The proposed TeX Directory Structure

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The past has seen many discussions why TeX is conceived to be so difficult. Four years ago, at EuroTeX '91 in Paris, we even had a panel on "Why is TeX unusable?" A basic criticism that came up in almost all these discussions was

a. the difficulty to install TeX and maintain the installed system afterwards,

b. that there is no agreement what components belong to an installed TeX system, and

c. that the structure of TeX installations is too different from site to site, thereby making it difficult to maintain a TeX installation.

Over the last 15 months, a TUG working group has been busy preparing a draft for a standard TeX Directory Structure (TDS). We hope to serve the TeX community by attacking item (c) mentioned above. In fact, when the draft is accepted, we hope that item (a), the difficulty to install and maintain TeX systems, will be reduced as well.

The TDS draft addresses primarily the TeX system administrator at a site and people preparing TeX distributions. It explicates where files of a package will reside in a final installation, thus making it easier for the administrator to find his or her way around. If someone is responsible for TeX installations on more than one platform, it will also reduce the needed time to find files as the structures will all be the same.

One TeX system can be used (e.g., via NFS mount or mounted from a CD-ROM) for both Unix-based workstations and DOS-based PCs, thereby reducing the maintenance time again. To support that aim, only the location of implementation-independent files are fixed; locations for implementation- and platform-dependent files are only recommended.

If developers of a package can assume a common directory structure, the package's installation can be automated, or at least the instructions can be made very specific. Last, but not least, many users will be interested in a defined installation structure, as they want to have a look at the system they are using.

The basic idea behind the TDS is that the files from a distributed package may fall in different categories: macro files for one (or even more) TeX formats, fonts and font metrics, auxiliary files for utility programs, etc. For each category, a package gets

assigned a set of directories where its files are placed. If more than one file exists for a category, a whole (exclusive) directory is allocated for that package. Otherwise this file is placed in a directory named `misc`.

When an update for such a package arrives, the current files in the assigned directories (or the one file in `misc`) may be thrown away and the new ones may be installed. (It's as – or even more – important to know which files to remove on update, as to know which files to install. Everybody who has maintained any system for some time has stumbled over that problem.)

This distribution of files over a directory tree implies that both TEX ports and utility programs (like `DVI` drivers) must be able to search a file recursively in a directory tree. A survey among developers showed that most widely used TEX software supports subdirectory searching already; other implementations will get it soon. Actually, the majority of developers were not willing to spend much work in sophisticated cache and search strategies, so the proposed layout pays attention to that restriction. As always, one had to make compromises.

Members of the working group are Barbara Beeton, Karl Berry, Vicki Brown, David Carlisle, Alan Jeffrey, Pierre MacKay, Rich Morin, Sebastian Rahtz, Joachim Schrod, Elizabeth Tachikawa, Ulrik Vieth, and Norman Walsh (chair). These members have either years of experience in maintaining TEX systems or they are active in preparing distributions for important TEX packages or they are engaged in the preparation of complete TEX distributions (or all of these points). So we are reasonably confident that our proposal is not hot air; it is in use already and we hope that it will be utilized by all important TEX distributions in the future.

The current TDS draft is available on any CTAN host, in various formats (LATEX, `DVI`, PostScript, etc.) It is placed in subdirectories of `/tex-archive/tds/`. Any feedback to that draft should be sent by email to `twg-tds@shsu.edu` or by paper mail to the chair of the working group (Norman Walsh, O'Reilly & Associates, Inc., 90 Sherman Street, Cambridge, MA 02140, USA).