Fourier-GUTenberg

Michel Bovani
michel.bovani@wanadoo.fr
January 30, 2005

1 What is Fourier-GUTenberg?

Fourier-GUTenberg is a \LaTeX typesetting system which uses Adobe Utopia as its standard base font. Adobe Utopia has been chosen for several reasons. The main of them is that four typefaces from the Utopia fonts packages have been gracefully donated to the X-consortium by Adobe. These typefaces (Utopia Regular, Utopia Italic, Utopia Bold, Utopia Bold Italic) are free of charges, and freely distributable (but it is not free software: see the licence in the read-me file!).

Shortly, here are the main features of Fourier-GUTenberg:

\begin{itemize}
  \item Fourier-GUTenberg provides all complementary typefaces needed to allow Utopia based \TeX typesetting. The system is absolutely stand-alone: apart from Utopia and fourier, no other typefaces are required.
  \item Fourier-GUTenberg provides two greeks, slanted and upright, that may be used in the same document.
  \item It make it possible to typeset “à la french”: upright roman uppercases, and upright greek in math mode.
  \item Fourier-GUTenberg do not use OT1 encoding at all. As in standard \TeX greek uppercases are in the text OT1 font, maths encodings have been redefined.
  \item It is fully \TeX encoded: text symbols like “dottlessj” (\j, \j) or “eng” (\eta, \n) are provided through a virtual fonts mechanism.
  \item Optionnaly, the commercial Adobe expert complement may be fully used by fourier. It includes old-style digits, real (not faked) small caps, semi-bold, extra-black, etc. It may be useful for professional typesetting, but of course, you have to buy the fonts!
  \item The \texttt{\boldmath} command is not still fully implemented, but there are now bold versions of math letters fonts, which can be used with the \texttt{\bm} command (package \texttt{bm.sty} which must be called after \texttt{fourier.sty}): \texttt{ax + \beta y}.
\end{itemize}
Fourier-GUTenberg provides specific symbols, in math mode ($\llbracket, \rrbracket, \llangle$) and in text mode ($€, \euro, \crown$).

There is a new package provided with Fourier-GUTenberg: fourier-orns. This is for those who want only the Fourier-GUTenberg logos & decos, but not the Fourier-GUTenberg fonts. Please don't call it if you call fourier.

2 Installation & setup

The texmf tree provides a standard TDS. You have to install all the fourier directories of the fourier texmf tree in one of yours texmf trees, according to your TDS specifications.

**WARNING:** Note that in not up to date distributions, the Fourier-GUTenberg map files should be in
texmf/dvips/fourier
and not in
texmf/fonts/map/dvips/fourier

If you don't still have the four Utopia fonts, you have to install them too in
texmf/fonts/type1/adobe/utopia/

If you have a licence for the commercial Utopia packages, you have to re-name the *.pfb files to suit the declarations in fourier-utopia-expert.map (or to modify this file). Mac fonts should be convverted to pfb format (with t1unmac, for instance).

You have now to setup your installation. Depending, of the choosen texmf tree, it is possible that you have to regenerate first the database (mktexlsr command, for instance).

Then, if you have a recent web2c distribution (teTeX, TeXlive, fpTeX...), just run updmap.

**UNIX:**

```
% updmap --enable Map fourier.map
```

If you want to install the commercial complement too (remember that you will have to buy it...)

```
% updmap --enable Map fourier-utopia-expert.map
```

**Windows:**

```
% updmap --enable Map=fourier.map
```
If you want to install the commercial complement too (remember that you will have to buy it...)

```%
updmap --enable Map=fourier-utopia-expert.map
```

Please note that the setting of the dvi previewer is not documented here. On a web2c distribution, updmap should do it.

If you don't have `updmap` or if the syntax doesn't match the described command, please tell me.

## 3 Usage

### 3.1 Calling Fourier-GUTenberg

You call Fourier-GUTenberg with:

```latex
\usepackage[\textit{<options>}]\{fourier\}
```

The options are:

1. **sloped** (default): in maths, lowercase greek is slanted, uppercase greek is upright, roman uppercase are slanted.

   \[ M \in \Gamma \iff OM = x^\rho \]

2. **upright** (à la French): in maths, lowercase and uppercase greeks are upright, and so is roman uppercase.

   \[ M \in \Gamma \iff OM = x^\rho \]

3. **widespace**: this option offers a larger interword space to those who think that the standard space of Utopia is too narrow...

4. **expert, oldstyle, fulloldstyle**: in order to use these options you need the commercial complements of Utopia. The **expert** option provides small caps (not faked), semi-bold, extra-black, (see the commands below) and more symbols in the TS1 companion encoding. The **oldstyle** option is the same, with oldstyle digits in text mode, and the **fulloldstyle** option is the same with oldstyle digits in text mode and in math mode.

5. **poorman** (default): if you don't have the commercial complement, you must use this option. The main disadvantage is that small caps will become **reduced caps**.

3
3.2 Text commands

First it is not useful to call the T1 encoding (\usepackage[T1]{fontenc}) because fourier will do it anyway.

Note that the T1 encoding have been completed:
\[ j, j, j \text{ etc.} \]
\[ ng, NG \eta, \Pi, \eta, \Pi \text{ etc.} \]
\[ \textperthousand, \textpertenthousand \%o, \%oo, \%oo, \%oo etc. \]

3.3 The companion encoding

The TS1 encoding is generally used through the textcomp package. This encoding is not fully implemented in Fourier-GUTenberg and the textcomp package is called by fourier.

What is available is roughly what is provided in the Adobe standard encoding, with some complements:
\[ \text{The euro symbol: \texteuro, \euro, } \varepsilon. \]

3.4 Fourier ornaments

Fourier-GUTenberg provides several logos and ornaments:
\[ \text{A “starred” bullet: \starredbullet.} \]
\[ \text{A variant of the euro symbol: \eurologo, } \varepsilon. \text{ Please note that the \textit command will not change the slant of this symbol, but } \textsl{\eurologo} \varepsilon \text{ will do it.} \]
\[ \text{Decos and logos: \noway, \danger, \textxswup, \textxswdown, \decoone, \decotwo, \decothreeright, \decofourright, \floweroneleft, \floweroneright, \lefthand, \righthand, \decosix, \bomb.} \]
\[ \text{Smileys: \grimace, \textthing.} \]
\[ \text{Leaves: \leafleft, \leafright, \leafNE, \aldineleft, \aldineright, \aldinesmall.} \]

Finally, some symbols are also provided in math mode, with other names:
\[ \text{$\text{\thething is a QED symbol for a false proof. Of course, you don’t need it!} \}$} \]
\[ \text{$\text{xwordsup, xworddown may be used as tags for a debatted statement, or for anything else.} \ X} \]
3.5 Mathematical encodings

Compatibility with amsmath

Fourier-GUTenber is compatible with the \texttt{amsmath} package, you no longer need to call \texttt{amsmath} \texttt{before} \texttt{fourier} (thanks to Walter Schmidt). The \texttt{amssymb} package will be useful only if the wanted symbols does not still exists in Fourier-GUTenber (see the list below). If you finally need \texttt{amssymb}, it is best to call it \texttt{before} \texttt{fourier}.

Standard \LaTeX\ math commands

All standard \LaTeX\ math commands are supported by Fourier-GUTenber. Of course, all these symbols have been redesigned in order to suit Utopia in terms of boldness, contrast and proportions. Greek is particularly concerned:

\begin{equation*}
a, \alpha, a, \alpha, n, \eta, n, \eta, c, \epsilon, c, \epsilon, \epsilon, A, \Lambda
\end{equation*}

but also delimiters (and plenty of others glyphs):

\begin{equation*}
- \left\{ \left\{ \left\{ \left\{ \left( \tilde{D} \right) \right\} \right\} \right\} \right\} - \left( \left( \left( \left( \tilde{D} \right) \right) \right) \right) -
\end{equation*}

\begin{equation*}
- \left\lfloor \left\lfloor \left\lfloor \left\lfloor \left\lfloor \tilde{D} \right\rfloor \right\rfloor \right\rfloor \right\rfloor \right\rfloor - \left\lceil \left\lceil \left\lceil \left\lceil \left\lceil \tilde{D} \right\rceil \right\rceil \right\rceil \right\rceil -
\end{equation*}

Mathematical alphabets

Latin alphabets have been stolen to Utopia...

\begin{itemize}
  \item Greek alphabet
    \begin{itemize}
      \item Slanted version
        \begin{equation*}
          \alpha \beta \gamma \delta \epsilon \zeta \theta \iota \kappa \lambda \mu \nu \xi \pi \rho \sigma \tau \upsilon \chi \psi \omega
        \end{equation*}
      \end{itemize}
    \end{itemize}

\begin{itemize}
  \item Variants: \varepsilon \vartheta \varkappa \varphi \varsigma \varphi
  \end{itemize}

\begin{itemize}
  \item Upright version
    \begin{equation*}
      \alpha \beta \gamma \delta \epsilon \zeta \theta \iota \kappa \lambda \mu \nu \xi \pi \rho \sigma \tau \upsilon \chi \psi \omega
    \end{equation*}
  \end{itemize}
The way these symbols may be obtained depends on the required option (sloped or upright). For instance, with

\[\alpha, \otheralpha, \Omega, \otherOmega\]

You get

\(\alpha, \alpha, \Omega, \Omega\)

with the sloped option and

\(\alpha, \alpha, \Omega, \Omega\)

with the upright option.

The \other prefix allows you to switch from one greek to the other.

Calligraphic alphabet (\mathcal command)

\(\mathcal{ABCDEFGHIJKLMNOPQRSTUVWXYZ}\)

Blackboard-bold alphabet (\mathbb command). No need to load amssymb to get it!

\(\mathbb{ABCDEFGHIJKLMNOPQRSTUVWXYZ}\)

Provided amssymb commands

- \leqslant \leq\texttt{\textless}\texttt{\textless}
- \geqslant \geq\texttt{\textgreater}\texttt{\textgreater}
- \intercal \texttt{\intercal}
- \nleqslant \not\leq\texttt{\not\textless}\texttt{\not\textless}
- \complement \texttt{\complement}
- \nexists \texttt{\exists}
- \smallsetminus \texttt{\smallsetminus}
- \leftleftarrows \texttt{\leftleftarrows}
- \rightrightarrows \texttt{\rightrightarrows}
- \subsetneqq \texttt{\subsetneqq}
- \curvearrowleft \texttt{\curvearrowleft}
- \curvearrowright \texttt{\curvearrowright}
- \blacktriangleleft \texttt{\blacktriangleleft}
- \blacktriangleright \texttt{\blacktriangleright}
- \nexists \not\exists \texttt{\not\exists}
- \notowns \texttt{\notowns}
- \varsubsetneq \texttt{\varsubsetneq}
- \vDash \texttt{\vDash}
- \blacksquare \texttt{\blacksquare}

Fourier-GUTenberg extended commands

The \widehat and \widetilde commands have been extended (like in yhmath).
Fourier-GUTenberg specific commands

The following commands are provided by Fourier-GUTenberg.

- \varkappa, \varvarrho, \varpi, \varpartialdiff: \kappa, \varrho, \varpi, \varpartialdiff.
- \parallelslant et \nparallelslant: \|, \|.
- \iint, \iiint, \oiint, \oiiint, \slashint: \iint, \iiint, \oiint, \oiiint, \slashint.

Finally \widearc and \wideOarc

3.6 Usage of commercial typefaces

The expert, oldstyle or fulloldstyle options, if usable, provides these complementary commands:

- \textsb \sbseries semi-bold;
- \textblack \blackseries extra-black;
- \texttitle \titleshape titling (incomplete T1 encoding);
- \oldstyle to switch to the oldstyle digits with the expert option;
- \lining to switch to the lining digits with the oldstyle option.