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☞ GREETINGS FROM THE TUG PRESIDENT
☞ Nelson H.F. BEEBE

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Greetings from the TUG President*

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Résumé Cet article présente les récents ou proches événements de la communauté TeX mondiale. Ceci inclut les congrès, les nouveaux ouvrages publiés, l'accès aux archives, les nouvelles versions de TeX et METAFONT, les derniers développements en matières de polices de caractères, et quelques matériels périphériques de sortie.

Abstract *This paper summarizes recent and coming events in the TeX world, including conferences, new books, improved electronic access to TeX archives, new TeX and METAFONT software, new font developments, and some noteworthy new TeX output hardware.*

1. Introduction

1990 is a banner year for the TeX Users Group. We enter the second decade of TeX with a strong conference schedule:

- the annual TUG meeting in College Station, Texas, in June;
- the first international TUG meeting in Cork, Ireland, in September;
- quarterly meetings of the UK-TeX group;
- the annual French GUTenberg meeting in Toulouse, in May;
- the Dutch SGML-TeX90 meeting in Groningen, in August; and
- two German DANTE meetings: Düsseldorf in March and Göttingen in October.

*Ces salutations de la part du président du TUG (TeX Users Group) ont été présentées à la communauté GUTenberg lors du congrès TeX et les Arts Graphiques, à Toulouse, le 15 mai 1990. (ndlr)

Don Knuth announced at the August 1989 TUG meeting [11, 13] that he would produce TeX 3.0 and METAFONT 2.0. These will contain extensions for support of hyphenation of up to 256 languages simultaneously, eight-bit character sets, and a greatly improved ligature mechanism. The coding was completed in November, and by late spring following a suitable beta test, the new versions should be available to everyone. This is an important development, because it should greatly improve the usability of TeX for languages other than English. There are *no* changes to the DVI file format, so DVI drivers need not be updated for the new versions of TeX and METAFONT.

Frank Mittelbach and Rainer Schöpf are working on a redesign of L^AT_EX to remove limitations such as fragile arguments, and excessive dependence of style files on particular fonts, paper sizes, and the English language. They also are addressing the problems of font specification and preloading, better control over float positioning, multi-page tables, and multi-column output. They are being assisted in their work by feedback from a group of international L^AT_EX experts communicating via electronic mail. This work too should greatly improve the adaptability and usability of L^AT_EX for languages other than American English.

2. New T_EX Literature

At the 1989 GUTenberg meeting, Raymond Seroul came with some of the first copies of his excellent new book, *Le Petit Livre de T_EX* [20]. I have been delighted with it, and the TUGboat editors and TUG board are investigating the possibility of having an English translation produced, in order to make it available to a wider audience.

The TUG conference proceedings are for the first time carried in a regular issue of TUGboat, volume 10 number 4. It is an impressive issue, over 300 pages long. We hope this will establish a tradition for future years, and record the proceedings for a wider audience than has been reached in the past.

Wayne Sewell attended the 1989 TUG meeting for the first time, just as his book [21], the first on WEB programming, appeared. I hope that TUGboat will be able to have more articles on the literate programming [10] that WEB exemplifies.

Norman Ramsey's SpiderWeb [18] is described in the Literate Programming section of *Communications of the ACM*. SpiderWeb is a generalization of the original WEB system, but starts from Silvio Levy's CWeb. It abstracts the input parsing and output formatting into grammars that are processed automatically into program code for versions of TANGLE and WEAVE. This has made it possible to support WEB-style literate programming in several languages (C, AWK, Ada, SSL, and others) without having to expend great effort in re-implementing TANGLE and WEAVE from scratch.

Two independent implementations of WEB for Fortran have been reported in recent issues of the T_EXhax bulletin board [3, 15].

David Buerger's new book on L^AT_EX [6] is a good introduction to L^AT_EX at a level that is more suitable to many beginning users than the original L^AT_EX book [16] may be. The appendices with sample documents and fonts are most helpful, and there is a good glossary of typesetting concepts. The book also has exercises (with answers in an appendix), and would be a good choice for beginning L^AT_EX courses. With it, most users should be able to start producing modest documents on the first day.

I know of two other books, one on the details of T_EX programming, and another on L^AT_EX, that are in preparation. Let us hope we see them published this year.

There are several other books on T_EX and L^AT_EX in German and French that have been published recently [1, 4, 5, 14, 19, 22] plus one conference proceedings [7].

3. Electronic Access to T_EX Archives

One of my goals as TUG President is the improvement of electronic retrieval of T_EXware, particularly for the many users who have electronic mail access, but no Internet FTP access. As the new books of Frey and Adams [9] and of Quarterman [17] show, electronic mail can now reach several countries in Asia, and even a few in Africa. I hope that the recent political changes in Eastern Europe open paths there as well.

I have implemented a modified version of the NETlib system [8]. It is tentatively called TUGlib, and is operational on a local machine, providing access to the T_EX collections on science.utah.edu; it is not yet available to the public. TUGlib could be moved to the home of the

T_EX master archives. Michael DeCorte at Clarkson University has independently implemented an excellent e-mail server for the Clarkson T_EXware collection on `sun.soe.clarkson.edu`.

Each of these systems has features the other lacks, and further investigation is needed before we make a choice that will be offered to the public. I have initiated discussions about this with the people at Stanford who maintain `labrea.stanford.edu`, which is likely to be the home of the T_EX master archives, following the retirement in August 1989 of the venerable DEC-20, `score.stanford.edu`, which served the T_EX community so well for T_EX's first decade.

TUGlib will provide for determining the postal and e-mail address of any TUG member via a query like `whois Nelson Beebe`. There is no reason why the address data bases of the various national and language groups in the T_EX community could not be included in this service.

4. Font Developments

At the 1989 TUG meeting, Kinch Computer Company announced the availability of PostScript fonts in 300-dpi `pk` file format, which are tentatively being called AP-T_EX fonts. We licensed a copy of these, and I have developed a set of style files for T_EX and L^AT_EX that make it trivial for our users to switch from Computer Modern to some other font family by means of a single T_EX `\input` statement or a L^AT_EX `\documentstyle` option. After a suitable test period, I expect that these can become generally available.

Note that having PostScript fonts in `pk` file format means that they can be

used with almost any DVI driver and any output device (assuming that fonts of the required resolution are available), including screen previewers like `xdvi` in the X Window system on workstations and personal computers. This solves an important problem of how to proof phototypesetter output on low-resolution devices when fonts other than Computer Modern are required.

There is hope that work reported by Victor Ostromoukhov at the 1989 GUTenberg meeting on the development of PostScript outlines for fonts from METAFONT, together with recent work by Graham Toal in Edinburgh, and Shimon Yanai at Technion in Haifa, will lead to a merging of the power of METAFONT and PostScript.

In January, Don Knuth announced [12] the virtual font mechanism with support software. This is based on work that David Fuchs did in 1983, but which never became part of the public T_EX distribution. It allows the construction of new fonts that are specified by description files akin to METAFONT property list (`.pl`) files, in which the characters are obtained by combining characters from other fonts (which themselves may be virtual fonts) with arbitrary DVI commands, including rules and even `\special{}`s. I wish that he had used the term 'composite font', which is, I believe, a better description; 'virtual font' is already in use in my DVI driver family collection with the meaning of 'memory-mapped' font. Graham Asher [2] responded with a description of a mechanism that he and Graham Toal developed in Edinburgh in 1987 and, regrettably, did not publish; their scheme is worthy of further study. These developments are important because they offer a straightfor-

ward way for end users of T_EX to create special fonts with new characters, particularly accented characters, for which there are national and regional variations in accent positioning. The general availability of mechanisms like this should be of particular significance to non-English typesetting. Both schemes require changes in DVI driver software, and since there are many more such programs, it will take longer for them to be widely implemented.

Finally, the earlier-cited work of Mittelbach and Schöpf on the regularization of font specifications for L^AT_EX is also applicable to T_EX.

5. Hardware Developments

At the 1989 TUG meeting, an Australian vendor announced the first laser printer to contain a DVI file translator, allowing T_EX DVI files to be sent directly to the printer.

The 29 January 1990 issue of InfoWorld on pages 46–47 carried an advertisement for a series of controller boards for IBM PC and Macintosh II systems that can turn 300-dpi Hewlett-Packard LaserJet Series II and Apple LaserWriter II printers into 400-dpi, 600-dpi, 800-dpi, and 1000-dpi PostScript printers that the vendor terms “plain paper typesetters”. If these are found to work satisfactorily, it seems to me that this announcement represents a very important advance for the T_EX community. I would very much like to hear from anyone who tries any of these products. I am curious about the extent to which toner granularity and paper roughness impact the apparent output resolution.

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