

<h2>Calendar</h2>

1986

- Oct 31 Deadline for submission of titles/short abstracts, 1987 TUG Meeting: \TeX for the Humanities
- Nov 7 Japanese \TeX Users Group meeting, Keio University, Keio, Japan (see page 192)
- Nov 30 First selection of papers for special program, 1987 TUG Meeting: \TeX for the Humanities
- Dec 86 **METAFONT**, \TeX and the Humanities, Paris, France (see announcement, page 191)

1987

- Jan 19 TUGboat Volume 8, No. 1: Deadline for submission of manuscripts
- Jan 19-23 INRIA Course/Structures for Documents, Aussois, Savoie, France (see announcement, page 191)
- Jan 31 Deadline for submission of long abstracts, 1987 TUG Meeting: \TeX for the Humanities
- Jan 31 Deadline for items to be included in preliminary program for general-interest sessions, 1987 TUG Meeting
- Feb 28 Final selection of papers for special program, 1987 TUG Meeting: \TeX for the Humanities
- Apr 15 Deadline for \TeX copy for preprints, 1987 TUG Meeting: \TeX for the Humanities

- May 4 TUGboat Volume 8, No. 2: Deadline for submission of manuscripts (tentative)
- Jul 27-31 SIGGRAPH, Anaheim, CA. For information, contact the ACM Conference Office, Chicago, IL; 312-644-6610

**1987 TUG Annual Meeting
West Coast, early to mid-August**

- Day 1 General program; introduction for new members
- Days 2-3 Technical program of refereed papers: \TeX for the Humanities
- Days 2-3 General-interest technical program
- Day 3 Deadline for machine-readable copy of refereed papers for Proceedings
- Days 4-5 Short course
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- Sept 14 TUGboat Volume 8, No. 3: Deadline for submission of manuscripts (tentative)
- Sept 28 - Oct 1 Conference on Electronic/Desktop Publishing, San Francisco, CA. For information, contact National Computer Graphics Association, Fairfax, VA; 703-698-9600

For additional information on the special program, \TeX for the Humanities, being offered at the 1987 annual meeting, see page 131. For additional information on other events listed above, contact the TUG office (401-272-9500, ext. 232) unless otherwise noted.

INRIA Course**Structures for Documents****Course directors:**

Jacques André, INRIA/IRISA, Rennes
 Vincent Quint, INRIA/IMAG, Grenoble

Lecturers:

J. André INRIA/IRISA, France
 R. Furuta University of Maryland, U.S.A.
 R. Ingold Federal Institute of Technology at
 Lausanne, Switzerland
 V. Joloboff Bull Corporate Research Center,
 France
 I. Levy Italsoft, France
 P. Norrish University of Reading, U.K.
 V. Quint INRIA/IMAG, France
 R. Southall XEROX PARC, U.S.A.
 J. Virbel LSI-University of Toulouse, France

Aims

A document may naturally be described as a structure. As an example, a book is split up into chapters, a chapter into sections, sub-sections, paragraphs, and so on. However, this structure might not be so obvious at a deeper level.

This course will focus on

- structured elements of documents, from the computer specialist point of view as well as for the publisher,
- systems and standards for editing, formatting and transmitting structured documents.

The course will be based on lectures of 6 hours dwelling on the computer angle whereas the user point of view will be particularly developed during shorter conferences.

This course concerns researchers and computer scientists involved in the concepts and tools for manipulating structured documents.

Program**Lectures**

R. Furuta: Concepts and models for structured documents (E)
 V. Quint: Systems for manipulating structured documents (F)
 V. Joloboff: Standards and representation of structured documents (F)
 B. Reid: Electronic mail transmission of structured documents (E)

Conferences

J. André: Why structured documents ? (F)
 R. Ingold: Structure recognition and optical reading (F)
 I. Levy: Logical markup of text for publishers (F)
 P. Norrish: Semantic structures and typology of documents (E)
 R. Southall: Interfaces between the designer and the document (E)
 J. Virbel: Textual structure - a linguistic approach (F)

(E) in English.

(F) in French.

General Information

Location: Aussois, Savoie, France.

Date: January 19-23, 1987.

Registration fees: lodging inclusive

FF 5000

FF 3200 (University)

Registration procedures:

The course attendance is limited to 60 persons.

For further information and registration write to:

INRIA Public Relations Department

Courses and seminars

Domaine de Voluceau, Rocquencourt

B.P. 105

78153 Le Chesnay Cedex

France.

METAFONT, T_EX and the Humanities

Although initially designed for mathematical and text processing, T_EX is suitable for humanities as well, thanks to its ability to process footnotes, exotic languages, fonts, etc.

A seminar on T_EX and the Humanities will be organized by GUT (the French *Groupe des Utilisateurs de T_EX*) at the end of 1986 or at the beginning of January 87, in Paris, France.

Papers on experiences in using T_EX for humanities are welcome. For more details, please contact

Jacques André

IRISA/INRIA

Campus de Beaulieu

F-35042 Rennes, France

Japanese T_EX Users Group

Yoshio Ohno
Keio University

The Japanese T_EX Users Group was organized at the end of the last year as a special interest group of JSSST (Japan Society for Software Science and Technology). The members of the executive committee are

Yoichi Kawabata (Canon, Inc.),
Nobuko Kishi (IBM Japan, Ltd.),
Ichiro Ogata (Electrotechnical Laboratory),
Yoshio Ohno (Keio University — Secretary),
Toshiharu Ono (ASCII Corporation), and
Nobuo Saito (Keio University — Chairman).

The number of members is approaching 300. Regular meetings have been held twice so far. The talks given are listed below.

First meeting (20 March, at IBM Japan, Ltd.)

- The state of the art of T_EX system (Nobuo Saito)
- How to install T_EX (Yoshio Ohno)
- T_EX on UNIX and MS-DOS (Toshiharu Ono)

Second meeting (17 July, at Keio University)

- Multi-lingual word-processing research at UCLA (Daniel M. Berry)
- Introduction to L^AT_EX (Nhut Nguyen)
- Printing Japanese language using T_EX (Masaaki Nagashima and Yoichi Kawabata)
- POSTSCRIPT tutorial (Ichiro Ogata)

About 130 members attended each meeting. The next meeting is scheduled as follows.

Third meeting (7 Nov., 2:30 pm, at Keio University)

- PLAIN macros: how and why do they work? (Ryoichi Kurasawa)
- On the METAFONT system (Yasuki Saito)

For more information, write to

Yoshio Ohno
Institute of Information Science
Keio University
1-1 Hiyoshi 4-chome
Kohoku-ku Yokohama
223 Japan.

T_EX in Europe

Summer 1986

Barbara Beeton

Two conferences held this summer in Europe were of interest to T_EX users: T_EX for Scientific Documentation (Strasbourg, June 19–21) and Markup '86 (Luxembourg, July 8–10). I was fortunate in being able to attend both, and to meet many active T_EX users and find out about their interests and how they differ from what's happening in North America.

Jacques Désarménien was a knowledgeable and gracious host in Strasbourg. The program was well-organized, and deservedly well-attended.

Most presentations dealt not with the details of T_EX, but with systems built around T_EX. Particularly in evidence were pre-processors directed at making T_EX easier for the novice or casual user.

User environments described by the speakers were principally workstation-based, with preview capability as an integral part of the design. At Berkeley, work is being done to make the preview itself interactive, feeding back corrections into the underlying T_EX source file; so far only text is handled in this manner, while mathematical expressions are being treated as single objects.

Several presentations dealt with complete document distribution and delivery systems, both electronic and print-oriented. The form in which a document is stored in such a system could be either T_EX source, .DVI files, or some other form, e.g. SGML (see below).

SGML and other non-T_EX models were adopted by some researchers because they implement underlying document structures more clearly than does plain T_EX. A dissenting view came from Michael Ferguson, who suggested that one should remember that *people* write documents, and he felt that SGML tends to forget this.

Multilingual requirements, both scholarly and mundane, were the basis for several presentations. This general topic, and in particular the problem of using T_EX to compose non-English, especially non-Latin alphabet, texts, became the focus of a "birds-of-a-feather" session; see the invitation from Reinhard Wonneberger, page 132, to form a philology special interest group.

Finally, Richard Southall described his experience using METAFONT as a design tool in trying to create a new typeface; his illustrations clearly showed that the assumptions brought by professional type designers to the design process are

not the same as those current in the \TeX world. Whether there will emerge skilled type craftsmen who are also fluent in the uses and capabilities of the \TeX tools, only time will tell.

Several vendors displayed their products or services, among them Addison-Wesley (Micro \TeX and publications), Personal \TeX (PC \TeX), Te.Co.Graf. (Easy \TeX , a pre- \TeX , interactive formula processor for IBM PCs), and H. Stürtz (phototypesetter services).

The proceedings of the Strasbourg conference will be published by Springer Verlag this fall, as volume 236 of their series *Lecture Notes in Computer Science*. (A listing of the contents appears below.) The TUG office will have a supply for sale.

This was the second "Euro \TeX " conference on the subject of scientific documentation, the first having taken place in Como, Italy, in April 1985. Two future meetings are in the tentative planning stages: Germany in 1987 (to be organized by Bernd Schulze), and England in 1988 (Malcolm Clark).

Markup '86 was sponsored by the Graphic Communications Association and dealt with electronic manuscript preparation, the Standard Generalized Markup Language (SGML) and technical documentation issues. SGML is not a typesetting language, but a methodology for logical document markup that will enable document content to be fully specified for later composition by "one's favorite formatter" (as described by Roberto Minio, of Springer and Carnegie-Mellon, who further insisted that the formatter "must" be \TeX). Some reasons were given why a user should want to use SGML rather than a formatter:

- a document may have to be communicated among users who have different formatters;
- separating the user from the formatter allows him to concentrate on the logical structure and content of the document, rather than on its typeset appearance;
- the logically-coded document can be formatted to different style specs for different uses, as needed.

The last two considerations have been implemented in \TeX in macro packages such as L \TeX ; the problem of the first point remains, that it is not easy to translate \TeX input to other formatting languages (and vice versa).

The goal of the committee which developed SGML was to create a standard that would be usable by authors and editors, acceptable worldwide, amenable to validation by field testing, and

(relatively) independent of problems of technological incompatibility. (A report by Larry Beck, TUG's committee liaison, appears on page 132.)

About ten products based on SGML principles or of interest to SGML users were on display. There was some overlap with the vendors who were in Strasbourg, and at least three of the products were \TeX -based. (A description of one of these, the Tiger- \TeX Workstation, appears on page 194.)

An active SGML Users' Group exists; information about the organization can be obtained from

SGML Users' Group
 c/o Peter V. Howgate, Secretary
 Information Services Division
 BPCC Graphics Ltd.
 Slack Lane
 Derby DE3 3FL, U.K.

Contents: Proceedings of " \TeX for Scientific Documentation" Strasbourg, June 19-21, 1986

- J. Désarménien*: Introduction
W. Appelt: Running \TeX in an interactive text processing environment
A. Brüggeman-Klein, P. Dolland, A. Heinz: How to please authors and publishers, a versatile document preparation system at Karlsruhe
P. Chen, M. Harrison, J. McCarrell, J. Coker, S. Procter: An improved user environment for \TeX
P. Chen, J. Coker, M. Harrison, J. McCarrell, S. Procter: The VORT \TeX document preparation environment
E. Crisanti, A. Formigoni, P. La Bruna: Easy \TeX : Towards interactive formulae input for scientific document input with \TeX
M. Ferguson: A multilingual \TeX
M. Ferguson: INRST \TeX
L. Gallot: ASHT \TeX : An interactive previewer for \TeX or The marvellous world of ASHT \TeX
H. Le Van, E. Terrini: A language to describe formatting directives for SGML documents
D. Lucarella: Retrieving math formulae
P. Penny, J.-L. Henriot: Integrating \TeX in an EDDS with very high resolution capabilities

- H. Petersen: A \TeX -based document factory in a university environment: Processing model, implementation steps, experiences
- V. Quint, I. Vatton, H. Bedor: GRIF: An interactive environment for \TeX
- J. Röhrich: Abstract markup in \TeX
- R. Southall: Designing a new typeface with **METAFONT**
- R. Wonneberger: "Verheißung und Versprechen", A third generation approach to theological typesetting

The Tiger- \TeX Workstation

Susanne Lachmann
Gesyscom GmbH, Aachen

Overview

The application target of the TIGER- \TeX Workstation is the composition of easy to use tools for the handling of text, images and graphics in one system and the automatic integration of these different types of information into \TeX -formatted documents.

"TIGER" is the short form for "TeX-based Image- and Graphics-integration and Enhanced Representation functions".

This article describes the state of implementation, the available tools and further developments of TIGER.

Basic Concepts

The TIGER- \TeX Workstation is the realisation of the idea of a workbench for document preparation. The set of tools is subdivided into toolboxes, each of these for the handling of a different type of information as text, image or graphic.

The tools of each toolbox are grouped dependent on the goal of actual work (i.e. editing-tools, formatting-tools, representations-tools etc.). These tool-groups correspond to different data objects which we name as manuscript, typoscript, printscript I and printscript II.

The manuscript-file contains the logically structured document content, that is the text intermixed with logical markup tags, to describe the logical structure of the document. Logical document

markup subdivides the document content into logical objects, for example headlines, chapters, paragraphs, sub-paragraphs, footnotes. The manuscript contains no information about the further layout of the document, only the definition of the logical structure and therefore the layout-specification (i.e. the formatting) is independent from any formatter. Every formatting program can be used after the logical markup tags are mapped onto fitting formatting commands and/or macros.

The typoscript-file contains the document content intermixed with formatting-commands and/or -macros. In this sense the normal \TeX source file is a typoscript.

The printscript I is the output device independent formatted state of the document, e.g. the \TeX -output DVI-file.

The printscript II contains the formatted state of the document for the output on the chosen output device, e.g. the files that are produced by the different \TeX -drivers (as VIEW, DVILaser, etc.).

Actual State of Implementation

The TIGER- \TeX Workstation at the moment is a well-defined collection of software tools and hardware devices for the processing of each text, image and graphics with the possibility to use additional soft- and hardware within it.

Hardware

The TIGER- \TeX Workstation is based on IBM PC XT/AT hardware with Hercules graphics card.

Printing is done on the electronic printing system ELSA (from OLYMPIA). ELSA printing is based on the xerographic process (known from modern copiers) in connection with the use of so-called magneto-optical light switching arrays (instead of the laser beam used by commonly known laser printers). The printing resolution is 300 dots per inch and the printing speed 20 pages DIN A4 (or letter size) per minute.

Other hardware devices can additionally be used within TIGER, for example a flat bed scanner or camera scanner to input pixel information (images) into the system or a OCR-Reader for text input.

Software

The image processing toolbox of TIGER contains a pixel-editor for the creation and pixel-wise editing of image-files, -functions for the 1:1 representation on the screen and input routines to get pixel-information from above mentioned external hardware devices.

The TIGER graphics toolbox contains different CAD systems for the creation, editing and representation of vector graphics (e.g. UniCAD, AutoCAD, generic CAD).

Manuscript-preparation of texts in the above described sense of logical structuring is not yet supported by TIGER's text toolbox. For the input and editing of \TeX -sources we use an editor which is based on Borland's MS-editor including all MS-editor-functions as word wrap, block management and search and replace functions. The editor produces standard ASCII output (very fine for the \TeX -application) and can be used with Borland's Lightning spell checker. The advantage of having the editor in Turbo Pascal source also makes it possible, to create and insert any editor function you would like to have (if you're able to work with Turbo Pascal). This is very important for our work on a structure-oriented Editor for the manuscript-preparation (see further developments).

The text toolbox also contains the PCTeX -formatter, the VIEW-program and e.g. functions for printing the \TeX -source and -LOG file.

The physical integration of images and graphics into the text and the output on the electronic printing system ELSA is provided by the in-house-written driver DVIELSA . The driver gets the graphic- and image-files from their toolboxes and integrates them automatically into the text by using the special and midinsert commands of \TeX .

Further Developments

What we plan to do and what we are actually working on is an SGML-based author's subsystem, an interactive \TeX -environment and the realization of \TeX -output on typesetters.

SGML-based Author's Subsystem

In the announced release of TIGER- \TeX Workstation the described text-editor will be upgraded by an SGML-Processor and interactive functions to control and lead the author's input of document content considering a specified type of document to be created. SGML is a draft international standard of the ISO (international standardisation organization) for the definition of logical document type

structures and the description of logical structures of special documents.

Document types are for examples reports, letters, manuals or articles. The author's subsystem will have a library of available SGML-defined document types and the author will be able to add new document type definitions in an easy way. The process of creating and/or editing document-type-definitions will be controlled by an interactive user-interface, so the author of documents doesn't has to deal with SGML itself.

According to one of these document types, the manuscript editor will lead the author along the predefined logical document type structure and will control the input.

Also the author will not have to be familiar with \TeX if he doesn't want to be. The mapping of his logically structured manuscript onto a \TeX -processable typoscript will be automatically done by the system using predefined layout directives, which describe the way to replace the manuscript's logical markup tags by \TeX -macros, and this way create the typoscript. The author will have the possibility, to insert self-defined macros as layout directives, but he doesn't have to because there always will be predefined layout directives for every logical object of the document type he is working on.

One of the advantages of such an SGML-based Subsystem is the easy to perform interchanging of manuscripts to other SGML-based systems, where these manuscripts can be mapped onto different macros for other formatting programs without the need of making changes inside the manuscript itself. Another advantage is the possibility, to make \TeX useable for people, who are not interested in learning all \TeX -features, but are interested in getting fine \TeX -formatted output.

Interactive \TeX -Environment

We are actually working on a \TeX -implementation in an interactive environment on a APOLLO DN300 workstation, based on the GMD-Implementation on an ICL-PERQ-System as described by W. Appelt of the GMD in a further TUGboat-release.

 \TeX -Output on Typesetters

In order to achieve a professional application of \TeX , we hope to finish our work on a \TeX -driver for Linotype's LTC 300/500 within this year. Great effort still has to be made to generate the \TeX TFM-files (and also the corresponding VIEW/PREVIEW pixel-files) to have the wide spectrum of Linotype's fonts available for \TeX .