

# The New Font Project: T<sub>E</sub>X Gyre

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## Abstract

In this short presentation, we will introduce a new project: the “LM-ization” of the free fonts that come with T<sub>E</sub>X distributions. We will discuss the project objectives, timeline and cross-LUG funding aspects.

## 1 Introduction

The New Font Project is a brainchild of Hans Hagen, triggered mainly by the very good reception of the Latin Modern (LM) font project by the T<sub>E</sub>X community. After consulting other LUG leaders, Bogusław Jackowski and Janusz M. Nowacki, aka “GUST type.foundry”, were asked to formulate the project.

The next section contains its outline, as prepared by Bogusław Jackowski and Janusz M. Nowacki. The remaining sections were written by us.

## 2 Project outline

Our aim is to prepare a family of fonts, equipped with a broad repertoire of Latin diacritical characters, based on the freely available good quality fonts. We think of an “LM-ization” of freely available fonts, i.e., providing about as many diacritical characters per font as we prepared for the Latin Modern font package (ca. 400 characters) which would cover all European languages as well as some non-European ones (Vietnamese, Navajo).

Since the provided character sets would be so close, such “LM-ized” fonts would work with all the T<sub>E</sub>X packages that the LM fonts work with, which would ease their integration. The result would be distributed, like the LM fonts, in the form of PostScript Type 1 fonts, OpenType fonts, MetaType1 sources and the supporting T<sub>E</sub>X machinery.

We would like to emphasize that the preparing of fonts in the OpenType format is an important

aspect of the project. OpenType fonts are becoming more and more popular, they are Unicode-based, can be used on various platforms and claim to be a replacement for Type 1 and TrueType fonts. Moreover, Type 1 fonts were declared obsolete by Adobe a few years ago.

Since TFM format is restricted to 256 distinct character widths, it will still be necessary to prepare multiple metric and encoding files for each font. We look forward to an extended TFM format which will lift this restriction and, in conjunction with OpenType, simplify delivery and usage of fonts in T<sub>E</sub>X.

We especially look forward to assistance from pdfT<sub>E</sub>X users, because the pdfT<sub>E</sub>X team is working on the implementation on the support for OpenType fonts.

An important consideration from Hans Hagen: “In the end, even Ghostscript will benefit, so I can even imagine those fonts ending up in the Ghostscript distribution.”

The idea of preparing such font families was suggested by the pdfT<sub>E</sub>X development team. Their proposal triggered a lively discussion by an informal group of representatives of several T<sub>E</sub>X user groups—notably Karl Berry (TUG), Hans Hagen (NTG), Jerzy Ludwichowski (GUST), Volker RW Schaa (DANTE)—who suggested that we should approach this project as a research, technical and implementation team, and promised their help in taking care of promotion, integration, supervising and financing.

The amount of time needed to carry out the task depends on the number of fonts to be included in the collection, but it can be safely estimated that a 4-font family (regular, italic, bold, and bold italic) can be prepared within 1–2 months, depending on the state of original material), which, for the collection of fonts mentioned below, would mean that the project can be accomplished within about two years. Assuming that the launch of the project could be made in the middle of 2006, the conclusion of the first stage of the project might be expected by the end of 2008.

The following fonts are presently considered worthy of enhancement:

1. The collection of 33 basic PostScript fonts, donated by URW++ and distributed with Ghostscript, consisting of eight 4-font families:
  - URW Gothic (i.e., Avant Garde)
  - URW Bookman
  - Century Schoolbook
  - Nimbus Sans (i.e., Helvetica)
  - Nimbus Sans Condensed (i.e., Helvetica condensed)
  - Nimbus Roman (i.e., Times)
  - Nimbus Mono (i.e., Courier)
  - URW Palladio (i.e., Palatino)
 and one single-font “family”:
  - URW Chancery (i.e., Zapf Chancery)
 (Symbol and Zapf Dingbats fonts are left out.)
2. Donated by Bitstream (4-font families):
  - Charter
  - Vera
3. Donated by Adobe (4-font family):
  - Utopia
4. Other families donated by URW++:
  - Letter Gothic
  - URW Garamond

Perhaps other interesting free fonts will emerge in the future.

As to the budget — for the fonts listed above — there are altogether thirteen 4-font families and the 1-font URW Chancery. We would be satisfied if we could get a support of 1,500 EUR per a 4-font family and 500 EUR per a 1-font family. In the case of the fonts listed above this adds up to 20,000 EUR. We propose that the funding is made step-wise, i.e., the payments are made after the release of an enhanced family of fonts.

Obviously, there is scope for a second stage: the fonts can be further developed, as one can think for

example of adding cap-small-caps, old style digits, proportional digits, and more. Once the first stage of the project is finished, we could embark on further enhancements. This would be somewhat simpler, but still a laborious task; we estimate the effort to be about 60–70% of the first stage.

### 3 Funding

The project can be divided into three stages:

- stage 1: combining existing fonts into LM compatible layouts and identifying gaps
- stage 2: filling in the gaps
- stage 3: math companion fonts

For these the estimated fundings needed are:

- stage 1: around 20,000 EUR
- stage 2: around 15,000 EUR
- stage 3: unknown

The exact figure for the second stage depends on what is needed and missing. We imagine the project to be extended with additional stages in order to bring more scripts into Open Type and/or to clean up other fonts as well.

The current financial state of the project:

- TUG India: 2,000 USD for the first year of the project and — if possible — a contribution for the next year.
- CSTUG: 500 EUR per year for the project duration, and expenses directly connected with implementing good Czech and Slovak support.
- NTG: 20% of the project costs, i.e., 4,000 EUR for the first stage.
- DANTE: 7,500 EUR this year; additional funding will be proposed at the September user group meeting.
- GUST: local infrastructure and expenses of font developers.
- TUG: positive but the amount is yet unknown, depends on contributions to the project fund, more info later this year.

Since the first stage runs this year and next year (start: May 2006) and since payments will take place after delivery of each completed font family, we can safely conclude that project expenses in 2006 can be covered and given the above we can also be confident that the rest of the first stage is secured.

The second stage is partly secured as well. We will try to broaden funding as soon and as much as possible. It would be good if this project can also take care of the needs of Indian, Greek, Cyrillic, Hebrew and Arab scripts, but we’ll have to see . . .

The suite of fonts will be officially presented on a special font CD for members of user groups.

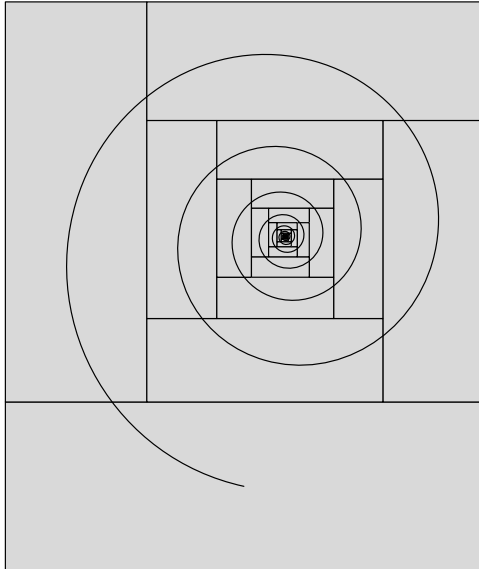


Figure 1: The TeX Gyre logotype

#### 4 Co-ordination

This will done by DANTE e.V. in close co-operation with (at least) NTG, GUST, and TUG.

#### 5 Late-breaking news: the name of the game

Nowhere above is explained the mysterious “TeX Gyre” which appears in the title. After this paper, consisting of the preceding sections, was presented at the BachoTeX 2006 conference, a discussion on how to name the collection of the New Font Project fonts was started by Bogusław Jackowski. A collective name for the project itself as well as names for the individual font families were looked for. In another lively mail exchange among the above people and others, between 23<sup>rd</sup> May 2006 and 5<sup>th</sup> June 2006, the final proposal was hammered out.

Some of the collective names proposed: TeX-Modern, TeXSurge, TeXFountain, TeXSuper, TeX Font Foundry, TeXelent, not to mention stranger concoctions for individual families like TeXOnitalap (Palatino reversed) or — for Bookman reversed — TeXMankoob. A minimalist proposal of TeXF prevailed for a while, then TeX Fountain Collection fought against TeX Fount and even TeXFun was proposed until TeX Gyre was coined by Karl Berry.

This was liked by Bogusław: it nicely plays with the logotype he used in his presentations of the LM project, Figure 1. It is meant to symbolize the never-ending striving for perfection as well as the “LM-ization” of the families.

The reader might not have previously encountered the word “gyre”. For pleasure, here are a few dictionary explanations and examples of use in literature and on the web.

- the Collins Dictionary of the English Language defines “gyre” as:
  - a circular or spiral movement or path
  - a ring, circle, or spiral
- the Webster’s Third New International Dictionary, Unabridged, says the following:
  - to cause to turn around: REVOLVE, SPIN, WHIRL; to move in a circle or spiral
  - circular motion by a moving body: REVOLUTION; a circular or spiral form: RING, VORTEX
  - in Scottish: a malignant spirit or spook
- more entertaining nearby terms from Webster’s:
  - *gyre carline*, in Scottish: WITCH, HAG
  - *gyrencephalate*: a group of higher mammals: having the surface of the brain convoluted
- Wikipedia (<http://en.wikipedia.org/wiki/Gyre>) reports this:
  - a gyre is any manner of swirling vortex
  - W. B. Yeats uses the word in many of his poems, including “The Second Coming”
  - Lewis Carroll used the word as a verb in the opening stanza of his poem “Jabberwocky”:
 

’Twas brillig, and the slithy toves  
 Did gyre and gimble in the wabe;  
 All mimsy were the borogoves,  
 And the mome raths outgrabe.

 defining it as “to go round and round like a gyroscope”
  - “The Widening Gyre”, home of slistuk, the UK survival listserver (<http://dnausers.d-n-a.net/dnetIULU>), describes itself as “A site for the preparedness minded”
  - Gyre, The Old Sow Whirlpool (<http://www.oldsowwhirlpool.com>), the biggest whirlpool in the Western Hemisphere, of over 70 meters in diameter, on the border of Canada and the United States, on the east coast of North America.

We will spare the reader’s patience by not presenting the details of the discussion leading to the names of the individual font families. The general motivation when trying to find the names was that people dealing with fonts are likely to be familiar

with the original PostScript names, so names resembling the original ones were desired.

We first tried to find the shortest English nouns that have some relationship to the original PostScript names, with possibly positive or neutral connotations, but this proved futile. In the end, Latin words were adopted. The result is presented in the following table (check the meanings at, e.g., <http://archives.nd.edu/latgramm.htm>).

Original URW name	PostScript name OpenType name TFM name root*
URW Gothic L	TeXGyreAdventor TeX Gyre Adventor qag
URW Bookman L	TeXGyreBonum TeX Gyre Bonum qbk
Nimbus Mono L	TeXGyreCursor TeX Gyre Cursor qcr
Nimbus Sans L	TeXGyreHeros TeX Gyre Heros qhv
URW Palladio L	TeXGyrePagella TeX Gyre Pagella qpl
Nimbus Roman No9 L	TeXGyreTermes TeX Gyre Termes qtm
Century Schoolbook L	TeXGyreSchola TeX Gyre Schola qcs
URW Chancery L	TeXGyreChorus TeX Gyre Chorus qzc

\* For example, TFM files for the members of the Pagella family are named `qplr.tfm`, `qplri.tfm`, `qplb.tfm`, `qplbi.tfm` for the regular, italic, bold and bold italic faces, respectively. Encodings will be specified as a prefix such as `ec-`, as in Latin Modern.

The families listed in items 2, 3 and 4 of Section 2 have not yet been given T<sub>E</sub>X Gyre names. We are going to continue in the same spirit.

At the time of this writing (November, 2006), the Pagella and Termes families are at version 1.00, the Bonum family is at version 0.995 and should very soon be fully released, i.e., arrive at version 1.00. They can be found at <http://www.gust.org.pl/e-foundry/tex-gyre>. There is more to the fonts than was promised in Section 2:

- over 1100 glyphs are available, including Cyrillic (though this was just carried over from the original without more ado);
- the complete Greek alphabet (for technical purposes rather than typesetting in Greek) is included — comments are welcome;
- cap-small-caps and old style digits are provided; this was initially planned for the second stage of the project.

Watch that space and enjoy!

P.S. X<sub>Y</sub>T<sub>E</sub>X (<http://scripts.sil.org/xetex>), an addition to the T<sub>E</sub>X family developed relatively recently by Jonathan Kew, shows that the decision to provide T<sub>E</sub>X Gyre OpenType font versions was a good one: X<sub>Y</sub>T<sub>E</sub>X already uses the OTF version of the LM fonts. Now also the OTF T<sub>E</sub>X Gyre fonts bring the advantages of this format to the T<sub>E</sub>X world ...

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## Jackowocky

’Twas brillig and the slithy Poles  
Did GYRE and GIMBLE in the wabe  
All mimsy were the borogoves  
And the mome raths OUTGRABE

With apologies to Lewis Carroll (and Poland!)  
—Chris Rowley

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