     \setlength\parskip{\@publicationparskip}%
1076     {\bfseries\large\color{\@bgcolor}\#2\par}
1077     \long\def\pDescription##1{\par##1\par}%
1078     \def\pEdition##1##2{\par##1: ##2\par}%
1079     \def\pCycle##1{\par Publication cycle: ##1\par}%
1080     \def\pWeb##1{\par \raggedright Webpage: \url{##1}\par}}%
1081   {\end{minipage}}%
1082   \par
1083   \vspace{\@publicationskip}}

```

`\@resourcesicon` he icon for resources

```

1084 \define@key{fao}{resourcesicon}{\gdef\@resourcesicon{#1}}
1085 \faoset{resourcesicon={}}

```

`\@resourcesname` he icon for resources

```

1086 \define@key{fao}{resourcesname}{\gdef\@resourcesname{#1}}
1087 \faoset{resourcesname={Key Resources}}

```

`\KeyResources` ere we start resources section

```

1088 \def\KeyResources{\clearpage\phantomsection
1089   \ifx\@resourcesicon\empty\else
1090     \def\@partpagepicture{%
1091       \put(190,-36){\colored@icon[width=1.2cm]{\@resourcesicon}}%
1092       \gdef\@partpagepicture{}}
1093     \fi
1094     \addcontentsline{toc}{section}{\@resourcesname}%
1095     \ifx\@resourcesicon\empty\else
1096       \hspace*{1.3cm}%
1097       \fi
1098     {\color{\@bgcolor}\Large\bfseries\raggedright\@resourcesname\par
1099       \vspace{2.3ex \@plus.2ex}}

```

3.18 Subscripts

`\textsubscript` This follows standard L^AT_EX:

```

1100 \DeclareRobustCommand*\textsubscript[1]{%
1101   \@textsubscript{\selectfont#1}}
1102 \def\@textsubscript#1{%
1103   {\m@th\ensuremath{_{\mbox{\fontsize\sfontsize\z@#1}}}}

```

3.19 LyX code

`\lyxlist` It seems Lyx wants this:

```
1104 \newenvironment{lyxlist}[1]
1105 {\begin{list}{\setlength{\leftmargin}{\labelwidth}}
1106 {\setlength{\leftmargin}{\labelwidth}}
1107 {\setlength{\leftmargin}{\labelwidth}}
1108 {\addtolength{\leftmargin}{\labelsep}}
1109 {\renewcommand{\makelabel}[1]{##1\hfil}}
1110 {\end{list}}
```

3.20 The final word

```
1111 \setbgcolor{gray}\selectcolor
1112 \loadgeometry{standard}%
1113 \pagestyle{empty}
1114 \normalsize\normalfont
1115 </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	40
2013/12/16		\@currentsymbol: T	33	Added metadata from the old code	38
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v0.2		\@part: Changed formatting	32	partpagestyle: Changed position of footers	18
		iconfill: Rewrote	31	Rewrote using tikz	18
		\EndPartIntro: Deleted \clearspread	31	\EndPartIntro: Added \normalcolor	31
		\newicon: Added macro	16	\evenfootmark: Introduced macro	16
		\section: Redefined	33	\frontmatter: Deleted change in the pagenumbers	30
v0.3		\@generic: Added macro	35	\LettrineFontHook: Redefined	13
		\@toc@ext@list: 11	19	\mainmatter: Deleted change in the pagenumbers	31
		\EndPartIntro: Restored		\metadata: Rewrote	38
		\clearspread	31	\metadatassection: Added macro	38
		\l@chart: Added macro	38	\nf@opcol: Typo corrected	28
		\l@map: Added macro	38	\oddfootmark: Introduced macro	16
		\l@nonfloat: Added macro	38	\subsection: Redefined	34
		\l@table: Added macro	38	\tableofcontents: Rewrote	35
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		iconfill: Rewrote	31	\nf@captionheight: Changed size	19
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