Abstracts

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Michel Goossens, Éditorial : dix ans de collaboration [Editorial: Ten years of collaboration]; pp. vi–vii

These proceedings contain most of the presentations made at the EuroTEX '98 Conference, which took place from March 29th to April 1st in Saint Malo (France) in the framework of the "Second Week on Electronic Publishing and Typography" (*WEPT'98*).

EuroTEX'98 was the tenth in a series of European conferences dedicated to the latest developments around TEX. ... It is noteworthy that several of [the other European TEX] organizations, just like GUTenberg, also celebrate their tenth anniversary in 1998.

... I would like to stress how the enthusiasm of the participants at the Conference has transformed EuroTEX '98 into a real TEX fiesta, proving once more that the Lion and Friends are well-prepared and ready to enter the next millenium with confidence and limitless energy!

[Excerpts from the English editorial]

Bruno Bachimont and Jean Charlet, PolyTEX : un environnement pour l'édition structurée de polycopiés électroniques multisupports [PolyTEX: an environment for structured editing of multi-purpose electronic documents]; pp. 1–16

PolyTEX is a prototype editorial working environment to facilitate production of materials *from a single source* for multimedia: specifically, course notes, Web pages, and transparencies for distribution via electronic means (computer screens) or hardcopy. Initially for the Mac and UNIX platforms, it uses programs currently available for free or at low cost. The article presents the project from initial course design (the conceptual stage) to final implementation (the teaching and materials distribution).

A. Berdnikov, O. Lapko, M. Kolodin, A. Janishevsky and A. Burykin, [The encoding paradigm in LATEX 2_ε and the projected X2 encoding for Cyrillic texts]; pp. 17–31

This paper describes the X2 encoding which is designed to support Cyrillic writing systems for the multilanguage mode of LATEX 2_ε. The restrictions of the LATEX 2_ε kernel, the specific features of Cyrillic writing systems and the basic principles used to create X2 are considered. This projected X2 encoding supports all the Cyrillic writing systems known to us, although the majority of the accented letters need to be constructed from pieces. The general scheme of the X2 encodingh was approved at CyrTUG-97 (the annual conference of Russian-speaking TEX users) and its final form was agreed on the `cyrtex-t2` mailing list.

[authors' abstract]

A. Berdnikov, O. Lapko, M. Kolodin, A. Janishevsky and A. Burykin, [Alphabets necessary for various Cyrillic writing systems (Towards X2 and T2 encodings)]; pp. 32–43

Characters, accents, modifiers, punctuation and stress symbols, etc., necessary to support modern Cyrillic texts are considered. The list of glyphs that we present supports all [Cyrillic] writing systems we know of. The paper also describes the peculiarities of several writing systems which are essential for TEX.

[authors' abstract]

A. Berdnikov and O.A. Grineva, Some problems with accents in TEX: Letters with multiple accents and accents varying for uppercase/lowercase letters ; pp. 44–55

The problems of using the internal command `\accent` as a tool for support of some Cyrillic writing systems is investigated. It is shown that the internal features of `\accent` prevent construction of some Cyrillic letters which require several accents simultaneously. A special macro which emulates the work of `\accent` by some other commands is suggested.

The accents for I/i and J/j, which are different for uppercase and lowercase letters, are also considered. *If-then-else* structures by use of which correct accents can be placed, depending on the letter case, are proposed. A similar technique can be used for case change in the Cyrillic "capital form" ligatures Љ and Њ.

[authors' abstract]

Marcia J. Bossy, WWW-TED : thesaurus évolutif et dynamique pour bases de liens HTML

[WWW-TED: dynamic thesaurus for database management of HTML links]; pp. 56–71

We consider the need for a database management tool in Web-based scientific research. We then propose an approach using WWW-TED, a dynamic thesaurus for use with medium-sized (300 to 3,000 links) HTML pages. The audience for such a tool includes researchers and research groups which require precise management of their database collections.

[from author's résumé and introduction]

Šarūnas Burdulis and Vytas Statulevičius, [Real-life application of TEX and Adobe Acrobat for electronic publishing: A handbook for algebra and a journal archive]; pp. 72–81

A classical way of using TEX in printed typesetting was enhanced for use of the same TEX source to publish electronically. A handbook of algebra and a 4-year journal archive (280 articles) were electronically published using the same TEX source files to produce both the PDF in a form for reading on-screen and a version for printing a hard copy. A package written in plain TEX provided the mark-up of the logical structure, cross-references, bibliographical references, author names, keywords and symbols. The hypertext contents, index pages and a complete navigation system are also made in PDF and were pre-programmed at the TEX level. Being completely a PDF product the same publications are thus usable on any computer system for which a PDF viewer exists.

[from authors' abstract]

Janka Chlebíková, [The Euromath system — The structured editor for mathematicians]; pp. 82–93

The Euromath system is the result of a project funded through the SCIENCE programme of the European Commission and administered through the European Mathematical Trust. Its aim is to create a homogeneous computer working environment for mathematicians, based on a uniform data model, and to stimulate interchange among them based on modern information technolotg.

The core of the system is a powerful SGML structured editor, Grif, combining the advantages of a WYSIWYG approach and structured editing. SGML is rapidly becoming the standard for publishing and for full-text databases. The Euromath system is at the forefront in exploiting the benefits of SGML for scientific documentation and also the typesetting qualities of the TEX system.

[from author's abstract]

Matthias Clasen and Ulrik Vieth, [Towards a new math font encoding for (LA)TEX]; pp. 94–121

This paper presents a snapshot of ongoing work towards a prototype implementation of new 8-bit math font encodings for (LA)TEX, based on the 'Aston' proposal, presented at the TUG '93 conference. The design goals and technical considerations that have led to the present font table layouts are summarized and the contents and organization of the individual encodings are presented in detail. Finally, some alternative approaches and some remaining open problems are discussed.

[authors' abstract]

Thomas Esser, [The teTEX system: Concepts of installation, configuration and maintenance]; pp. 122–130

teTEX is a complete TEX distribution for UNIX platforms that claims to be easy to install, to configure, to maintain and to use. This article describes the underlying basic concepts and design decisions that have been used to achieve this goal.

[author's abstract]

Jean-Daniel Fekete, Expérience de codage de document à intérêt graphique à l'aide de TEI [Encoding a graphics document using TEI]; pp. 131–142

While encoding text documents is now well in hand, documents with graphics still pose several problems. In this article, we describe the use of SGML in combination with the TEI DTD, to encode the encyclopedia, *La chose imprimée*. ... Normally, SGML documents are processed by DSSSL, which does not, however, currently have any mechanisms for documents with graphics components. We therefore used PERL to devise the necessary translation programs.

[from author's résumé]

Bernard Gaulle, Comment peut-on personnaliser l'extension `french` de LATEX ? [How to customize the `french` package for LATEX]; pp. 143–157

The `french` package for LATEX presents users with a large number of basic options which they can customise to suit their exact requirements. This customisation can be performed at various points in the document, and can be temporary or permanent. Some parameters affect the macro-typography of the document (such as page layout), whilst others are relevant to the micro-typography (such as spacing around punctuation). Possible actions are, for example, to add new functionality, to mix styles and even to define new languages or dialects.

This article describes the various ways of customising the `french` package, either for personal use or as part of a workgroup.

[author's abstract]

Denis Girou and Sebastian Rahtz, [Verbatim revisited — the '`fancyvrb`' package]; pp. 158–179

This talk introduces Timothy van Zandt's `fancyvrb` LaTeX package, which provides very sophisticated facilities for reading and writing verbatim TeX code. Users can perform common tasks like changing font family and size, numbering lines, framing code examples, colouring text and conditionally processing text. The main part of this paper is a set of tutorial examples of how to create customized verbatim environments, and it concludes with a description of how `fancyvrb` was used in the typesetting of the *LaTeX Graphics Companion*.

[authors' abstract]

Michel Goossens, XML et le futur du Web [XML and the future of the Web]; p. 180

Late in 1996, the W3C and several major software vendors decided to define a markup language specifically optimized for the Web: XML (eXtensible Markup Language) was born. It is a simple dialect of SGML, which does not use most of SGML's seldom used and complex functions, and does away with most limitations of HTML. After an introduction to the XML standard, we briefly describe XLL (eXtensible Linking Language) for hyperlinks and XSL (eXtensible Style Language) for style sheets. We also discuss some of the many applications based on XML.

[author's abstract]

[The author then notes that the complete text of the article will appear in an upcoming thematic issue of the *Cahiers GUTenberg*, to be devoted to XML.]

Michel Goossens and Jean-Yves Le Meur, Afficher les documents scientifiques sur le Web [Posting scientific documents to the Web]; pp. 181–196

Every day CERN handles a large number of research documents, mostly marked up in LaTeX and coming from many Internet servers. Our aim is to make them easily locatable on the Web with the help of the CERN Library's *Preprint Catalogue* in several formats (PostScript, PDF, GIF). We review the conversion procedures and give some details on some massive production trial runs to directly generate HTML from the TeX sources. We conclude with a discussion of recent developments in the framework of the XML (and MML) efforts which should ease the support of mathematics formulae in Web browsers.

[author's abstract]

Hàn Thế Thành, The pdfTeX Program ; pp. 197–210

pdfTeX is an extension to TeX which allows the user to generate either `DVI` or PDF as the primary output format The current feature set of pdfTeX is discussed, and further extensions which are currently under consideration for adoption are reviewed.

[author's abstract]

Hirotsugu Kakugawa, [VFlib — A general font library that supports multiple font formats]; pp. 211–222

VFlib is a font library written in C which provides several functions for obtaining bitmaps of characters (i.e. a rasterizer). VFlib hides the font format of font files and provides a unified API for all supported font formats. Thus, programmers of application software need not worry about font file formats. Instead, any software using VFlib can support various font file formats immediately. In addition to this, when a new font format is supported by VFlib, application software need not be modified to use such new fonts.

VFlib has been developed not only for Latin fonts but also Asian scripts such as Chinese, Japanese, and Korean. Since it is designed as a general font module, it can be used in DVI drivers for TeX and LaTeX. In this paper we explain the API of VFlib, a font database file called vflibcap, and the internal structure of VFlib.

[author's abstract]

Roger Kehr, [xǐndy — A flexible indexing system]; pp. 223–230

Whilst MakeIndex is an index processor which is suitable for the production of indexes in conjunction with many text formatters, its support for non-English langauges is weak and a new version called International MakeIndex was presented for processing international documents. The improvements concentrated on the internationalization of the sorting process for keywords in an index. Though it substantially improves the possibility of sorting new languages, there are still weaknesses in the processing model largely inherited from MakeIndex. Through the experience gained from the International MakeIndex project we have implemented a new index processor xǐndy that (a) improves the sorting of index entries at a finer granularity than International MakeIndex, (b) offers new mechanisms for processing structured location references besides

page numbers and roman numerals, and (c) allows for complex mark-up schemes.

[author's abstract]

Sergey Lesenko, [DVIPDF and Embedded PDF]; pp. 231–241

We explain how the current version of the DVIPDF program manages to integrate external multipage PDF files into its own PDF output.

[author's abstract]

Marie-Louise Munier and Ahmed Mahboub, Expérience de TEX (LATEX) dans la chaîne éditoriale [TEX (LATEX) experiences in the editorial process]; pp. 242–251

Our aim is not to address current topics in typography or the quality of electronic documents, but to describe our experience with LATEX and other public domain software in a publishing house. Following a brief historical overview of our experience with LATEX, the electronic submission of manuscripts, instructions for authors, stylesheets, LATEX 2_ε and $\mathcal{AMS}$-LATEX assets will be addressed. The last part of this report will be devoted to the EDP Sciences Web server.

[author's abstract]

Christophe Pythoud, *Français–GUTenberg* : un nouveau dictionnaire français pour ISPELL [*French–GUTenberg*: A new French dictionary for ISPELL]; pp. 252–275

This paper presents choices made in elaborating a new French dictionary for the ISPELL spell checker. How to augment the dictionary is also explained. The *ad hoc* tools to do this are demonstrated.

[author's abstract]

Petr Sojka, [An experience from a digitization project]; pp. 276–282

An experience from the process of adding logical markup to visually tagged scanned data is presented. The method of gradual markup enhancement is shown. Methods of navigation in a large hypertext document based on typesetting from logical markup are suggested — physical, logical and semantic user views. Their application on a 28,000-page project to create an electronic encyclopædia is described and problems faced when using Adobe's Acrobat technology for publishing are discusssed.

[author's abstract]

Richard Southall, [Prototyping telephone-directory pages with TEX]; pp. 283–294

The development of a prototype formatter for telephone-directory pages, written in TEX and using fonts made with Metafont, is described. The formatter was used to decide the detailed typography of directory entries. Issues connected with the markup language used in the directory data files are discussed.

[author's abstract]

Robert S. Sutor and Angel L. Díaz, [IBM techexplorer: Scientific publishing for the Internet]; pp. 295–308

The IBM techexplorer Hypermedia Browser is an application for the interactive publication of scientific and technical documents. The original project started as an experiment at IBM Research to see how a from-scratch implementation of a subset of TEX, LATEX, and $\mathcal{AMS}$-LATEX could be extended to support interactive viewing of documents for a computer algebra system. This interactivity is accomplished via support for hypertext, multimedia, user-defined pop-up windows and menus, and a modular architecture that allows connections with other applications and Java applets. The primary version of techexporer operates as a Netscape Navigator plug-in and is available for several platforms, including Windows 95 and NT, IBM AIX, and Sun Solaris. In addition to being able to display full documents using the supported TEX subset, techexplorer is being extended to support the new "Mathematical Markup Language" from the HTML Math Working Group of the World Wide Web Consortium. In this paper, we provide an overview of techexplorer and detail how it can be used to deliver mathematical articles, book, and course materials via the World Wide Web. We also discuss our intended use of the OpenMath standard to allow documents to contain reusable semantically attributed math objects.

[authors' abstract]

[Compiled by Christina Thiele]

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