

Letters to the Editor

An Appeal from Romania

The popular upsurge of 22 December 1989 brought liberty to the Romanian people. Physicists everywhere can do much to help rebuild the country. But minds, hands, and goodwill are not enough. We have been cut off from the international scientific community for almost ten years. We received no more than an average of 20 to 30 physics journals each year. We badly need to fill the gaps and starting next year we hope to receive government funds to buy indispensable scientific literature, in addition to scientific equipment.

However, it is much too early to think of this. We appeal therefore to our fellow physicists, to institutes and laboratories and to publishing houses in Europe to help us. In particular, with its kind agreement we have mailed to the EPS Secretariat in Geneva lists of back numbers of journals needed in our libraries. We simply ask for friendly help with anything libraries, laboratories and individuals can afford. We have always considered ourselves as Europeans and we wish to act from now on as such. We thank the EPS for its kind offer to help us and to coordinate individual efforts. We sincerely thank all of you.

G. Pascovi, Director General of the Institute of Atomic Physics, Bucharest

I.A. Dorobantu, Executive Secretary of the Romanian Physical Society.



Mathematica™

A System for Doing Mathematics by Computer

A Wolfram Research Inc. product

Numerics - Works with numbers of arbitrary magnitude and precision.

Symbolics - Encyclopaedia of mathematical functions and operations used in arithmetic, algebra and analysis.

Procedural, functional and mathematical programming.

Graphics - 2D, 3D and animated PostScript graphics.

Text processing - Fully interactive reports and textbooks.

Runs on - MS-DOS based computers; Macintosh, Apollo, Hewlett Packard, IBM AIX/RT, MIPS, Silicon Graphics, Sony, Sun, VAX.

Now available in Europe from:

MathSoft Overseas, Inc.

POB 641, 1211 Geneva 3, Switzerland

Tel. ++41 (22) 46 52 60

Fax ++41 (22) 46 59 39

Why T_EX Is So Popular

Van Herwijnen and Sens (*Europhysics News* 20 (1989) 171) propose SGML as a meta-language for a hard- and soft-ware independent, generic mark-up language for the layout of scientific manuscripts, so as to ease communication between authors, publishers, etc. The scientific community indeed needs a meta-language for the machine independent description of the layout of a manuscript to facilitate the worldwide exchange and handling of manuscripts.

Various device-independent meta-languages such as RUNOFF, SCRIPT and T_EX are in use. To output on a specific device, text generated using them must be compiled. The text itself has to be typed in using any locally available editor (word processor) such as WORD, XEDIT or ISPF, with the only condition that they come up with an ASCII or EBCDIC file. Most of these meta-language compilers are now widely available. Many publishers have also developed compilers for their own use.

Compilers supporting meta-languages do not themselves possess an editor, so freeing the author to use any editor. Thus, statistics concerning text processing systems should specify separately the editor and the text formatting language (in contrast to Figs. 6 and 7 of the article).

Work aimed at standardizing text processors clearly deserves acknowledgement. With regard to meta-languages, the scientific community has apparently made its choice, as nicely demonstrated by the authors' Fig. 6, which illustrates the overwhelming use of T_EX by those involved with large, complicated scientific texts or with communication using electronic networks.

T_EX is available as a public domain package, a fact that stimulates many users to enhance its abilities. The fact that this non-commercial package became to be used so much indicates its level of proficiency.

By analogy, it proved to be impossible to spread the use of Esperanto instead of English, even though it may have some logical advantages of simplicity over the complexity of the existing language, which has been developed over many years.

E.R. Hilf, B.G.J. Nitzschmann
University of Oldenburg, FRG

In Defense of SGML

In reply to the letter by E.R. Hilf and B.G.J. Nitzschmann we are publishing this Appendix to the article by E. van Erwijnen and J.C. Sens.

Appendix: The relationship between SGML and T_EX, ODA/ODIF and PostScript

Discussions about why SGML and not T_EX, ODA/ODIF or PostScript are often tainted by prejudice. It should be made clear that these standards are not in competition;

nor are they incompatible with one another. They simply address different areas of the publishing process. An SGML input system coupled to the T_EX formatter which produces PostScript output for driving a printer is a valid combination.

The basic difference between SGML and T_EX, PostScript and ODA/ODIF, is that the latter are languages that have very specific purposes. For example, PostScript will be adequate for transporting final form documents to a remote laserprinter. If one wants to do more with a document a system such as SGML is necessary, in addition to some application that will produce PostScript. One should remember that the use of SGML makes a document completely independent of any text formatter or output system.

Some reasons why SGML is more suitable as an interchange standard than T_EX¹⁾ are the following:

- Portability of SGML documents vs T_EX documents. T_EX was not designed to be an interchange standard. This may be seen from the fact that it makes extensive use of characters such as “\” (backslash) and “:” (caret). These are troublesome when a file is transported from one system to another.
- Font files missing. Another source of problems arises because T_EX files often contain information about the fonts which are available locally at printing time. If the fonts are not present at the receiving end, the file may be unprintable.
- Creation and maintenance of generic mark-up. The use of an SGML input system implies that the underlying generic mark-up language may be written in a very simple way, since an SGML parser will check if the context in which the mark-up appears is correct. The mark-up codes (usually provided by “macros”) will require less time to write and will be easier to maintain.

PostScript is a popular “page description” language which is being adopted by many manufacturers of laser printers. It is a programming language intended to describe documents in their final formatted form, and is unlike SGML which is intended to capture their intellectual content. However, only 5% of all the laser printers in the world support PostScript. There are many other *de facto* standard page description languages in use.

It should also be noted that an ISO working group is currently preparing an ISO standard page description language (SPDL) which will eventually replace PostScript and other page description languages. Building a large system based on PostScript may be premature.

ODA/ODIF is another ISO standard (ISO 8613) for text interchange but it addresses the area of office documents rather than documents for publication.

¹⁾ We recognise the popularity of T_EX through its elegance and its appeal to mathematical intuition, but the following remarks are probably applicable to any text processor.